



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

Market Review

Wholesale High Quality Access at a Fixed Location

Response to 2018 Further Consultation and Decision

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An Coimisiún um Rialáil Cumarsáide
Commission for Communications Regulation

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Redacted Information

Please note that this is a non-confidential version of the Wholesale High Quality Access at a Fixed Location Consultation, Response to 2018 Further Consultation and Decision (ComReg Document 20/06). Certain information within the Response to 2018 Further Consultation and Decision has been redacted from the public version for reasons of confidentiality, with such redactions indicated by the symbol ✂.

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1 Executive Summary

1.1 Overview

Introduction

- 1.1 This Decision presents ComReg's updated analysis and positions on its assessment of the market(s) for Wholesale High Quality Access ('**WHQA**') services provided at a fixed location¹.
- 1.2 WHQA services, also commonly known as "wholesale leased line" services, play an important role in facilitating the provision of downstream retail leased lines services, as well as being used by Service Providers ('**SP(s)**') as network inputs to extend the coverage of their networks.
- 1.3 Leased line ('**LL**') services provide dedicated high quality and reliable data connectivity between physical locations and support the provision of retail Information and Communications Technology ('**ICT**'). LL services, whether retail or wholesale, typically include guaranteed high quality service levels (such as repair times), symmetric upload and download speeds, and guaranteed service availability.
- 1.4 Typically, retail LL services are demanded by organisations in both the private and public sectors to support a wide variety of ICT applications, such as access to the internet, private voice and data networks, cloud based services, backup and disaster recovery, remote monitoring and telemetry applications. Retail LL services are also used to build Virtual Private Networks ('**VPNs**') that allow business organisations to link business premises together, including data centres, so that offices can exchange data and access corporate applications. This also allows retail organisations to offer a multiplicity of services to business and retail consumers via the internet or data networks.

¹ Corresponding to Market 4 listed in the European Commission Recommendation 2014/710/EU of 09 October 2014 on relevant product and services markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (the '**2014 Recommendation**'), (OJ L 295, 11.10.2014, p. 79).

- 1.5 Apart from supporting the provision of various retail services, WHQA services can also be important network inputs for SPs themselves. In this respect, SPs can use WHQA services to extend the physical reach of their networks, including for backhauling data and/or voice traffic. This, in turn, enables them to provide a range of fixed and/or mobile communications services to consumers and business customers. Some SPs may also use WHQA as inputs to the provision of other wholesale services.
- 1.6 Currently, there are a number of SPs supplying wholesale (and retail) LL services in Ireland including Airspeed/enet, BT Ireland, Colt, Eircom, Verizon, Viatel and Virgin Media, amongst others.
- 1.7 Consistent with ComReg's regulatory role to review certain electronic communications markets, the objective of this review is to examine the extent of competition within WHQA Market(s). This involves the assessment of competition in the WHQA Market(s) in order to determine whether any operator has Significant Market Power ('SMP') in this Market(s). In circumstances where such a market is not found to be effectively competitive due to one or more SPs being identified as having SMP, the imposition of appropriate *ex ante* regulatory obligations on such SP(s) is required in order to address identified competition problems that could arise in the WHQA Market(s) or related markets, absent regulatory intervention. Similarly, if effective competition is found to exist within WHQA Market(s), then regulatory intervention in such WHQA Market(s) would not be warranted.

2016 Consultation Proposals

- 1.8 In August 2016 ComReg issued the 2016 Consultation² that set out its then preliminary views based on an analysis of the WHQA Market(s). In the 2016 Consultation, ComReg set out proposals on the definition of the WHQA Market(s) and its associated SMP assessment, as well as proposed obligations or remedies (as appropriate) that were to be imposed on any SPs identified as having SMP, with a view to addressing potential competition problems to the ultimate benefit of End-Users.

² "Market Review - Wholesale High Quality Access at a Fixed Location, Consultation, [ComReg Document 16/69](#), 18 August 2016" (the '**2016 Consultation**').

- 1.9 In the 2016 Consultation, ComReg identified three separate WHQA markets, namely:
- (a) a national Low Bandwidth ('**LB**') Traditional Interface ('**TI**') WHQA Market consisting of analogue, digital and TDM wholesale LLs with bandwidths $\leq 2\text{Mb/s}$;
 - (b) a national High Bandwidth ('**HB**') TI WHQA Market consisting of TDM wholesale LLs with bandwidths $> 2\text{Mb/s}$, and
 - (c) a national Modern Interface ('**MI**') WHQA Market' consisting of all Ethernet, EFM³, xWDM⁴ (and other modern interfaces) LLs of any bandwidth.
- 1.10 It was proposed by ComReg at that time that the above markets would not distinguish between the different types of transmission media (wireless, fibre, copper) used to provide these wholesale LLs, i.e. they were transmission media neutral.
- 1.11 In terms of the SMP assessment in the above markets, ComReg's preliminary views in the 2016 Consultation were that:
- (a) Eircom is likely to have SMP in the LB TI WHQA Market;
 - (b) No Undertaking is likely to have SMP in the HB TI WHQA Market; and
 - (c) No Undertaking is likely to have SMP in the MI WHQA Markets.
- 1.12 Having identified in the 2016 Consultation on a preliminary basis that Eircom had SMP in the LB TI WHQA Market, ComReg proposed to impose a range of obligations upon Eircom designed to address an identified set of competition problems that could occur, absent regulation. Such obligations largely maintained obligations that had been in place to date arising from the previous review of wholesale lease line markets in the 2008 Decision⁵ (and subsequent decisions).

³ Ethernet First Mile ('**EFM**') is a set of specifications that allow service providers to run Ethernet over multiple bonded copper pairs in the access network segment to connect the "first mile" from the customer to the nearest network node.

⁴ Wavelength Division Multiplexing ('**WDM**') is a technology which multiplexes a number of optical carrier signals onto a single optical fibre by using different wavelengths.

⁵ See "[Market Analysis – Leased Lines Market Review, ComReg Document 08/103, Decision D06/08](#)", dated 22 December 2008 ('**2008 Decision**').

- 1.13 With respect to the HB TI WHQA Market and MI WHQA Market, ComReg proposed to withdraw existing regulatory obligations given its then preliminary view that no SP had SMP. In this respect, ComReg proposed that certain existing obligations would be withdrawn once ComReg made its final decision, while for others a sunset period was considered appropriate in order to facilitate a smooth transition to full deregulation.
- 1.14 12 responses (**'2016 Submission(s)'**) to the 2016 Consultation were received from a range of industry stakeholders (together referred to as the **'2016 Respondent(s)'**)⁶.
- 1.15 In parallel with the above consultation process, ComReg also sought additional quantitative and factual information from relevant SPs via Statutory Information Requests (**'SIR(s)'**). This information, which was of better quality and granularity to that which was available at the time of the 2016 Consultation, supplemented other quantitative information available to ComReg.

2018 Further Consultation Proposals

- 1.16 Having taken account of the 2016 Submissions and the additional data obtained and available at that time, in February 2018 ComReg published its 2018 Further Consultation⁷ in which it set out its intention to amend some of its preliminary views as set out in the 2016 Consultation, primarily in relation to the definition of the MI WHQA Markets and, as a consequence, the associated competition assessment and remedies.
- 1.17 In summary, ComReg's further preliminary view in the 2018 Further Consultation was that MI WHQA LLs provided over point-to-point (**'P2P'**) radio links were not likely to be an effective substitute for wired MI WHQA connectivity.

⁶ Respondents' non-confidential Submissions have been published. See "Market Review: Wholesale High Quality Access at a Fixed Location, Submissions to Consultation 16/69, [ComReg Document 16/104s](#), 30 November 2016" (**'2016 Submissions'**).

⁷ Market Review - Wholesale High Quality Access at a Fixed Location, Response to Consultation, Further Consultation and Draft Decision, [ComReg Document 18/08](#), 18 August 2016" (the **'2018 Further Consultation'**). Further details, including associated appendices, are available [HERE](#) .

- 1.18 Furthermore, ComReg considered that there were likely to be two separate geographic MI WHQA Markets, a **'Zone A'** MI WHQA Markets and a **'Zone B'** MI WHQA Markets. Each zone corresponded to a specific geographic area distinguishable according to a grouping of 'Small Areas'⁸, where ComReg considered that the conditions of competition in Zone A⁹ are similar or sufficiently homogeneous and which can be distinguished from the Zone B¹⁰ area in which the prevailing conditions of competition are appreciably different. Such differences in the conditions of competition between Zone A and Zone B arose as a result of the presence of competing infrastructure and consequently, the number of competing service providers present and the associated competitive dynamics.
- 1.19 Insofar as the LB TI WHQA Market and the HB TI WHQA Market were concerned, ComReg's further preliminary view in the 2018 Further Consultation was that the definition of such markets as set out in the 2016 Consultation remained appropriate.
- 1.20 In assessing competition within the WHQA Markets, in the 2018 Further Consultation ComReg considered that:
- (a) Eircom is likely to have SMP in the LB TI WHQA Market;
 - (b) No Undertaking is likely to have SMP in the HB TI WHQA Market;
 - (c) No Undertaking is likely to have SMP in the Zone A MI WHQA Market; and
 - (d) Eircom is likely to have SMP in the Zone B MI WHQA Market.
- 1.21 In the 2018 Further Consultation, ComReg specified how it was going to promote the development of retail competition by imposing wholesale regulatory obligations, as appropriate, on Eircom in the LB TI WHQA Market and the Zone B MI WHQA Market.
- 1.22 Existing obligations in the HB TI WHQA Market and Zone A MI WHQA Market were proposed to be withdrawn, although a 6 to 12 month sunset periods were proposed for the withdrawal of some obligations.

⁸ Small Areas have been developed by Ordnance Survey Ireland ('OSI') for the Central Statistics Office ('CSO'). See <http://www.cso.ie/en/census/census2016reports/census2016smallareapopulationstatistics/> for more details.

⁹ At the time Zone A corresponded to an identified specific set of 3,048 Small Areas which covered approximately 6,300 wired MI WHQA connected business premises in the State.

¹⁰ At the time Zone B corresponded to an identified specific set of 15,593 Small Areas which covered approximately 3,300 wired MI WHQA connected business premises in the State.

1.23 7 responses to the 2018 Further Consultation (**'Submission(s)'**) were received from a range of industry stakeholders (together referred to as the **'Respondent(s)'**), namely:

- (a) Alternative Operators in the Communications Market (**'ALTO'**);
- (b) BT Communications Ireland Limited (**'BT'**);
- (c) Eircom Limited (**'Eircom'**);
- (d) e-Nasc Éireann Teoranta (**'enet'**);
- (e) Verizon (**'Verizon'**);
- (f) Vodafone Ireland Limited (**'Vodafone'**); and
- (g) Zayo (**'Zayo'**).

A non-confidential version of the Submissions is set out in Annex 11 of this Decision.

Positions in this Decision

1.24 The focus of most of the Submissions related to the MI WHQA Markets, in particular whether P2P radio links are an effective substitute for wired MI WHQA connectivity, as well as commenting on the methodology employed by ComReg in assessing the geographic scope of the MI WHQA Markets and the resulting definition of the separate geographic Zone A MI WHQA Market and Zone B MI WHQA Market. Comments were also received from Respondents on other aspects of the assessment, including remedies.

1.25 In parallel with the 2018 Further Consultation ComReg has obtained additional updated network and service information from SPs using its statutory information gathering powers, as well as through more informal requests for information. This information, together with the Submissions, has been taken into account by ComReg in setting out the positions in this Decision.

TI WHQA Markets

1.26 Insofar as the TI WHQA Markets are concerned, consistent with its preliminary views in the 2016 Consultation and 2018 Further Consultation, ComReg's position in this Decision is that there are two such markets, namely:

- (a) a national LB TI WHQA Market consisting of analogue, digital and TDM wholesale LLs with bandwidths $\leq 2\text{Mb/s}$; and
- (b) a national HB TI WHQA Market consisting of TDM wholesale LLs with bandwidths $> 2\text{Mb/s}$.

- 1.27 Having assessed competition within the TI WHQA Markets, consistent with its preliminary views in the 2016 Consultation and 2018 Further Consultation ComReg's position is that that:
- (a) Eircom is likely to have SMP in the LB TI WHQA Market; and
 - (b) No Undertaking is likely to have SMP in the HB TI WHQA Market.
- 1.28 With respect to the LB TI WHQA Market, consistent with its preliminary views in the 2016 Consultation and 2018 Further Consultation, the obligations that ComReg is imposing in this Decision include Access, Transparency, Non-Discrimination, Price Control and Cost Accounting, and Accounting Separation.
- 1.29 The access obligations being imposed on Eircom in LB TI WHQA Market are primarily based on the products and services that are currently imposed under the 2008 Decision, with all relevant obligations having their wording updated to reflect current regulatory practice. ComReg is, however, also removing some existing regulatory obligations and is no longer requiring Eircom to provide access to legacy LB TI WHQA LLs such as analogue LLs and wholesale end-to-end LLs ('**WLL(s)**')¹¹.
- 1.30 In relation to pricing obligations, ComReg is imposing requirements that all regulated services in LB TI WHQA Market are cost oriented. ComReg is, however, removing existing margin squeeze obligations.

MI WHQA Markets

- 1.31 Insofar as the MI WHQA Markets are concerned, consistent with its further preliminary views in the 2018 Further Consultation, ComReg's position in this Decision is that, from a product perspective, the MI WHQA Markets consist of all wired Ethernet, EFM, xWDM (and other modern interfaces) LLs of any bandwidth.
- 1.32 Having regard to the consideration of Respondents' views to the 2018 Further Consultation, as well as the availability of updated data as provided by SPs and other stakeholders, ComReg has updated some of the parameters employed in assessing the geographic scope of the MI WHQA Markets. This includes:

¹¹ Eircom's WLLs connect directly to the End User A-end and B-end locations and does not require any Access Seeker infrastructure.

- (a) Moving from Small Areas as the geographic unit of choice for the geographic market assessment to Work Place Zones ('**WPZ(s)**')¹², given WPZs more approximately reflect the business nature of WHQA demand and supply conditions;
- (b) Updating the distance criterion used for measuring the proximity of currently connected LL premises to SPs' LL networks from 100 metres to 50 metres given such distances recognise networks will typically follow road and path routes rather than straight line distances;
- (c) Discounting the use of 'forecasted demand' in the geographic markets assessment as this cannot be reliably calculated given the absence of relevant data and evidence that shows that measures of forecasted demand do not correlate sufficiently with what has transpired to be actual demand;
- (d) Given enet's Metropolitan Area Networks ('**MANs**') are effectively under common ownership – with group companies active at both the retail as well as the wholesale level in the provision of MI WHQA services – ComReg has decided to treat the assets under the control of enet – both public and private – in the similar fashion to the assets under the control of other vertically integrated SPs, i.e. we treat enet's MAN assets as one network;
- (e) The introduction of a "Business Parks " test to address contiguity issues where a Business Park which contains 2 or more ANs intersects with a WPZ of high density AN infrastructure; and
- (f) An "Islands" test, also to address contiguity issues where a WPZ is entirely surrounded by WPZs of similar magnitude which contain high densities of AN infrastructure.

1.33 However, the principle of assessing any geographic differences in competition across different geographic areas according to factors such as the number of competing networks and the proximity of currently connected LLs customers to these networks remains the same. ComReg's position, therefore is that the following four separate geographically differentiated '**MI WHQA Markets**' exist, all consisting of all wired EFM, Ethernet, xWDM (and other modern interfaces) LLs of any bandwidth, in particular:

¹² WPZs are an administrative unit created by Ireland's Central Statistics Office ('**CSO**') and are designed to capture 'daytime population' of areas. The daytime population includes everybody who indicated they worked or studied in the area, along with persons in that area who do not work or study (and so are there during the day). There are 7,219 WPZs in Ireland. Further details on the CSO construct of WPZs are available [HERE](#).

- (a) an **Area 1 MI WHQA Market** consisting of all wired EFM, Ethernet, xWDM (and other modern interfaces) LLs of any bandwidth, with this market corresponding to an identified specific set of 1,582 WPZs which cover approximately 58.4% of wired MI WHQA connected business premises in the State;
 - (b) an **Area 2 MI WHQA Market** consisting of all wired EFM, Ethernet, xWDM (and other modern interfaces) LLs of any bandwidth, with this market corresponding to an identified specific set of 1,998 WPZs which cover approximately 41.6% of wired MI WHQA connected business premises in the State;
 - (c) an **Area 3 MI WHQA Market** consisting of all wired EFM, Ethernet, xWDM (and other modern interfaces) LLs of any bandwidth, with this market corresponding to an identified specific set of 1,153 WPZs;¹³ and
 - (d) an **Area 4 MI WHQA Market** consisting of all wired EFM, Ethernet, xWDM (and other modern interfaces) LLs of any bandwidth, with this market corresponding to an identified specific set of 2,486 WPZs.¹⁴
- 1.34 The Area 1 MI WHQA Market to Area 4 MI WHQA Market above (together the '**MI WHQA Markets**') are the same from a product perspective, but from a geographic perspective each is comprised of an area distinguishable according to the grouping of specifically identified WPZs which display sufficiently homogenous conditions of competition.
- 1.35 Having assessed competition within the above MI WHQA Markets, ComReg's position is that:
- (a) No Undertaking is likely to have SMP in the Area 1 MI WHQA Market;
 - (b) Eircom is likely to have SMP in the Area 2 MI WHQA Market;
 - (c) No Undertaking is likely to have SMP in the Area 3 MI WHQA Market; and
 - (d) Eircom is likely to have SMP in the Area 4 MI WHQA Market.
- 1.36 For the purpose of the competition problem assessment and the application of remedies, ComReg has amalgamated the MI WHQA Markets as follows (they are identical from a product perspective):

¹³ There are no connected premises in the Area 3 MI WHQA Market. This market is comprised of the relevant geographic areas that have at least 2 alternative networks (other than Eircom) present or are completely surrounded by Zone A MI WHQA Markets.

¹⁴ There are no connected premises in the Area 4 MI WHQA Market. There are, however, less than 2 alternative networks (other than Eircom) present in the relevant geographic areas that comprise this market.

- (a) Zone A MI WHQA Markets: consist of the Area 1 MI WHQA Market and Area 3 MI WHQA Market (**'Zone A MI WHQA Markets'**); and
- (b) Zone B MI WHQA Markets: consist of the Area 2 MI WHQA Market and Area 4 MI WHQA Market (**'Zone B MI WHQA Markets'**).

- 1.37 In the Zone B MI WHQA Markets, ComReg has also brought the wording of all regulatory obligations in line with current regulatory practice. Access obligations are primarily based on the products and services that are currently imposed under the 2008 Decision. However, ComReg is also imposing a suite of interconnection obligations in the MI WHQA Markets, irrespective of whether it is the Zone A MI WHQA Markets or Zone B MI WHQA Markets in order to facilitate competition in the Zone B MI WHQA Markets and related retail MI LL markets. Additionally, given that MI WHQA services continue to grow in volume, and having regard to their importance in facilitating downstream competition (including within the retail MI LL market), ComReg considers it justified and proportionate to expand and develop a number of existing regulatory obligations on Eircom, particularly in the area of requirements governing SLA negotiation periods, transparency regarding product development and the provision of a Statement of Compliance.
- 1.38 In relation to pricing obligations, ComReg has imposed cost-orientated prices including on all ancillary services such as interconnection for Zone B MI WHQA services. ComReg is, however, removing existing margin squeeze obligations.

- 1.39 In arriving at the above conclusions, ComReg has, in accordance with its relevant statutory obligations: consulted with the Competition and Consumer Protection Commission ('**CCPC**'), notified the European Commission ('**EC**'), BEREC,¹⁵ and other National Regulatory Authorities ('**NRAs**') regarding the measures which it proposes to take (the '**Notified Draft Measures**').¹⁶ The CCPC is in agreement with ComReg's analysis¹⁷ and on 3rd December 2019 the EC issued its response to ComReg (the '**EC Response**'), in which it commented on the market analysis, as further set out in Annex 13 below.¹⁸
- 1.40 In arriving at the positions set out in this Decision, ComReg has taken utmost account of the EC's comments. ComReg's consideration of the EC's comments is set out in Annex 13 and elsewhere throughout this Decision, as appropriate.
- 1.41 Below, ComReg provides an overview of the main positions set out in this Decision. The TI MI WHQA Market and MI WHQA Markets are referred to together in this Decision as the '**Relevant WHQA Markets**'.

1.2 Summary of Overall Positions in this Decision

- 1.42 Below ComReg summarises the main positions arising from its review of the Relevant WHQA Markets. ComReg notes that this summary should be read in the context of the analysis set out in this Decision, the 2018 Further Consultation (and the 2016 Consultation), where a detailed explanation of the reasons behind these positions is set out.

¹⁵ Body of European Regulators for Electronic Communications ('**BEREC**') as established by Regulation (EC) No 1211/2009 of the European Parliament and of the Council of 25 November 2009 establishing the Body of European Regulators for Electronic Communications and the Office.

¹⁶ A non-confidential version of the Notified Draft Measures is available online at <https://circabc.europa.eu/ui/group/2328c58f-1fed-4402-a6cc-0f0237699dc3/library/2f2603d7-0d83-4dde-b17b-603bdcc667ae/details>.

¹⁷ A copy of the CCPC's correspondence ('**CCPC Response**') is set out at Annex 12 of this Decision. The CCPC indicated that it is satisfied that there are no compelling grounds for altering the market definitions proposed by ComReg, and that the CCPC is satisfied that there are no compelling grounds to disagree with ComReg's conclusion that Eircom should be designated as having SMP in the LB TI WHQA Market and the Zone B MI WHQA Markets.

¹⁸ A copy of the European Commission's Response is set out in Annex 13 of this Decision ('**EC Response**').

Retail Market Assessment

- 1.43 In Sections 3 and 4 of this Decision, having considered Respondents' Submissions, ComReg sets out its positions on the main retail trends and developments and assesses the retail market insofar as it informs ComReg's subsequent assessment of the Relevant WHQA Markets. ComReg is not obliged to conclude on a precise definition of the retail LL markets.
- 1.44 In this context, ComReg's position is that the retail LL markets are as follows (from a product perspective, these market definitions largely mirror the Relevant WHQA Markets identified in Section 5 of this 2018 Further Consultation given that wholesale demand is typically derived from retail demand):
- (a) a LB TI Retail Market consisting of analogue, digital and TDM retail LLs with bandwidths $\leq 2\text{Mb/s}$;
 - (b) a HB TI Retail Market consisting of TDM retail LLs with bandwidths $> 2\text{Mb/s}$; and
 - (c) a MI Retail Market consisting of all Ethernet, xWDM (and other modern interfaces) retail LLs of any bandwidth.
- 1.45 The above, together referred to as the **Relevant Retail LL Markets**, include retail LLs provided over copper and fibre transmission media. They do not include retail LLs provided over wireless infrastructure, with this being a change to ComReg's preliminary view as set out in the 2016 Consultation but consistent with the further view in the 2018 Further Consultation.
- 1.46 ComReg considers that the Relevant Retail LL Markets are likely to be national in scope. In the context of the definition of the MI WHQA Markets discussed in Section 5 of this Decision, ComReg has set out its position that separate subnational geographic markets exist. However, ComReg does not consider that these differences are likely to be replicated in the Retail LL MI Market. This includes reasons such as the nature of retail demand being such that multi-site retail LL customers, who have multiple premises in geographically dispersed locations, tend to require a single vendor to provide all their connectivity needs across all their locations. However, in order for a National retail market to function competitively, there is a need to define granular sub-National geographic wholesale markets.
- 1.47 Asymmetric business broadband is not considered a substitute for a retail LL due to the likely lack of effective supply and demand side substitutability between these products.
- 1.48 Passive infrastructure, such as dark fibre, is also not considered to be an effective substitute for a retail LL due to the investment and expertise needed to provide retail LL using such passive infrastructure.

- 1.49 Furthermore, in contrast to the preliminary view set out in the 2016 Consultation, MI WHQA LLs provided over P2P wireless (microwave radio) links are not now considered to be part of the Retail MI LL Markets. This change is due, amongst other things, to the analysis of information gathered from stakeholders (for both the 2018 Further Consultation and this Decision) which suggests that P2P wireless links are not likely to be a sufficiently effective substitute for retail MI LLs provided over wired infrastructure. As such, they are not considered to be part of the same market.
- 1.50 The rationale and analysis to support the above definitions of the Relevant Retail LL Markets is discussed throughout Section 4 of this Decision.

1.3 WHQA Market Definitions and SMP Assessments

Definition of the WHQA Markets

- 1.51 In Section 5 of this Decision, ComReg considers the definition of the Relevant WHQA Market(s) from a product and geographic perspective. This wholesale analysis is also informed by ComReg's assessment of the retail trends and the retail market in Sections 3 and 4 of this Decision and related Sections in the previous consultations.
- 1.52 ComReg has defined six separate WHQA Markets having regard to an assessment of demand-side and supply-side conditions, as well as the effectiveness of indirect constraints emanating from the Relevant Retail LL Markets. These markets (together referred to as the '**Relevant WHQA Markets**') are summarised below.
- (a) a national **Low Bandwidth TI WHQA Market** consisting of wired analogue, digital and TDM wholesale LLs with bandwidths $\leq 2\text{Mb/s}$;
 - (b) a national **High Bandwidth TI WHQA Market** consisting of wired TDM wholesale LLs with bandwidths $> 2\text{Mb/s}$; and
 - (c) four separate geographically differentiated '**MI WHQA Markets**' consisting of all wired EFM, Ethernet, xWDM (and other modern interfaces) LLs of any bandwidth, in particular:
 - (i) an Area 1 MI WHQA Market consisting of all wired EFM, Ethernet, xWDM (and other modern interfaces) LLs of any bandwidth, with this market corresponding to an identified specific set of 1,582 WPZs which cover approximately 58.4% (4,950) of wired MI WHQA connected premises in the State;

- (ii) an Area 2 MI WHQA Market consisting of all wired EFM, Ethernet, xWDM (and other modern interfaces) LLs of any bandwidth, with this market corresponding to an identified specific set of 1,998 WPZs which cover approximately 41.6% (3,523) of wired MI WHQA connected premises in the State;
- (iii) an Area 3 MI WHQA Market consisting of all wired EFM, Ethernet, xWDM (and other modern interfaces) LLs of any bandwidth, with this market corresponding to an identified specific set of 1,153 WPZs,¹⁹ and
- (iv) an Area 4 MI WHQA Market consisting of all wired EFM, Ethernet, xWDM (and other modern interfaces) LLs of any bandwidth, with this market corresponding to an identified specific set of 2,486 WPZs.²⁰

- 1.53 The above Relevant WHQA Markets, incorporate wholesale LLs provided over copper and fibre transmission media. They do not include Wholesale LLs provided over wireless infrastructure.
- 1.54 The LB TI WHQA Market and HB TI WHQA Market are consistent with what was proposed in the 2018 Further Consultation.
- 1.55 The MI WHQA Markets, which also exclude wireless WHQA LLs, are however now different from a geographic perspective, with this being largely as a consequence of ComReg's consideration of Respondents' views and additional analysis enabled by better quality and updated information being available from SPs in relation to connected premises locations. It is also reflective of ComReg updating some of the parameters employed in assessing the geographic scope of the MI WHQA Markets, including moving to WPZs as the geographic unit of choice for the geographic market assessment, as well as updating other aspects as noted in paragraph 1.32 above.

¹⁹ There are no connected premises in the Area 3 MI WHQA Market. This market is comprised of the relevant geographic areas that have at least 2 alternative networks (other than Eircom) present or are completely surrounded by Zone A geographic areas.

²⁰ There are no connected premises in the Area 4 MI WHQA Market. There are, however, less than 2 alternative networks (other than Eircom) present in the relevant geographic areas that comprise this market.

The Trunk-Terminating Boundary

- 1.56 The 2008 Decision defined the wholesale trunk market as consisting of 16 (later updated to 20) Urban Centres which were connected by large circuits with a bandwidth delineation of 155Mb/s. This was then based on now legacy TI infrastructure as the Ethernet market volumes (wholesale and retail) were trivial in 2008.
- 1.57 The now updated boundary has required a detailed inspection of the 192 Eircom NGN Exchanges at which interconnection is feasible (**'Aggregation Nodes'**) compared to the mapping information provided by all relevant alternative SPs and upstream infrastructure providers. It has been found that 93 of these nodes have 2 or more alternate infrastructures present (other than Eircom) within sufficient proximity to allow at least 2 alternate SPs interconnect. ComReg has designated these nodes as "Trunk Nodes" and delineate the MI WHQA trunk-terminating boundary.
- 1.58 The rationale and analysis to support the above definitions of the Relevant WHQA Markets is discussed throughout Section 5 of this Decision.

SMP Assessments in the Relevant WHQA Markets

- 1.59 In Section 6 of this Decision, ComReg assesses whether, absent regulation, any Undertaking has SMP in any of the Relevant WHQA Markets, that is, the ability to act, to an appreciable extent, independently of its competitors, customers and consumers.
- 1.60 In this respect, ComReg has examined a number of factors relating to existing competition, potential competition and countervailing buyer power (**'CBP'**). ComReg's position is that:
- (a) Eircom is likely to have SMP in the **Low Bandwidth TI WHQA Market**;
 - (b) No SP is likely to have SMP in the **High Bandwidth TI WHQA Market**;
 - (c) No Undertaking is likely to have SMP in the **Area 1 MI WHQA Market**;
 - (d) Eircom is likely to have SMP in the **Area 2 MI WHQA Market**;
 - (e) No Undertaking is likely to have SMP in the **Area 3 MI WHQA Market**; and
 - (f) Eircom is likely to have SMP in the **Area 4 MI WHQA Market**.

Low Bandwidth TI WHQA Market SMP Assessment

- 1.61 LB TI WHQA demand is in slow decline with the number of circuits declining from approximately 9,300 in 2013 to approximately 3,600 in 2018. The demand for these circuits is likely to gradually decline further over the lifetime of this market review as retail (and consequently) wholesale demand is ultimately migrated to the MI LLs.

- 1.62 ComReg has set out its position that Eircom is likely to have SMP in the LB TI WHQA Market. This is due to factors such as its high market share, its control of infrastructure not easily duplicated, the lack of potential competition and the absence of effective CBP.
- 1.63 At the end of 2018, Eircom had a high and stable market share between 80% and 90%. There is only one other main SP active in the LB TI WHQA Market, namely BT, with a market share of between 10% and 20%.
- 1.64 Furthermore, as these TI LLs are of a legacy technology nature, it is unlikely that any SP will invest in providing such services in the future, with negligible anticipated new demand.
- 1.65 Eircom's ubiquitous copper network which it uses to provide these services is unlikely to be replicated by other SPs. As such, potential competition is not likely to contribute towards effective competition for the duration of this review.

High Bandwidth TI WHQA Market SMP Assessment

- 1.66 In 2018 there were less than 100 HB TI WHQA LL circuits in-situ, having fallen from under 290 in 2013 and with minimal new demand for such LLs.
- 1.67 Given the low and declining volumes in this market, market shares in and of themselves are not a reliable indicator of competition. In the context of a small and declining market, ComReg has set out its position that no SP has SMP and that continued regulation of this market is not proportionate or justified.

Area 1 MI WHQA Market and Area 3 MI WHQA Market SMP Assessments

- 1.68 As a result of the detailed granular geographic assessment of the MI WHQA Markets, ComReg has delineated four distinct geographic markets. ComReg has carried out an SMP assessment for each market individually.
- 1.69 In relation to the Area 1 MI WHQA Market and Area 3 MI WHQA Market, ComReg notes that given the number of competing SPs, the scale and scope of infrastructure based competition suggests that entry barriers are lower and appear to have been sufficiently overcome in this market. Considering this, alongside the market shares of the competing SPs (as well as other factors), ComReg considers that it is unlikely that any SP has SMP in these markets.

Area 2 MI WHQA Market and Area 4 MI WHQA Market SMP Assessments

- 1.70 The Area 2 MI WHQA Market and Area 4 MI WHQA Market are not considered to be effectively competitive. This is due to the fact that there is relatively little infrastructure based competition. Entry barriers are high and are expected to remain so for the duration of this market review. Furthermore, Eircom has a high market share that is not expected to decrease significantly over the period of this review. Consequently, Eircom is considered to have SMP in these markets.

Competition Problems and Remedies

Competition problems in the LB TI WHQA Market and the Zone B MI WHQA Market

- 1.71 In Sections 7 and 9 of this Decision ComReg identifies potential competition problems that could arise, absent regulation, from Eircom's ability and incentive to exercise market power in the LB TI WHQA Market and in the Area 2 MI WHQA and Area 4 MI WHQA Market. In the absence of regulation in these markets, ComReg considers that Eircom would have the ability and incentive to engage in a range of anti-competitive behaviours including: excessive pricing (including with respect to charges for SPs); vertical leveraging behaviours into downstream markets; and horizontal leveraging behaviours with a view to negatively impacting the position of its competitors in adjacent markets within which Eircom also competes.

Remedies in the LB TI WHQA Market

- 1.72 In order to address these competition problems, in Section 8 of this Decision ComReg has imposed upon Eircom a range of access, non-discrimination, transparency, price control/cost accounting and accounting separation obligations in the LB TI WHQA Market. Such obligations largely mirror the obligations already in place and are consistent with what was proposed in the 2016 Consultation and 2018 Further Consultation.
- 1.73 However, ComReg has decided to impose remedies for TDM based wholesale Partial Private Circuits ('PPCs') only. This is because in relation to the two other LB TI WHQA LL products (analogue and end-to-end WLLs):
- (a) retail digital LLs can be replicated by an Access Seeker having access to a PPC; and
 - (b) at the end of 2018 there were less than 10 analogue wholesale LLs in-situ from Eircom, the most recent of these installed in 2002.

- 1.74 As such, ComReg's position is that it is reasonable and proportionate to impose the suite of obligations identified in Section 8 and to impose them only in respect of TDM based WHQA PPCs.
- 1.75 Furthermore, ComReg's position is that pricing for the PPC products in the regulated services in the LB TI WHQA market should remain at their current level.
- 1.76 The detail of these obligations, which are ultimately designed to ensure effective competition in retail and adjacent wholesale markets, is set out in Section 8 of this Decision.

Remedies in the Area 2 MI WHQA Market and Area 4 MI WHQA Market

- 1.77 In order to address the competition problems identified in Section 9 of this Decision with respect to the Area 2 MI WHQA Market and Area 4 MI WHQA Market (together the Zone B MI WHQA Markets), in Section 10 of this Decision ComReg imposes upon Eircom a range of access, non-discrimination, transparency, price control/cost accounting and accounting separation obligations in the Zone B MI WHQA Markets. No obligations were proposed in the 2016 Consultation given ComReg's then preliminary view that no SP was likely to have SMP in a national MI WHQA Markets. However the obligations subsequently proposed in the 2018 Further Consultation, and now in this Decision, largely mirror the obligations already in place, save for some changes which either remove some existing obligations (such as those requiring access to end-to-end WHQA products and a margin squeeze) or to bring historically imposed obligations in line with modern regulatory standards and/or improve their effectiveness. These relate mainly to enhanced interconnection obligations, SLAs, transparency on product development and a requirement for Eircom to provide a Statement of Compliance in relation to its obligations.
- 1.78 Furthermore, ComReg continues to impose cost-orientation price control obligations on regulated products and ancillary services. However, ComReg has removed the previously imposed Margin-Squeeze Test detailed in the 2012 Pricing Decision which currently applies and other obligations associated with the Margin-Squeeze Test.
- 1.79 The detail of these proposed obligations, which are ultimately designed to ensure effective competition in retail and adjacent wholesale markets, are set out in Section 10.

1.4 Next Steps

- 1.80 To facilitate a smooth transitional period to deregulation, in Section 11 of this Decision, ComReg has decided that in most cases either a 6 or 12 month sunset period will apply for the withdrawal of existing obligations.

- 1.81 ComReg has decided that a six month sunset period is appropriate for the withdrawal of most existing remedies²¹ in the HB TI WHQA Market. During this period, Eircom is not required to provide access to new orders for HB TI WHQA LLs, although it is free to do so on a commercial basis.
- 1.82 Similarly, with respect to the specific remedies being withdrawn in the LB TI WHQA Market, a six month sunset period also applies²².
- 1.83 A 12 month sunset period applies for the withdrawal of obligations in the Area 1 MI WHQA Market and Area 3 MI WHQA Market. During the first three months of this period Eircom will nonetheless be required to continue to provide access to MI WHQA LLs, given the need to protect currently ongoing tendering processes.
- 1.84 ComReg intends to continue to closely monitor developments in the WHQA Markets and will continue to collect information, at an appropriate level of granularity, from SPs in order to do this.

²¹ Existing obligations not to margin squeeze are withdrawn with immediate effect.

²² *Ibid.*

2 Background

2.1 Overview

- 2.1 This Response to Further Consultation and Decision (hereafter the 'Decision') presents the final views of the Commission for Communications Regulation (hereafter '**ComReg**') on its market review of the market for Wholesale High Quality Access ('**WHQA**').
- 2.2 WHQA is a wholesale service that is used by Service Providers ('**SP(s)**') in the supply of retail data connectivity services to businesses, as well as being used by SPs as network inputs such as backhaul.
- 2.3 The objective of this Decision is to examine the extent of competition within the above WHQA markets. Where ComReg determines on the basis of its analysis, and of the evidence available to it, that any such market is not effectively competitive due to one or more SP(s) having Significant Market Power ('**SMP**'), ComReg must impose such regulatory obligations (or remedies) as it considers appropriate on the SP(s) designated as holding SMP. Such obligations are imposed in order to address identified competition problems which could arise in the WHQA markets or related markets, absent regulation, ultimately to the detriment of consumers. Similarly, if ComReg forms the view that any of the WHQA markets are effectively competitive, then it follows that regulatory intervention is not warranted on that market and the imposition of regulatory obligations is not justified (or no longer justified in cases where they have been imposed to date).
- 2.4 This introductory Section to the Decision describes the following:
- (a) What WHQA is and what it is used for at the retail and wholesale level (discussed in Section 2.2 below);
 - (b) The legal basis and the regulatory framework under which this market review and Decision has been undertaken (discussed in Section 2.3 below);
 - (c) An overview of the previous reviews of the WHQA Market and the reasoning underpinning the current market review (discussed in Section 2.4 below);
 - (d) The background to the consultations and responses from stakeholders that has led to this Decision (discussed in Section 2.5 below);
 - (e) The information sources relied upon by ComReg in conducting its analysis (discussed in Section 2.6 below);
 - (f) Details on ComReg's liaisons with other bodies as is required in conducting this market review (discussed in Section 2.7 below); and

- (g) An overview of the structure of the Decision (discussed in Section 2.8 below).

2.2 What is WHQA?

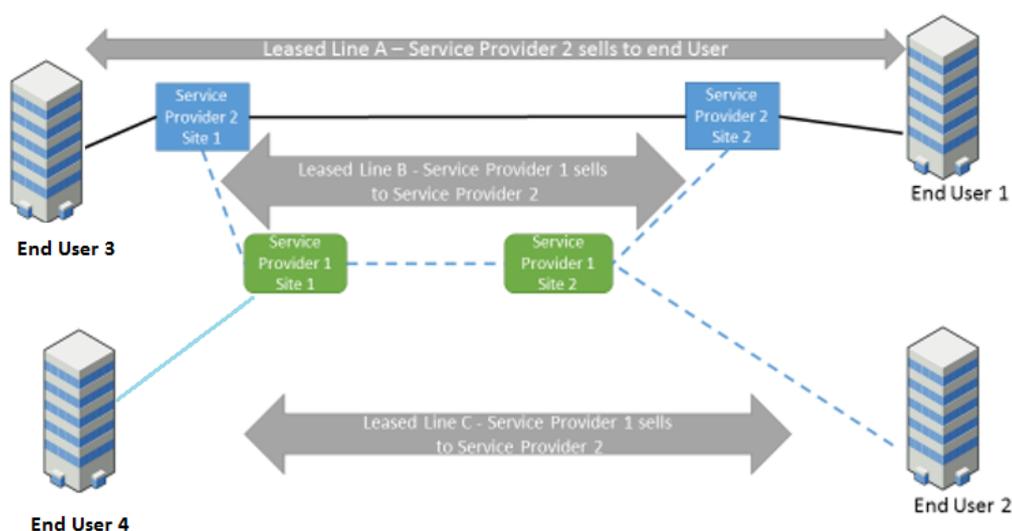
- 2.5 In general, WHQA is a wholesale service that involves the supply of dedicated transmission capacity between fixed locations and is commonly referred to as leased line(s) ('**LL(s)**') services.²³ As noted in the Explanatory Note to the 2014 Recommendation²⁴, the distinguishing product characteristics of LLs are their ability to provide dedicated, uncontended connections, and symmetrical upload and download speeds. Currently, there are a number of SPs supplying wholesale LL services in Ireland, including Eircom, BT and enet.
- 2.6 The purchase of wholesale LL services enables SPs to ultimately offer retail LL services that can be used to support a variety of applications such as voice (fixed and/or mobile), video and data communications. Typically, retail LL services are demanded by organisations in both private and public sectors, in order to support a wide variety of ICT applications, such as (but not limited to) access to the internet, private voice and data networks, cloud based services, backup and disaster recovery, remote monitoring and telemetry applications. Retail LL services are also used to build Virtual Private Networks ('**VPNs**') that allow organisations to link business sites together, including data centres, so that offices can exchange data and access corporate applications. This also allows retail organisations to offer a multiplicity of services to business and retail consumers via the internet or data networks.
- 2.7 Wholesale LL services allow SPs to provide retail LL (and associated) services to customers that could not otherwise be capable of being served through the use of the SP's own network. For example, a SP may wish to provide retail LL services to a customer's premises, but may not have a direct access connection to that customer's premises over which LL services can be provided. Such a SP can then, at the wholesale level, purchase wholesale LL services from another SP which it, in turn, uses in providing its downstream retail LL services.

²³ Wholesale High Quality Access ('**WHQA**') and Leased Lines ('**LLs**') are referred to interchangeably throughout this Decision.

²⁴ Section 4.2.2.3; EU Explanatory Note accompanying the Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation, dated 9.10.2014 (the '[Explanatory Note to the 2014 Recommendation](#)').

- 2.8 These services also allow a SP to establish a new Point of Presence ('POP') in an area using third party LLs to connect this POP to its closest pre-existing nodes or network. It may subsequently build out its own network to directly connect this POP when it has established sufficient concentrations of customers in this area to commercially justify this network expansion.
- 2.9 SPs are also purchasing wholesale LL services in order to build their own networks as well as to supply fixed or mobile backhaul services. For example, wholesale LL connections are used by Mobile Network Operators ('MNO(s)') to convey traffic from a dispersed set of radio access nodes/base stations to a centralised location where calls and data can be routed over core networks to their eventual destination.
- 2.10 The relationship between wholesale LL services (and regulation) and the manner in which they are used in supplying retail LL services is illustrated in the stylised examples set out in Figure 1 below.²⁵

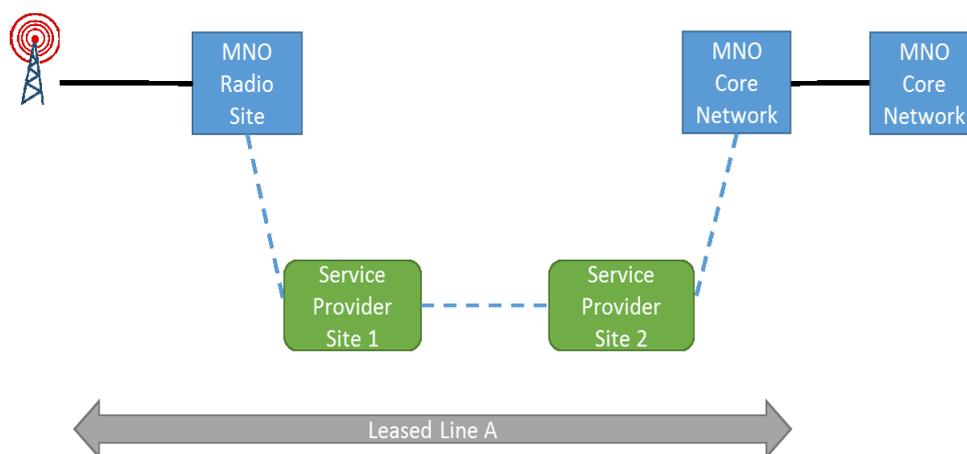
Figure 1: Typical use of WHQA Services using Retail Leased Lines



²⁵ These examples are for illustration purposes only and do not detail all LL configurations.

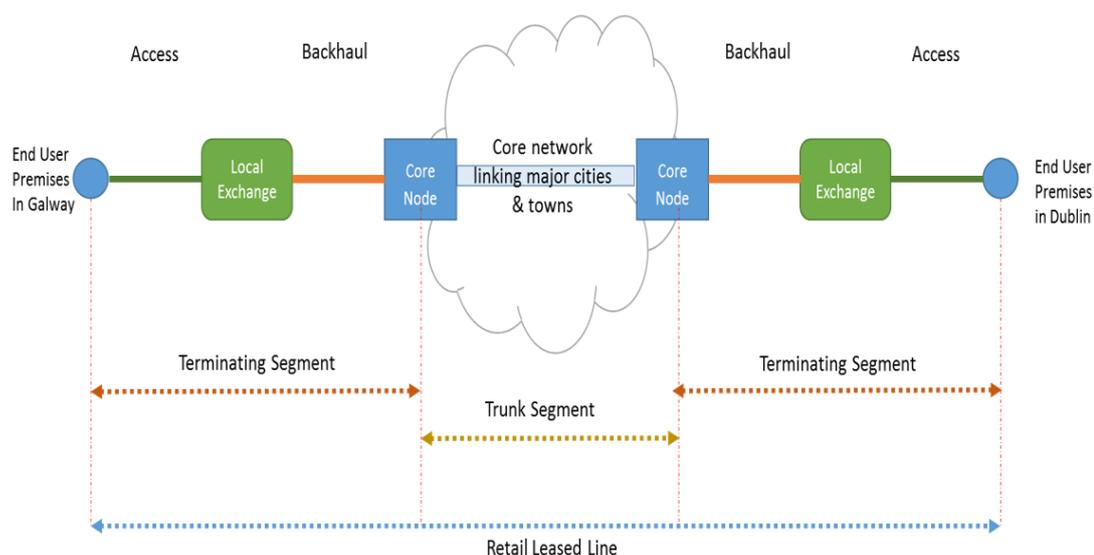
- 2.11 In Figure 1 above, Leased Line A illustrates various (but not exhaustive) uses of upstream WHQA inputs in the provision of retail LL services. For LL A, SP 2 provides a retail LL connecting End-Users 1 and 3. It achieves this using its own local access network from each of its nodes at either end (denoted by Site 1 and Site 2 above in the case of SP2). Crucially, it uses a wholesale LL (Leased Line B) purchased from SP 1 to connect between both of its nodes. Another scenario is that of pure resale, LL C. This is where SP 1 installs a line entirely on its own network connecting End-Users 2 and 4, on behalf of SP 2. SP 2 purchases this LL in its entirety from SP 1 i.e. it does not connect to its own network.

Figure 2: Typical use of WHQA services by MNOs



- 2.12 In Figure 2 above, the mobile network operator ('**MNO**') purchases wholesale LLs from SP 1 in order to convey traffic from its local radio site to its core network.
- 2.13 In this Decision, ComReg makes a distinction between different components of the LL connections. The distinction is between the trunk and terminating LL segments as shown in the stylised Figure 3 below:

Figure 3: Wholesale LL network segments



2.14 There are two broad types of wholesale LL services:

- (a) **End-to-end services:** these link two End-User sites, where either end could be a business consumer End-User or SP network site. These are comprised of local access connections either directly connected at the same local serving node or Exchanges or two geographically separated local ends connected across the core network of a SP. These can also consist solely of core capacity in the instance where both ends are network nodes connected with high bandwidth services. Thus, an end-to-end LL can range in scale from an analogue line connecting two business premises to a multiple 100 Gb/s service connecting data centres or network nodes.

(b) **Interconnection based or Partial Private Circuit²⁶ ('PPC') type Terminating segments of Wholesale LL:** A detailed explanation of PPCs was set out in Section 5 of the 2016 Consultation²⁷. These segments most commonly link an End-User's premises to the network node of the SP purchasing the terminating segment, thereby enabling the purchasing SP to assemble an end-to-end LL service using a combination of wholesale LL inputs and its own network. Terminating segments can also be used to link together network nodes in the purchasing SP's network. Terminating segments consist of access and any (necessary) backhaul segments (and associated facilities) as discussed below:

2.15 SPs purchasing wholesale LL services typically pay a once-off connection/installation fee which typically depends on the location and length of the connection from the End-User location to serving network node of the purchasing SP. It may also depend on the amount of any civil engineering work required to achieve connectivity. Furthermore, SPs pay recurring wholesale charges which depend on a number of factors including the connection bandwidth, the class of service or priority queuing of the data carried on the LL and, in some instances, the location of the purchased connection.

²⁶ PPC Partial Private Circuit is an interconnection based service where the Access Seeker provides a portion of the LL infrastructure. Typically, the wholesale service provider provides a connection to a single customer premises (commonly referred to as a "half-circuit") while the other "end" of the circuit for connecting to the customer's other premises or service, will be provided on the Access Seeker's network or achieved through some other means.

²⁷ See paragraphs 5.27 to 5.28 of the 2016 Consultation.

2.3 Legal basis and regulatory framework

- 2.16 This market review is being undertaken by ComReg in accordance with the obligation under the **Framework Directive**²⁸ (transposed into Irish law as the **Framework Regulations**²⁹) that National Regulatory Authorities ('NRAs') should analyse and define relevant market(s) taking the utmost account of the 2014 Recommendation³⁰ (including the Explanatory Note to the 2014 Recommendation)³¹ and the SMP Guidelines³².
- 2.17 Regulation 26 of the Framework Regulations requires that ComReg, taking the utmost account of the 2014 Recommendation and of the SMP Guidelines, defines relevant markets appropriate to national circumstances, in accordance with the principles of competition law.
- 2.18 The European Commission ('EC') refers in the 2014 Recommendation to the WHQA market as follows:
- "Wholesale high-quality access provided at a fixed location"*³³
- 2.19 The Explanatory Note to the 2014 Recommendation provides further information about the nature of WHQA market and in this respect notes that:

²⁸ Articles 15 and 16 of Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, as amended by Directive 2009/140/EC (the '**Framework Directive**').

²⁹ European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011) (the '**Framework Regulations**'). The Framework Regulations transpose the Framework Directive.

³⁰ See footnote 1.

³¹ See footnote 24 above.

³² European Commission Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services, C(2018) 2374 {SWD(2018) 124} ('**SMP Guidelines**').

³³ Market 4 in the annex to the 2014 Recommendation.

“... a wholesale market for high-quality access includes a wider range of access products necessary to fulfil the needs of business services providers (and ultimately large retail business customers) and which displays the service characteristics..... such as: (i) guaranteed availability and high quality of service in all circumstances including SLAs, 24/7 customer support, short repair times and redundancy, typically found in a services environment geared to the needs of business customers; (ii) high-quality network management, including of backhaul, resulting in upload speeds appropriate for business use and very low contention; (iii) the possibility to access the network at points which have been defined according to the geographic density and distribution of business rather than mass-market users; (iv) the possibility to offer separate Ethernet continuity (e.g. through an additional header allowing for several layers of virtual LANs).”³⁴.

- 2.20 It should also be noted that prior to the adoption of the 2014 Recommendation WHQA market was broadly identified in the 2007 Recommendation³⁵ as the market for wholesale terminating segments of leased lines (**‘2007 Wholesale Leased Lines Recommended Market’**)³⁶. As noted in paragraph 2.18, the 2007 Wholesale Leased Lines Recommended Market has been identified by ComReg as being susceptible to *ex ante* regulation and was thus regulated by ComReg pursuant to the 2008 Decision. Given the 2007 Recommendation has been replaced by the 2014 Recommendation, it is the latter which is now applicable for this current market review.

³⁴ See page 50 of Explanatory Note to the 2014 Recommendation.

³⁵ European Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services OJ L 344 (the [‘2007 Recommendation’](#)).

³⁶ The WHQA market broadly corresponds to the 2007 Wholesale Leased Lines Recommended Market. However, the scope of WHQA market was broadened to include contended and asymmetric wholesale access products offered by a network owner to a wholesale access seeker over copper or hybrid infrastructures if these products display certain advanced quality characteristics at the wholesale level as described in Section 2.2 above.

- 2.21 Having regard to Regulation 25 of the Framework Regulations, where ComReg determines, as a result of a market analysis carried out by it in accordance with Regulation 27 of the Framework Regulations, that a given market identified in accordance with Regulation 26 of the Framework Regulations is not effectively competitive, ComReg is obliged under Regulation 27(4) of the Framework Regulations to designate an Undertaking(s) with SMP in that market and impose on such Undertaking(s) such specific obligations as it considers appropriate, or maintain or amend such obligations where they already exist.
- 2.22 In line with the “Modified Greenfield Approach” (**MGA**) set out in the Explanatory Note to the 2014 Recommendation³⁷, ComReg’s assessment starts from the assumption that SMP regulation is not present in the market(s) under consideration, i.e. no *ex ante* regulation in the specific WHQA market under consideration. However, regulation present in other related markets³⁸ or through the general regulatory framework is considered. This approach is used in order to avoid drawing conclusions regarding the competitive structure of a particular market which may be influenced by, or indeed premised on, existing regulation on that market. Considering how a market may function absent regulation, helps to ensure that SMP based regulation is only applied (or withdrawn) in those circumstances where it is truly justified and proportionate.
- 2.23 Where an operator is ultimately designated as having SMP in a market, ComReg is obliged, under Regulation 8(1) of the **Access Regulations**³⁹, to impose on such an operator (or maintain where they already exist) such of the obligations set out in Regulations 9 to 13 of the Access Regulations as it considers appropriate. Obligations imposed must:
- (a) be based on the nature of the problem identified;

³⁷ See page 8 of Explanatory Note to the 2014 Recommendation.

³⁸ For example, regulation for the market - Wholesale Central Access for mass-market products provided at a fixed location (**WLA**).

³⁹ European Communities (Electronic Communications Networks and Services) (Access) Regulations 2011 (S.I. No. 334 of 2011) (the '**Access Regulations**'). The SMP Guidelines also state at paragraph 17 that “NRAs must impose at least one regulatory obligation on an Undertaking that has been designated as having SMP”.

- (b) be proportionate and justified in the light of the objectives laid down in Section 12 of the Communications Regulation Act 2002 (as amended)⁴⁰, and Regulation 16 of the Framework Regulations; and
- (c) only be imposed following consultation in accordance with Regulations 12 and 13 of the Framework Regulations.

2.24 Section 12(1)(a) of the Act sets out ComReg's objectives⁴¹ in exercising its functions in relation to the provision of electronic communications networks, electronic communications services and associated facilities, namely:

- (a) to promote competition;
- (b) to contribute to the development of the internal market; and
- (c) to promote the interests of users within the European Union.

2.25 ComReg has conducted a public consultation⁴² in accordance with Regulation 12 of the Framework Regulations.

Apart from conducting a public consultation in accordance with Regulation 12 of the Framework Regulations, ComReg is also obliged to make its draft measures accessible to the EC, BEREC⁴³ and the NRAs in other Member States pursuant to Regulation 13(3) of the Framework Regulations. In accordance with Regulation 27(1) of the Framework Regulations ComReg must also consult with the Competition and Consumer Protection Commission ('**CCPC**') on its preliminary views on the WHQA Markets. The results of these consultations is described in Section 2.7 below.

⁴⁰ Communications Regulation Act 2002 (No. 20 of 2002), as amended (the "**Act**").

⁴¹ Article 8 of the Framework Directive sets out similar objectives for NRAs and notes that in pursuing these policy objectives NRAs shall apply objective, transparent, non-discriminatory and proportionate regulatory principles.

⁴² See "Market Review - Wholesale High Quality Access at a Fixed Location, Consultation, [ComReg Document 16/69](#), 18 August 2016" (the '**2016 Consultation**') and "Market Review – Wholesale High Quality Access at a Fixed Location, Response to Consultation, Further Consultation and Draft Decision, [ComReg Document 18/08](#), 22 February 2018, (the '**2018 Further Consultation**').

⁴³ Body of European Regulators for Electronic Communications ('**BEREC**') as established pursuant to Regulation (EU) 2018/1971 of the European Parliament and of the Council of 11 December 2018 establishing the Body of European Regulators for Electronic Communications (BEREC) and the Agency for Support for BEREC (BEREC Office), amending Regulation (EU) 2015/2120 and repealing Regulation (EC) No 1211/2009.

- 2.26 Overall, in preparing this Decision, ComReg has taken account of its functions and objectives under the Communications Regulation Acts 2002 (as amended), in addition to requirements under the Framework Regulations and the Access Regulations.
- 2.27 The analysis undertaken in this Decision also takes the utmost account of the following documents (along with other documents as noted elsewhere throughout this Decision):
- (a) the 2014 Recommendation and the Explanatory Note to the 2014 Recommendation on relevant product and service markets susceptible to *ex ante* regulation within the electronic communications sector;
 - (b) the SMP Guidelines on market analysis and the assessment of significant market power; and
 - (c) the 2005 Accounting Separation and Cost Accounting Recommendation⁴⁴.
- 2.28 ComReg also takes account of:
- (a) the Notice on Market Definition⁴⁵ for the purposes of community competition law;
 - (b) any relevant common positions adopted by BEREC⁴⁶; and
 - (c) any relevant EC comments made, pursuant to Article 7 and 7a of the Framework Directive, with respect to NRAs' market analyses.
- 2.29 ComReg is assessing the WHQA market(s) in the context of the market analysis framework and documents explained above, including having regard to ComReg's consideration of Respondents' Submissions to the 2016 Consultation and Respondents' Submissions to the 2018 Further Consultation.

⁴⁴ European Commission Recommendation of 19 September 2005 on accounting separation and cost accounting systems under the regulatory framework for electronic communications (2005/698/EC) (the '[2005 Accounting Separation and Cost Accounting Recommendation](#)').

⁴⁵ Commission notice on the definition of relevant market for the purposes of Community competition law, (the '[Notice on Market Definition](#)'), Official Journal C 372, 09/12/1997 P. 0005 – 0013.

⁴⁶ See, for example, the BEREC Common Position on geographic aspects of market analysis (definition and remedies) of 5 June 2014, BEREC Document number BoR (14)73, (the '[2014 BEREC Common Position on geographic aspects of market analysis](#)') and Revised BEREC Common Position on best practices in remedies as a consequence of a SMP position in the relevant markets for wholesale leased lines of 26 November 2012, BEREC Document number BoR (12) 126, (the '[2012 BEREC Common position on remedies in wholesale leased lines markets](#)').

2.4 Previous Market Review and Subsequent Developments

- 2.30 The previous review of the WHQA market (then known as market for wholesale terminating segments of leased lines) was completed in 2008 (the '**2008 Decision**')⁴⁷. The 2008 Decision defined the market for wholesale terminating segments of leased lines ('**2008 Leased Lines Wholesale Market**') as follows:
- (a) All products offering fixed permanent point-to-point symmetric termination belong in the same market irrespective of the technology used to deliver the product and/or product bandwidth.
 - (b) The geographic scope of the market for wholesale terminating segments of leased lines was considered to be national.
- 2.31 Having assessed competition in the 2008 Leased Lines Wholesale Market, ComReg designated Eircom as having SMP in it and imposed a range of remedies/obligations upon Eircom which, amongst other things, required it to offer WLLs and PPCs, including handover⁴⁸ to **Access Seekers**⁴⁹ at regulated prices, in order to address the identified competition problems.
- 2.32 The 2008 Decision also examined the retail market for leased lines (in particular the minimum set of retail leased lines),⁵⁰ as well as the market for trunk segments of wholesale leased lines. It found both of these markets to be effectively competitive (in the presence of regulation of wholesale terminating segments of LLs).

⁴⁷ See "[Market Analysis – Leased Lines Market Review, ComReg Document 08/103, Decision D06/08](#)", dated 22 December 2008 ('**2008 Decision**').

⁴⁸ Handover refers to the point of interconnection between the two networks, simply the point at which the circuits are "handed over" from one SP to another.

⁴⁹ Access Seekers as referred to throughout this Decision are those Undertakings or Other Authorised Operators ('**OAOs**') that purchase, or could potentially purchase, WHQA LL services.

⁵⁰ Analogue lines and leased lines up to a bandwidth of 2Mb/s.

- 2.33 The 2008 Decision specified that the competitive wholesale trunk segment⁵¹ of wholesale leased lines consisted of circuits between certain urban centres⁵² of capacity equal to or greater than STM-1 (155Mb/s). It also defined the regulated (uncompetitive) wholesale terminating segment of leased lines to be all of the remaining wholesale market i.e. that which was not specifically described as being part of the trunk segment was deemed to be part of the terminating segment market.

Subsequent Developments

- 2.34 In 2010, following a public consultation⁵³, ComReg added an additional urban centre (Portlaoise) to the list of urban centres constituting the boundary of the wholesale trunk market as set out in the 2008 Decision. This followed a request from Eircom to expand the list to include seven additional centres⁵⁴. Thus, in 2010 regulation was withdrawn from Eircom with respect to wholesale leased lines of STM-1 and greater capacity that connect Portlaoise to any of the other urban centres identified in the 2008 Decision.
- 2.35 In 2013, following a public consultation, ComReg⁵⁵ further expanded the list of urban centres and included Athlone, Charleville, Mallow and Roscommon (following Eircom's request to expand the trunk segment of the 2008 Leased Lines Wholesale Market and include an additional six urban centres)⁵⁶. Thus, in 2013 the scope of 2008 Leased Lines Wholesale Market was further extended (with these additional urban centres not being subject to *ex ante* regulation).
- 2.36 Subsequent to the 2008 Decision, ComReg has also made a number of other decisions related to the remedies/obligations imposed in the 2008 Leased Lines Wholesale Market including:

⁵¹ See Figure 3 above for the description of trunk and terminating segments of WHQA connections.

⁵² See Annex A of the 2008 Decision.

⁵³ See "[Leased Line Markets: Review of Urban Centres, ComReg Document 10/12, Decision D02/10](#)", dated 15 February 2010; (**'The 2010 Urban Centres Decision'**)

⁵⁴ Athlone, Bray, Carlow, Clonmel, Naas, Portlaoise and Swords.

⁵⁵ See "[Leased Line Markets: Further review of Urban Centres, ComReg Document 13/75, Decision D12/13](#)", dated 29 July 2013. (**'The 2013 Urban Centres Decision'**).

⁵⁶ Athlone, Charleville, Mallow, Roscommon and Tullamore.

- (a) the 2009 Ethernet Determination⁵⁷ which explicitly noted that a request for uncontended wholesale Ethernet access falls within the market for wholesale terminating segments of LLs and is subject to the obligations imposed on Eircom by a 2005 Decision⁵⁸. These obligations include (but are not limited to) obligations of access, non-discrimination, and cost orientation.
- (b) the 2011 Access and Transparency Decision⁵⁹ which amended transparency and access obligations⁶⁰; and
- (c) the 2012 Price Control Decision⁶¹ which further specified the price control obligations and in particular, methodologies used to derive regulated prices for Eircom's WLL, PPC and wholesale Ethernet services⁶².

⁵⁷ See "[Determination in the dispute between BT Ireland and Eircom Limited in relation to alleged failure by Eircom to provide Leased Line termination segments based on uncontended Ethernet access, ComReg Document 09/58](#)", dated 14 July 2009 ('**2009 Ethernet Determination**').

⁵⁸ See "[Market Analysis: Retail Leased Lines and Wholesale Terminating and Trunk Segments of Leased Lines \(National\), ComReg Document 05/29, Decision D7/05](#)", dated 30 March 2005 ('**2005 Decision**').

⁵⁹ See "[Amendments to the transparency obligation and the access obligation in the market for wholesale terminating segments of leased lines, ComReg Document 11/22, Decision D02/11](#)", dated 22 March 2011. ('**2011 Access and Transparency Decision**')

⁶⁰ The 2011 Access and Transparency Decision set out that Eircom is no longer required to publish pricing information for WLL circuits of greater than 10Mb/s as it was accepted that the existing custom and practise of providing such pricing on application was sufficient for efficient operation of the market. The decision also obliged Eircom to amend frequency of billing offered by it to Access Seekers from a quarterly to a monthly basis, one month in advance of the provision of services in the 2008 Leased Lines Wholesale Market.

⁶¹ See "[A final decision further specifying the price control obligation in the market for wholesale terminating segments of leased lines, ComReg Document 12/03, Decision D02/12](#)", dated 2 February 2012 ('**2012 Pricing Decision**').

⁶² Amongst other things ComReg specified that it will apply cost orientation to determine maximum PPC charges using bottom-up long-run average incremental costs plus ('**BU-LRAIC plus**') model while for WLLs the maximum charges will be based on the published prices (at the time) as well as a minimum price floor which is set on the basis of the appropriate margins squeeze test ('**MST**') between WLLs and PPCs on a similarly efficient operator ('**SEO**') basis.

2.5 Consultation Process

2016 Consultation

- 2.37 In August 2016 ComReg issued the 2016 Consultation⁶³ that set out its then preliminary views based on an analysis of the WHQA Market(s). The 2016 Consultation was held over the period 18 August 2016 to 14 October 2016.
- 2.38 In the 2016 Consultation, ComReg set out proposals on the definition of WHQA Market(s) and its associated SMP assessment, as well as proposed obligations or remedies (as appropriate) that were to be imposed on any Undertakings identified as having SMP, with a view to addressing potential competition problems to the ultimate benefit of End-Users.
- 2.39 12 responses (**'2016 Submission(s)'**) to the 2016 Consultation were received from a range of industry stakeholders (together referred to as the **'2016 Respondent(s)'**)⁶⁴. A non-confidential version of the 2016 Submissions is publicly available on ComReg's website.⁶⁵

2018 Further Consultation

- 2.40 Having regard to 2016 Submissions, subsequent meetings with industry stakeholders and retail end-users, alongside further data gathered by ComReg, a number of issues were raised that ComReg considered required further detailed consideration. These considerations largely related to matters relevant to the definition of the MI WHQA Markets (both product and geographic market definition dimensions) and, as a consequence, to the assessment of competition in this market.
- 2.41 A subsequent further consultation was therefore conducted in 2018 (**'2018 Further Consultation'**)⁶⁶ over the period 22 February 2018 to 27 April 2018.

⁶³ Market Review - Wholesale High Quality Access at a Fixed Location, Consultation, [ComReg Document 16/69](#), 18 August 2016" (the **'2016 Consultation'**). Further details, including associated appendices, are available [HERE](#).

⁶⁴ See paragraph 1.45 of the 2018 Further Consultation for a list of the 2016 Respondents.

⁶⁵ "Market Review: Wholesale High Quality Access at a Fixed Location, Submissions to Consultation 16/69, [ComReg Document 16/104S](#), 30 November 2016".

⁶⁶ Market Review - Wholesale High Quality Access at a Fixed Location, Response to Consultation, Further Consultation and Draft Decision, [ComReg Document 18/08](#), 22 February 2018" (the **'2018 Further Consultation'**). Further details, including associated appendices, are available [HERE](#).

- 2.42 7 responses to the 2018 Further Consultation (**'2018 Submission(s)'**) were received from a range of industry stakeholders (together referred to as the **'2018 Respondent(s)'**), namely:
- (a) Alternative Operators in the Communications Market (**'ALTO'**);
 - (b) BT Communications Ireland Limited (**'BT'**);
 - (c) Eircom Limited (**'Eircom'**);
 - (d) e-Nasc Éireann Teoranta (**'enet'**);
 - (e) Verizon (**'Verizon'**);
 - (f) Vodafone Ireland Limited (**'Vodafone'**); and
 - (g) Zayo (**'Zayo'**).
- 2.43 A non-confidential version of the Respondents' Submissions is attached at Annex 11 of this Decision.
- 2.44 This Decision primarily refers to the 2018 Further Consultation, although it also cross refers, as appropriate to the 2016 Consultation.

2.6 Information Sources Relied Upon

- 2.45 In conducting its analysis, as noted above, ComReg has drawn on information from a number of sources, including:
- (a) Interviews with end-users of LLs. This included attitudinal interviews with public and private sector organisations purchasing LL services. The summary overview of interviewees' responses was published in Appendix 4 of the 2018 Further Consultation;
 - (b) Information provided by SPs in response to detailed statutory information requests (**'SIR(s)'**) issued by ComReg in which both quantitative and factual information on the retail leased lines market and the WHQA market was sought. This included statutory information requests issued on:
 - (i) 11 February 2014⁶⁷;
 - (ii) 05 December 2014⁶⁸;

⁶⁷ The **'February 2014 SIR(s)'**.

⁶⁸ The **'December 2014 SIR(s)'**.

- (iii) 15 January 2016⁶⁹;
- (iv) 23 September 2016⁷⁰;
- (v) 12 April 2017⁷¹;
- (vi) 8 December 2017⁷²; and
- (vii) 14 March 2019⁷³.

together referred to as the '**Statutory Information Requests**' or '**SIRs**'⁷⁴;

- (c) Information provided to ComReg in subsequent follow-up correspondence and discussions in relation to (b) above;
- (d) The 2014 Market Research. This included attitudinal surveys of business users of retail broadband, retail HQA and other services. ComReg notes that the results of this survey have already been published by ComReg as part of the 2016 Consultation⁷⁵ and were referenced in the 2018 Further Consultation.
- (e) The 2017 Market Research. This is an update to the 2014 Market Research carried out for the WLA/WCA Decision (ComReg 18/94). The research examines access to broadband and leased lines, and seeks to determine the impact different access modes have on Irish businesses.
- (f) Information provided to ComReg by SPs for the purpose of its Quarterly Key Data Report ('**QKDR(s)**') publications;
- (g) Information provided by SPs to ComReg through a non-statutory based qualitative questionnaire⁷⁶ ('**Qualitative Questionnaire(s)**'); and

⁶⁹ The '**January 2016 SIR(s)**'.

⁷⁰ The '**September 2016 SIR(s)**'

⁷¹ The '**April 2017 SIR(s)**'.

⁷² The '**December 2017 SIR(s)**'.

⁷³ The '**March 2019 SIR(s)**'.

⁷⁴ Where ComReg refers to a specific SIR (and the response to it) in this Decision it typically specifies its date. For example, the 'April 2017 SIR'.

⁷⁵ Appendix 2 of the 2016 Consultation.

⁷⁶ Qualitative Questionnaires were issued by ComReg in May 2015. SPs submitted their responses to Qualitative Questionnaires in June 2015.

(h) Other information in the public domain and information sources identified in the 2016 Consultation, 2018 Further Consultation and this Decision.

- 2.46 Consultants TERA⁷⁷ (supported by Geocible⁷⁸) were also engaged to assist ComReg in examining the heterogeneity (or otherwise) of competitive conditions for the provision of MI WHQA services in Ireland. As part of this remit, TERA were required to inspect information obtained via the SIRs⁷⁹, map connectivity and calculate market shares in the MI WHQA Markets in terms of LL customer premises (both retail and wholesale customer premises) connected with MI LLs. TERA's analysis for the purpose of the 2018 Further Consultation was published in Annex 1 of that document ('**2018 TERA Report**')⁸⁰. TERA has provided an updated report which takes account of data up to the end of 2018 and which is published in Annex 4 of this Decision ('**2019 TERA Report**').
- 2.47 In the 2016 Consultation consultants OXERA were also engaged to assist ComReg with *inter alia* market definition and with the inspection of SP data for the calculation of market shares, both national and geographic. OXERA produced a report ('**2016 OXERA Report**') which was set out in Annex 1 of the 2016 Consultation. OXERA have updated aspects of their analysis used to assess the definition of WHQA markets, with this set out in Annex 5 of this Decision ('**Updated OXERA Report**').
- 2.48 ComReg refers to the outputs of these data sources, and others as may be identified, throughout the remainder of this Decision.

2.7 Liaison with Other Bodies

- 2.49 In accordance with Regulation 27(1) of the Framework Regulations, ComReg has consulted with the CCPC on the Relevant WHQA Markets set out in this Decision. The CCPC is in agreement with ComReg's analysis⁸¹. A copy of correspondence from the CCPC (the '**CCPC Response**') is set out at Annex 12.

⁷⁷ See <http://www.teraconsultants.fr/en/>.

⁷⁸ See <https://www.geocible.com/>.

⁷⁹ In particular, TERA examined the information on the location of alternative wired networks with respect to SAs and performed a mapping exercise by estimating the proximity of these networks to LL customer premises and, separately, to premises of Multi-site customers of retail LLs. Details on the TERA analysis are referred throughout relevant Sections of the 2018 Further Consultation.

⁸⁰ See Appendix 1 of the 2018 Further Consultation.

⁸¹ The CCPC indicated that it is satisfied that there are no compelling grounds for altering the market definitions proposed by ComReg, and that the CCPC is satisfied that there are no compelling grounds to disagree with ComReg's conclusion that Eircom should be designated as having SMP in the LB TI WHQA Market and the Zone B MI WHQA Markets.

- 2.50 On 5th November 2019 ComReg made its Notified Draft Measures accessible to the EC, BEREC and NRAs in other Member States pursuant to Regulation 13(3) of the Framework Regulations. The EC provided its response to ComReg ('**EC Response**') on 3rd December 2019, a copy of which is set out in Annex 13. As is required, ComReg has taken utmost account of the EC Response throughout this Decision, including as referred to Annex 13 of this Decision.
- 2.51 Furthermore, ComReg received correspondence from both Eircom and BT since the notification of the then draft Decision to the EC. Both Eircom and BT have visibility of this notified draft Decision given the EC makes it publicly available. ComReg responded to Eircom on the 17th January 2020 and to BT on the 8th and 22nd of January 2020. These correspondences (including ComReg's response) are included in this Draft Decision at Annex 14.
- 2.52 This is a non-confidential version of the Decision. Certain information within the Decision has been redacted for reasons of confidentiality, with such redactions indicated by the symbol ☒. Should an individual SP wish to review its own redacted information, it should make a request for such in writing to ComReg and indicate the specific paragraph numbers within which the redacted information being requested is contained. ComReg will consider requests for redacted information and will, subject to the protection of confidential information, respond accordingly.

2.8 Structure of this Decision

- 2.53 The remainder of this Decision is structured as follows:
- (a) Section 3 provides an overview of the main retail market developments and trends;
 - (b) Section 4 assesses the retail market in order to inform ComReg's subsequent assessment of the WHQA markets;
 - (c) Section 5 defines the scope of the WHQA markets from both product and geographic perspectives;
 - (d) Section 6 assesses competition within each of the defined WHQA market(s), alongside the assessment as to whether any Undertaking operating within such markets holds a position of SMP;
 - (e) Section 7 sets out the main competition problems that could, absent regulation, occur within the LB TI WHQA Market and adjacent markets, along with the likely consequential impacts for competition and consumers;

- (f) Section 8 discusses and sets out regulatory obligations that ComReg has imposed on Eircom as the SMP Undertaking in the LB TI WHQA Market, with such obligations being imposed in order to address identified competition problems;
- (g) Section 9 sets out the main competition problems that could, absent regulation, occur within the Zone B MI WHQA Markets and adjacent markets, along with the likely consequential impacts for competition and consumers;
- (h) Section 10 discusses and sets out regulatory obligations that ComReg has imposed on Eircom as the SMP Undertaking in the Zone B MI WHQA Markets, with such obligations being imposed in order to address identified competition problems;
- (i) Section 11 sets out ComReg's approach to the removal of regulatory obligations in the LB TI WHQA Market, HB TI WHQA Market and the Zone A MI WHQA Markets;
- (j) Section 12 sets out the Regulatory Impact Assessment ('**RIA**') on the approaches to regulation in the Relevant WHQA Markets; and
- (k) Section 13 sets out the next steps that will follow the publication of this Decision.

2.54 A number of Annexes to this Decision give additional supporting analysis and, in some cases, outline the approach and findings in more detail, where they have been condensed for reasons of brevity in the main text. Of particular note is Annex 1 where ComReg has considered and assessed in detail the Submissions to the 2018 Further Consultation as well as Annex 8 which contains the Decision Instrument which specifies, in legal form, the decisions arising from this Decision.

3 Retail Market Trends and Developments

3.1 Overview

3.1 In this Section, ComReg outlines the main market developments and trends in the provision of retail LLs since the 2008 Decision. This Section sets the backdrop for the more detailed analysis of the Retail LL markets outlined in Section 4 concerning the Retail Market Assessment.

3.2 The key supply side trends since the 2008 Decision include:

- (a) The retail LL markets in Ireland have a number of competitors and ComReg has collected data from 17 SPs in 2018 (an increase from the 10 SPs in 2008). The overall market concentration has fallen since 2008, whether measured by circuits sold or retail revenues; and
- (b) The growth in infrastructure since 2008 Decision has primarily been in fibre based networks⁸² as opposed to copper based LLs, which has supported the growth in the Ethernet and xWDM segments of the retail LL market.

3.3 The key demand side trends since the 2008 Decision include:

- (a) The trends in the number of retail LL customers and their consumption of retail LLs shows that:
 - (i) Customer numbers have been growing at approximately 8% a year;⁸³
 - (ii) 4 level 1 NACE⁸⁴ codes (C, G, J and K)⁸⁵ dominate in terms of customer numbers and the number of LLs purchased;
 - (iii) At approximately 5%, public sector customers account for a small share of total customer numbers, but account for around a third of the demand for retail LL circuits sold; and

⁸² It should be noted that ComReg has included only wired LLs in its product market definition as discussed in the 2018 Further Consultation in paragraphs 3.118 to 3.115 and reiterated this again in Section 4.4 of this Decision.

⁸³ For the years 2014-2018.

⁸⁴ European Classification of Economic Activities.

⁸⁵ (C) Manufacturing; (G) Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycle; (J) Information and Communication and (K) Financial and Insurance Activities.

- (iv) Multi-site customers, being those retail customers that have LLs going to three or more different addresses, account for under 30% of customers but account for around 80% of the demand for all circuits purchased and account for a similar share in retail LL revenue terms.
- (b) Since the 2008 Decision there has been a noticeable change in the technology used in the provision of retail LLs to retail customers, with a shift from analogue and TDM based LLs to primarily Ethernet LLs.
- (c) Evidence suggests that there has been growth in demand for higher bandwidth LL circuits over time, which likely coincides with the general trend of growth in data consumption over time, and a move to technologies such as Ethernet that more easily facilitate LL bandwidth grow.
- (d) Finally, there has been a move from LLs purchased primarily as connectivity between premises, to a greater association of retail LLs with a wider network solutions or telecoms and service layer package/ bundles.

3.2 Introduction

- 3.4 This Section provides the supporting analysis for the main retail LL market developments and trends outlined above. This follows the structure of the 'Retail Market Trends and Development' Sections as set out in Sections 3 of the 2016 Consultation and updated for any additional data provided in Section 3, 'Retail Market Developments, Trends and Assessment', and Appendix 6 of the subsequent 2018 Further Consultation.
- 3.5 The analysis of the trends originally presented in the 2016 Consultation and the 2018 Further Consultation have been updated to include data for 2017 and 2018⁸⁶, as submitted to ComReg by LL SPs in response to the 8th December 2017 and 14th March 2019 SIRs respectively.
- 3.6 Of the 7 Submissions received to the 2018 Further Consultation, 4 Respondents (BT, Eircom, enet and Vodafone) expressed views on the Retail Market Trends and Developments component of Section 3 of the 2018 Further Consultation. 3 Respondents (ALTO, Verizon and Zayo) did not comment.
- 3.7 In Annex 1, Section A.1.2, paragraphs A1.6 to A1.25, of this Decision, ComReg summarises the main views of these 4 Respondents on Section 3 of the 2018 Further Consultation. This also includes ComReg's assessment of these views.

⁸⁶ 2018 data on Customer trends has not been included in this Section.

- 3.8 Where appropriate, ComReg highlights the themes arising from Respondents' views to the 2018 Further Consultation directly in this Section 4.
- 3.9 This Section also updates the analysis carried out in the 2016 Consultation and the 2018 Further Consultation, combining data collected under SIRs issued to SPs across different years to provide additional opportunities for analysis. This includes identifying a unique list of retail LL customers across SPs and over different years. This Section includes trends in the consumption of single and multi-site retail LL customers not included in the 2016 Consultation, as well as updates to the conclusions on public sector consumption and the take up of wireless retail LLs.
- 3.10 Below ComReg sets out its position, having considered Respondents' views, on the main retail trends and developments insofar as they are relevant to the analysis of the WHQA markets. This Section is set out as follows:
- (a) ComReg summarises its preliminary views as set out in the 2016 Consultation and revisions and updates included in the 2018 Further Consultation (see Section 3.3, paragraphs 3.11 to 3.16 below);
 - (b) The main trends and developments in the supply side of retail LL Services since 2008 (see Section 3.4, paragraphs 3.17 to 3.58 below); and
 - (c) The main trends and developments in the demand side of retail LL Services since 2008 (see Section 3.5, paragraphs 3.59 to 3.113).

3.3 Background - WHQA Consultations

2016 Consultation

- 3.11 Section 3, Retail Market Trends and Developments, of the 2016 Consultation provided an overview of retail market developments since the 2008 Decision. This Section drew on a survey of retail business customers carried out in 2014 ('**2014 Market Research**') as well as SIRs issued to SPs between 2013 and 2015. This Section was broken down into the following topics:
- (a) Providers of retail LL services;
 - (b) Declining use of analogue and TDM based retail LL and increased uptake of Ethernet based retail LL;
 - (c) Demand for LL services from non-commercial (State) sector;
 - (d) Increasing take-up of wireless Ethernet retail LLs;
 - (e) Growth in the take-up of higher bandwidth LLs;
 - (f) Tendency for retail LL to be purchased in a bundle with other services;
 - (g) Increasing availability of fibre infrastructure; and

(h) Fibre Network deployment by SPs.

- 3.12 The key trends and developments highlighted in the 2016 Consultation included a significant shift from TDM and analogue LLs towards more modern interfaces such as Ethernet and xWDM technologies (a significant but declining cohort of End Users who remain on analogue and TDM based LLs was noted). It also noted the growth in demand from the public sector since the 2008 Decision. The growth in the use of wireless P2P radio links to deliver retail LL services was another development. It was observed that retail LLs were being used to support an increased range of ICT services including cloud storage/computing, data, voice and other services; and finally evidence of increased availability of fibre infrastructure, not only from Eircom, but also a number of other SPs, with a large proportion of retail LLs being delivered by SPs on their own networks (rather than via wholesale LLs purchased from other SPs).

2018 Further Consultation

- 3.13 ComReg's preliminary views as set out in the 2018 Further Consultation were informed by the views set out in the 2016 Consultation and the 2016 Respondent's views received.
- 3.14 Section 3, Retail Market Developments, Trends and Assessment, of the 2018 Further Consultation included Respondents' views to the Section 3 of the 2016 Consultation and ComReg's response to the points raised. 5 (ALTO, Eircom, enet, HEAnet and Vodafone) of these Respondents agreed with ComReg's overall assessment as outlined in the 2016 Consultation, while in some cases giving specific comments on certain aspects of the analysis. The other Respondent (BT) did not agree or disagree with the assessment while also giving comments on certain aspects of the analysis⁸⁷.
- 3.15 ComReg updated the analysis of the Retail Market Trends and Developments, component of Section 3 of the 2018 Further Consultation to take account of an important cohort of retail customers, that is, multi-site customers, highlighted in a number of the responses to the 2016 Consultation. Respondent's stated that they relied upon Eircom's WHQA inputs in order to service at least some of the sites of these customers where they had no network presence. ComReg's subsequent analysis of SIR data confirmed the importance of this set of customers in terms of the share of circuits they consume.

⁸⁷ See 2018 Further Consultation, paragraphs 3.9 to 3.26.

- 3.16 Further to this, the other key trends and analysis carried out in the 2016 Consultation was updated in Appendix 6 of the 2018 Further Consultation, to include data for 2016. These included the continuation of migration from TI to MI; the continued decline of Eircom's all wired retail LLs; and the stalling of the growth in wireless LLs, with 2016 seeing a marginal decline compared to 2015.

3.4 Retail Supply of Leased Line Services

Introduction

- 3.17 This Section explores the main trends and developments in the supply of retail LLs in Ireland. The competitive pressure from the supply side of the market is influenced by existing retail LL SPs, entry and exit of LL SPs, and the expansion of existing providers' networks. This Section will examine:
- (a) **the providers of retail LL services:** Their infrastructure, their presence in the wholesale LL markets, their market shares by LL circuits and revenues, as well as the overall retail market concentration (see paragraphs 3.18 to 3.35); and
 - (b) **the growth in infrastructure:** the expansion of state owned MANs; the deployment of duct and fibre; the expansion of wireless LLs and the National Broadband Plan (see paragraphs 3.36 to 3.55).

Providers of Retail LL Services

- 3.18 In 2008 ComReg collected data on retail LLs from approximately 10 SPs⁸⁸. This has increased to at least 17 main retail LL providers across Ireland⁸⁹, as outlined in Table 1 below. These SPs provide services using own-network ('**on-net**') infrastructure (i.e. own local access infrastructure and/or upstream 3rd party physical infrastructure) and/or services based on other SPs' managed inputs ('**off-net**') (i.e. where SPs use a leased line provided by a third party LL supplier to connect between the customer premises and the SPs network). SPs can rent wholesale leased lines from both Eircom and other SPs.

⁸⁸ BT, Cable and Wireless, COLT, Eircom, EU Networks, Magnet, Network IE, SprintLink, Strencom and Verizon.

⁸⁹ ComReg notes that this is not an exhaustive list of all authorised operators providing LL services in Ireland.

3.19 As can be seen from Table 1, many (although not all) SPs active in the retail LL market(s) in Ireland are also active in a relevant upstream WHQA market(s).

Table 1: Providers of retail LL services⁹⁰

Service Provider	Technologies Used	Presence in a wholesale market	Geographic coverage
AirSpeed	Ethernet and xWDM	Yes	National
AT&T	Ethernet and xWDM /TDM	No	N/A
BT	Ethernet and xWDM /TDM and Analogue	Yes	National
COLT	Ethernet and xWDM /TDM	Yes	Mainly Dublin area
Digiweb / Viatel	Ethernet	Yes	National
Eircom ⁹¹	Ethernet and xWDM /TDM and Analogue	Yes	National
euNetworks	Ethernet and xWDM	Yes	Mainly Dublin area
Fulnett / Strencom	Ethernet	No	N/A
GTT	Ethernet	Yes	Mainly Dublin area
Host Ireland	Ethernet	Yes	Dublin area
Magnet	Ethernet	Yes	Quasi-national
Three	Ethernet	Yes	National
Virgin Media	Ethernet and TDM	Yes	Quasi-national
Verizon	Ethernet and TDM	Yes	Mainly Dublin area
Vodafone	Ethernet and xWDM /TDM	Yes	National
Zayo	Ethernet and xWDM	Yes	Mainly Dublin area

⁹⁰ See Annex 2 for a description of retail LL providers.

⁹¹ Eircom's network is assumed to be ubiquitous for the purposes of this review given the national footprint of its under and over-ground infrastructure. Other networks are assessed as National where they have established POPs and presence in all provinces and many regional centres e.g. BT and AirSpeed/enet etc.

3.20 For the purposes of the analysis in this Decision, LL SPs can be broadly categorised into three types, having regard to the extent of the coverage of their own networks and the extent to which they depend on the use of wholesale services provided by other SPs to provide their retail and/or wholesale LL services:

- (a) **Own network SPs**⁹²: these SPs provide retail and/or WHQA LLs predominantly using their own network and associated infrastructure and, hence, are not heavily reliant on the use of wholesale inputs provided by other SPs when offering retail and/or wholesale LL services. Examples of such operators currently include Eircom Ltd. ('**Eircom**')⁹³ and Virgin Media Ireland Ltd. ('**Virgin Media**')⁹⁴.
- (b) **Wholesale LL purchasers**: these are SPs that, in addition to using their own networks, also purchase wholesale inputs in the wholesale LL market from other wholesale LL providers and use these inputs in conjunction with their own network inputs to provide LL services in the retail and/or wholesale markets. Examples of such operators currently include BT Ireland Ltd. ('**BT**')⁹⁵ and Vodafone Ireland Ltd. ('**Vodafone**')⁹⁶.
- (c) **Resale retail LL SPs**: these are SPs whose supply of retail LL services does not involve any use of self-built physical network. These SPs purchase wholesale access from a third party provider and then resell LLs under their own brand. Such operators include AT and T Global Network Services Ireland Ltd. ('**AT&T**')⁹⁷ and Fulnett Ltd. ('**Fulnett**')⁹⁸.

⁹² It should be noted that there is no truly independent retail LL SP as all SPs purchase wholesale circuits from other SPs. As such, this list includes those SPs whose retail circuits are predominantly on-net.

⁹³ Further information is available at <https://www.eir.ie/>.

⁹⁴ Further information is available at <https://www.virginmedia.ie/>.

⁹⁵ Further information is available at <http://www.btireland.com/>.

⁹⁶ Further information is available at <http://www.vodafone.ie/>.

⁹⁷ Further information is available at <https://www.corp.att.com/worldwide/att-you-ireland/>.

⁹⁸ Further information is available at <https://www.strencom.net/>.

- 3.21 After describing the main SPs in the provision of retail LLs, the remainder of this Section examines the retail LL market as a whole, including all the different technologies utilised (such as Analogue, TDM, Ethernet and xWDM) to provide retail LLs, along with the trends in the supply of these lines. These trends highlight important developments when considering whether to define separate retail LL markets.
- 3.22 However, it should be noted from the outset that with the exception of the discussion on the ‘Demand for LLs over different media (wired vs wireless)’ (paragraphs 3.87 to 3.97 below), data presented will only include retail LLs provided over a wired media (copper and fibre), and excludes retail LLs using the wireless medium. This is due to their exclusion from each of the Relevant Retail LL Markets outlined in Section 4. Furthermore, the data below is based solely on observations in the retail market and many of these LL circuits may be offered based on wholesale inputs provided by Eircom (as a result of regulatory obligations under the 2008 Decision).

Figure 4: Number of Wired Active Retail LL Circuits by SP [x REDACTED]

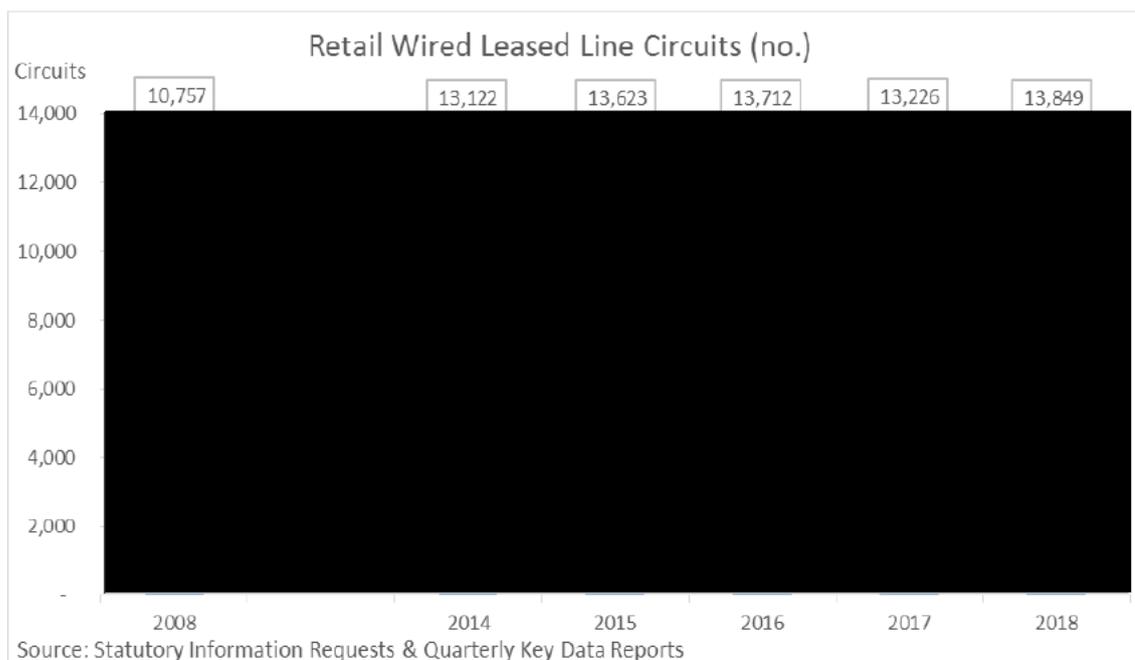


Figure 5: Market Shares of Wired Active Retail LL Circuits by SPs [X REDACTED]



- 3.23 Figure 4 and Figure 5 above set out the number of wired circuits sold by SPs and their corresponding circuit market shares⁹⁹, respectively. SPs with 500 circuits or more are individually identified, and all others below this volume level are grouped together under the heading 'other authorised operators' ('**OAOs**')¹⁰⁰.
- 3.24 Figure 4 shows an increase of 2,866 circuits in the total number of wired circuits sold between 2008 and 2015 - 26.6% over 7 years. Between 2015 and 2018 the increase was a much more modest at 226 circuits, 1.7% over 3 years. An examination of the trends for the different types of technology included in these totals will help explain the change in circuit growth.

⁹⁹ Please note that market shares throughout this Decision are, unless otherwise stated, measured in terms of physical circuits, with the exception of the LL circuit bandwidth analysis where logical bandwidths are measured where applicable.

¹⁰⁰ OAOs include the following SPs AirSpeed, Digiweb, enet, euNetworks, Fullnet, GTT, Host Ireland and Magnet.

- 3.25 Over the entire period, we can see that Eircom remains the largest retail supplier of wired LLs, but has experienced year on year declines, with an overall reduction of [redacted]]¹⁰¹. BT is the SP who has seen the greatest increase in circuit sales between 2008 and 2017 of [redacted]]¹⁰². Of the other major SPs, Vodafone (formerly Cable and Wireless in 2008) and Verizon have seen more modest increases in circuits of between approximately [redacted]]¹⁰³ respectively, while COLT has seen a decline of nearly [redacted]]¹⁰⁴. Since 2008 there have been a number of new entrants to the retail LLs market that have [redacted]] wired circuits such as Virgin Media and AT&T. The wired retail circuits sold by OAOs have increased over the period, from 78 circuits in 2008 to nearly 2,000 in 2018, an increase of 24 times.
- 3.26 Figure 5 shows Eircom's market share fell by [redacted]]¹⁰⁵ between 2008 and 2018, from [redacted]]¹⁰⁶. BT has experienced a significant increase in its market share over the period 2008 to 2018, going from [redacted]]¹⁰⁷. Over this period Vodafone and Verizon did not experience a significant change in their market shares, while COLT saw its market share fall by [redacted]]¹⁰⁸. Overall there has been a significant growth in the market share captured by alternative SPs to Eircom, going from [redacted]]¹⁰⁹ in the 10 year period examined.

¹⁰¹ Between a 0% and 50% decline for Eircom.

¹⁰² Over a 100% increase for BT.

¹⁰³ Between a 0% and 50% increase for Vodafone and Verizon.

¹⁰⁴ Between a 0% and 50% decline for COLT.

¹⁰⁵ Between a 0% and 50% decline for Eircom.

¹⁰⁶ From 70% to 80% down to 30% to 40% for Eircom.

¹⁰⁷ From 0% to 10% up to between 20% to 30% for BT.

¹⁰⁸ Between a 0% and 10% decline for COLT.

¹⁰⁹ From 20% to 30% up to 60% to 70% for alternative SPs to Eircom.

Figure 6: SPs' Revenue from Wired Retail LL Services [X REDACTED]



Figure 7: SPs' Market Share of Revenue from Wired Retail LL Services [X REDACTED]



- 3.27 Figure 6 and Figure 7 above set out SPs' revenues and revenue market shares from retail wired circuit sales, respectively. An important caveat to note when examining revenues is that they can also include additional services that arise from the sales of services bundled with the sale of retail LLs and that these can vary widely across customers and circuits. Additionally, the access LL portion of these bundled retail services may be "zero rated" and included in charges for "cloud" services or other retail services. Therefore the revenue for equivalent LLs can vary widely due to differences in bundled services and how the customer pays for them. It is very difficult to disaggregate pure retail LL revenues from revenues associated with other services sold in the bundle of services. As such, the above figures give an indication of the wider / bundled competition taking place between SPs in which LLs are an essential component.
- 3.28 Figure 6 shows a growth in the total revenue of wired retail LL circuits between 2008 and 2015 of over €58 million or 72.6% over 7 years. Between 2015 and 2016 there was a decline in revenue of over €29 million, approximately 21% ([§< [REDACTED]]). This was then followed by an increase of over €11 million or 10% from 2016 to 2018. Eircom and BT have seen revenue growth over the period 2008 to 2018, of [§< [REDACTED]]¹¹⁰ respectively. This is despite both having [§< [REDACTED]]. Colt's revenue has [§< [REDACTED]]. Vodafone (Cable and Wireless in 2008) and Verizon have seen declines in revenue over this period, [§< [REDACTED]] respectively¹¹². This is a [§< [REDACTED]]. New entrants such as Virgin Media and AT&T have a [§< [REDACTED]]. The revenue captured by alternative SPs to Eircom has increased from 2008 to 2018 by [§< [REDACTED]].

¹¹⁰ Between a 50% and 100% increase for Eircom and over a 100% increase for BT.

¹¹¹ Between a 0% and 50% decline for COLT.

¹¹² Between a 50% and 100% decline for Vodafone and Verizon.

- 3.29 Figure 7 shows Eircom with the highest market share at the start and the end of the period, which shows an increase of [%< ██████████]¹¹³. BT has also seen an increase in market share over the period of [%< ██████████ ██████████]¹¹⁴. Vodafone, Verizon and COLT all saw a decline in market share of [%< ██████████]^{115,116,117}. Various SPs (which may change over time) with small market shares, collectively designated as OAOs, have seen a rise of 12% from 4% to 16%.
- 3.30 Overall ComReg considers SPs circuit volumes to be a better indication for market shares rather than annual revenues given the difficulties of disaggregating pure LL revenues from bundled revenues, as discussed above. However, as discussed in Section 5¹¹⁸ concerning the geographic market definition of the Relevant WHQA Markets, an important metric for determining the presence (or absence) of market power is the volume and location of SPs' "connected premises". As discussed above, revenues may include charges for other bundled services that cannot be extracted to make reliable comparisons or trend analysis on retail LL revenues possible. Figure 4 and Figure 5 indicates an overall increase in competition over the period 2008 to 2018 in the wired retail LLs market. This is supported by the fall in Eircom's market share [%< ██████████ ██████████] and the introduction of a number of new entrants. Another way to interpret this data is to use a structural index to see changes in competition over the period.

¹¹³ Between a 0% and 10% increase and a market share staying between 30% and 40% for Eircom.

¹¹⁴ Between a 0% and 10% increase and a market share moving from 10% to 20% to 20% to 30% for BT.

¹¹⁵ Between a 10% and 20% decline for Vodafone.

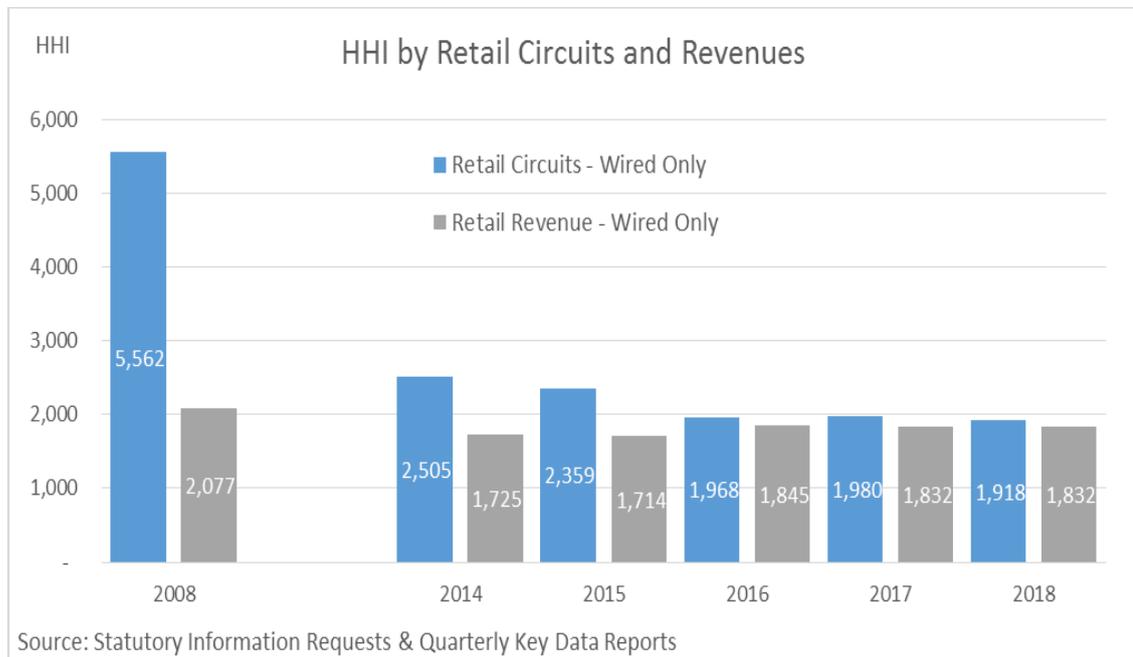
¹¹⁶ Between a 10% and 20% decline for Verizon.

¹¹⁷ Between a 0% and 10% decline for COLT.

¹¹⁸ See Section 5.7 of this Decision.

- 3.31 One measure of the overall general competitiveness of the retail LL market is the Herfindahl Herchsmann Index ('HHI')¹¹⁹, as illustrated in Figure 8, below:

Figure 8: HHI by Wired Retail Circuits and Revenues¹²⁰



- 3.32 The HHIs by circuit volumes illustrate that the retail LL markets have become less concentrated over time. The HHI as measured by wired circuits shows that since 2008 the retail market has moved from highly concentrated (HHIs above 2,500) to moderately concentrated in 2018 (HHIs between 1,500 and 2,500).
- 3.33 Over the same period the HHI, as measured by revenue for wired circuits has also declined, by 245 but this has not changed from the moderately concentrated category. Between 2015 and 2016 the concentration level increased by 131 but this was not attributed to any [§< [REDACTED]] . As mentioned above, due to the uncertainty around the components of revenue, it is considered a less reliable concentration metric to those based on circuits.

¹¹⁹ The Herfindahl Herchsmann Index ('HHI') takes into account the relative size distribution of the firms in a market. It approaches zero when a market is occupied by a large number of firms of relatively equal size and reaches its maximum of 10,000 points when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. Market concentrations based on HHIs are classified as follows: (a) unconcentrated Markets: HHI below 1,500; (b) Moderately Concentrated Markets: HHI between 1,500 and 2,500; and (c) Highly Concentrated Markets: HHI above 2,500.

¹²⁰ Data sources for calculations are responses to SIRs and ComReg's QKDRs.

- 3.34 While the HHI, as presented above, can provide a useful high level view of trends in competition over time, it is important to note the limitations of such concentration metrics as a measure of competition. It does not take account of market contestability (barriers to entry and exit); barriers to expansion; market segmentation; geographic variation; or the impact of innovation on competition in the market.
- 3.35 In conclusion, the fall in Eircom's absolute number of wired retail LL circuits sales and its overall decline in market share, coupled with the growth of existing SPs, such as BT, and new competitors, such as Virgin Media, would indicate an overall increase in competition at a retail level over the period 2008 to 2018. It must be noted that this is in the presence of regulation at the wholesale level, which enables those competitors of Eircom with or without network to compete with them.

Growth in infrastructure

- 3.36 Since the 2008 Decision, there have been notable increases in the deployment of networks that can be used to provide retail LLs. These include:
- (a) The expansion of State owned MANs, supplemented by ETNL infrastructure; and
 - (b) The fibre network deployment by SPs such as Eircom, Virgin Media, SIRO and Zayo.

State owned MANs and enet Infrastructure

- 3.37 The Metropolitan Area Networks (MANs) are fibre rings that traverse the town centres and business districts of regional towns throughout the State. There are a total of publicly (State) owned 88 MANs servicing 94 towns and catchment areas. Their primary rationale is to improve the provision of business connectivity to End Users in these locations.
- 3.38 The Department of Communications, Climate Action and Environment ('**DCCA**E') designated e-Nasc Eireann Teoranta (enet) as the Managed Service Entity (MSE) whose role it is manage, maintain and operate the MANs on behalf of the State by way of a long term concession agreement. These MANs were provisioned under an approved State Aid Decision as Services of General Economic Interest that would not have been built on a commercial basis ('**State Aid Decision**').¹²¹

¹²¹ http://ec.europa.eu/competition/state_aid/cases/199656/199656_581678_68_2.pdf

- 3.39 Under the State Aid Decision, all SPs must be provided with open access to the networks on a non-discriminatory carrier neutral basis. Such access includes access to passive services such as duct and dark fibre access, along with access to active managed services. The MANs are fibre-based networks that are generally laid in a ring formation in metropolitan areas. These individual MAN networks each have a "co-location facility". In these co-location facilities, SPs can place their telecommunications equipment and thereby gain access to customer locations along the MAN by either:
- (a) Installing their own fibre cable in the MAN duct (or sub-duct); or
 - (b) taking dark fibre from the MSE; or
 - (c) taking a managed service from the MSE.
- 3.40 It was part of the concession agreement that the MSE would provide the ability for SPs to access buildings along the route of the MANs in order to allow SPs to install fibre connections into premises (drop connections). This was to be done either by the MSE or by the SP themselves under supervision from the MSE.
- 3.41 The MANs were built as individual local access only networks and, in effect, are access islands without connectivity to core or national backhaul networks though they were designed to pass nearby Eircom exchanges, railway stations¹²² and ESBT¹²³ fibre routes, where these were available, in order to facilitate possible access to known backhaul networks. Although SP's can co-locate on the MANs they must provide or source their own backhaul solutions to connect from the MANs back to their core networks locations (Point of Presence ('PoPs')).
- 3.42 Prior to the 2008 Decision the DCCAIE had awarded the first concession agreement to run an initial phase of 28 MANs to enet in 2004 following an open tender process. This was granted for 15 years. Following the 2008 Decision, in July 2009, after another open tender, enet also won the concession agreement to run the second phase of MANs. This second phase consisted of 60 MANs covering 66 towns whereby all urban centres in the State with populations in excess of 1,500 would receive this MAN infrastructure. Again the term of the contract was 15 years.

¹²² BT Ireland have fibre optic cable on the mainline national rail network and on some redundant railways (Limerick to Tralee).

¹²³ ESB Telecom has the national "figure of eight" fibre routed on high-tension electricity pylons with a spur to Letterkenny.

- 3.43 ComReg understands that in 2017, a clause in the 2004 and 2009 Concession Agreements that allowed for the awarding of a contract extension to the original MSE without a tender process was granted to enet in 2017. Both contracts now co-terminate in 2030.
- 3.44 enet Telecommunications Networks Ltd ('**ETNL**') is wholly owned by the same owners as enet, that on a commercial basis, has established network in Dublin and built infrastructure not related to the publicly owned MANs in Castlebar, Co. Mayo; Shannon, Co. Clare and Newbridge, Co. Kildare. ETNL also invested in developing backhaul services based on dark fibre infrastructure leased from Coras Iompair Eireann (CIE) routed on the national mainline rail network. This infrastructure allows the enet group of companies¹²⁴ to provide fully independent end-to-end services from many of its public and private MANs to customer premises and data centres in Dublin.

Fibre Network deployment by SPs

- 3.45 Eircom is continuing to deploy its Next Generation Access ('**NGA**') solutions, as manifested through its continued rollout of fibre to the cabinet ('**FTTC**') and fibre to the home/building ('**FTTH/B**') technologies in selected areas¹²⁵. Eircom's FTTC broadband can offer maximum speeds (down/upstream) of up to 100/20Mbps and fixed profiles of 100/30, 300/50 and 1,000/100Mbps for FTTH/B. It announced it had passed 1.9 million¹²⁶ premises with its combined FTTC/H rollout.

¹²⁴ enet and the treatment of the publicly owned MANs is discussed further in Section 5.7, paragraphs 5.286 to 5.288.

¹²⁵ Eircom announced on the 21st August 2018, they have passed 170K rural homes and businesses with FTTH out of a target of 300K premises. <https://www.openeir.ie/news/open-eir-passes-170k-rural-home-businesses-with-Fibre-to-the-Home-FTTH/>. FTTH can be used for the provision of retail LLs.

¹²⁶ Page 7 of eir Group Result for the third quarter 2019, https://www.eir.ie/opencms/export/sites/default/content/pdf/IR/presentations/2018_2019/quarter3/eir_Q3_FY19_results_presentation.pdf; Retrieved 8th August 2019.

- 3.46 Virgin Media has deployed its ('DOCSIS')¹²⁷ 3 network which covers approximately 55%¹²⁸ of premises nationwide (predominantly residential premises). Although this infrastructure is utilised to provide broadband to households, VM has deployed fibre deeper into its access network, far closer to business premises than was previously the case and also facilitates the deployment of Ethernet via DOCSIS products along with point-to-point ('P2P') Ethernet services. It also provides Ethernet LLs using P2P wireless technology.
- 3.47 In July 2014, ESB and Vodafone Ireland, announced a fully functioning 50:50 Joint Venture named SIRO¹²⁹ to build a fibre to the building ('FTTB') network across 50 towns, reaching potentially 500,000 customers, with speeds from 200 Mb/s to 1 Gb/s. The European Commission approved the creation of the Joint Venture Company ('JVCo') in October 2014. The network is being deployed using ESB's existing overhead and underground infrastructure. It had passed 250,000 homes and businesses across 45 towns¹³⁰ in December 2018. It is a wholesale provider of Broadband and Leased Lines and does not operate directly in the retail market.
- 3.48 ComReg notes that both FTTC and DOCSIS 3 require more fibre being built deeper into the access network with potential for this to be used for P2P Ethernet. The roll-out of fibre access networks by the SPs detailed above can be utilised to provide retail LLs.
- 3.49 It is important to note that there has been an increase in the investment and availability of alternative wired fibre networks in Ireland since the 2008 Decision. Specifically, BT, Virgin Media, the enet group of companies, Digiweb and Vodafone have extended their fibre network reach to many commercial districts in urban areas. This is especially so in areas of high business activity, such as business parks.

¹²⁷ Data over Cable Service Interface Specification (Cable Access TV network standard).

¹²⁸ Virgin Media's network has passed 929,800 households in Ireland. See <https://www.libertyglobal.com/operation/ireland/>; Retrieved 8 August 2019. Penetration rate is based on Central Statistics Office ('CSO') 2016 Census of households in Ireland of 1,697,665. See <https://www.cso.ie/en/releasesandpublications/ep/p-cp1hii/cp1hii/od/>.

¹²⁹ See <http://siro.ie/> for details.

¹³⁰ See <https://siro.ie/siro-now-a-serious-challenger-to-eir-in-fibre-arms-race/>, Retrieved 8 August 2019.

- 3.50 Many SPs have developed their networks in parts of the Greater Dublin region and have achieved access and connectivity to all the major business parks in the greater Dublin area. In doing so they have leveraged the T50¹³¹ infrastructure and shared network builds¹³² across Dublin. Multiple SPs (e.g. [REDACTED]) have also purchased/leased duct and/or dark fibre to augment their own independent network build, and many other have purchased lit capacity and dark fibre across it. Combined with radial routes from the city centre, this has allowed them connect to the majority of commercial districts, significant business parks and data centres located in the greater Dublin area.
- 3.51 The network maps supplied to ComReg by SPs in response to SIRs demonstrate this development and show that multiple SPs are present in business parks in areas such as Sandyford, Tallaght, Citywest, Clondalkin, Parkwest, Blanchardstown, Dublin Airport, Santry, Clonshaugh, along with the main commercial areas in central Dublin and the Docklands area.
- 3.52 However, such network deployment is not limited to the Dublin commercial areas and has also occurred throughout the State albeit, though not to the same degree as several SPs have concentrated solely on the Dublin area. However, other SPs have achieved national and quasi-national footprints by using a combination of various backhaul and infrastructure providers, local enet MAN connectivity and combined with self-build. They have thereby succeeded in connecting to the major towns and cities across the country. This has also allowed them to establish regional PoPs, directly connect to customer sites and importantly, connect up major regional business, technology and retail parks. Local loop unbundling ('LLU') operators have also used such combinations to unbundle Eircom Exchanges across the country.

National Broadband Plan

- 3.53 ComReg also notes that the Irish Government has proposed the National Broadband Plan ('NBP'), which will support the provision of broadband access to households and businesses that currently fall outside the reach of existing broadband networks. The purpose of the NBP is to ensure that broadband service with a minimum download speed of 30Mb/s is available nationally.

¹³¹ The T50 is an independent duct infrastructure circumnavigating the M50 motorway consisting of a 12-way duct system with attendant chambers. It passes and effectively connects all the major business parks around the M50, and Dublin Airport. See http://www.mdmeng.ie/t-50_telecoms_network.php for details.

¹³² Where two or more operators have shared the cost of major duct routes.

- 3.54 In May 2019, the Irish Government approved the appointment of a "Preferred Bidder". This is the final step in the NBP procurement process before a Contract is awarded and deployment begins in the State Intervention Area. This is expected to pass 540,000 premises including 100,000 businesses and farms, and over 600 schools, where commercial operators will not commit to deliver high speed broadband. The rollout is expected to commence in Q4 2019. While the majority of premises will be passed in the initial 5 years the overall rollout will likely be concluded within 7 years.
- 3.55 The appointed Bidder's solution is to set up a wholesale open access company dedicated to the rollout of a predominantly FTTH network in the Intervention Area, which will be capable of delivering a high speed broadband network, initially providing services of 150Mbps to the majority of homes and up to 1Gbps to heavy data users and Small and Medium size Enterprises.¹³³

Conclusion

- 3.56 The retail LL market in Ireland contain a considerable number of competitors of different sizes, with ComReg having collected data from 17 different SPs in this market. These can be broken down into different infrastructure categories:
- (a) **Own network SPs** who predominantly use their own network such as Eircom, enet, Virgin Media;
 - (b) **Wholesale LL purchasing SPs** who purchase wholesale inputs in conjunction with their own network such as BT, Verizon and Vodafone; and
 - (c) **Resale retail LL SPs** who do not involve the use of their own physical network such as AT&T and Fulnett.
- 3.57 The summary statistics of the retail LLs markets show that:
- (a) The market share of circuits of the incumbent, Eircom, has fallen [$\%$ [REDACTED]] ¹³⁴; and
 - (b) The market concentration by circuits has fallen from a HHI of 5,562 in 2008 to 1,918 in 2018.¹³⁵

¹³³ <https://www.dcae.gov.ie/en-ie/news-and-media/press-releases/Pages/Press-Release-Minister-Bruton-Updates-Government-on-the-National-Broadband-Plan.aspx> retrieved 26 August 2019.

¹³⁴ In revenue terms it has [$\%$ [REDACTED]].

¹³⁵ As measured by revenues, the HHI has fallen from a HHI of 2,077 in 2008 to 1,832 in 2018.

- 3.58 The growth in infrastructure since the ComReg's 2008 Decision has primarily been in fibre based networks¹³⁶, as opposed to copper based LLs, which has supported the growth in the Ethernet and xWDM segments of the retail LL market.

3.5 Retail Demand for Leased Lines Services

Introduction

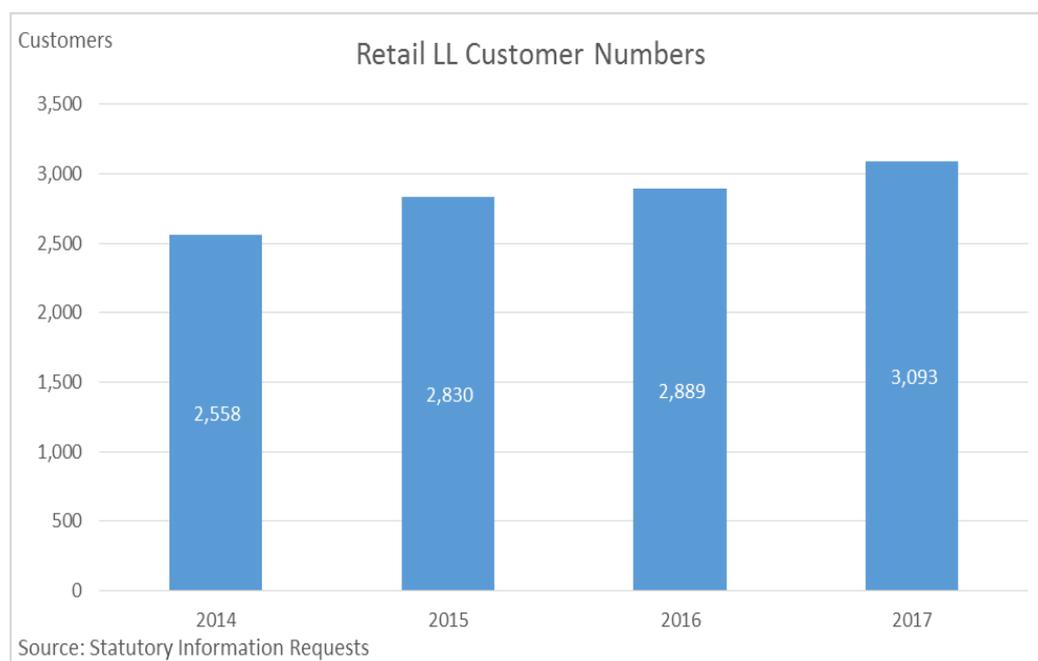
- 3.59 This Section examines the primary trends and developments in the demand for retail LLs that have taken place in Ireland since the 2008 Decision, with a focus on the years 2014 to 2017 (being the years for which data is readily available). The changing patterns of consumption in the LL market, such as demand for higher bandwidth capacities and the increasing use of cloud services, are impacting on the technologies and media over which retail LLs are most commonly delivered.
- 3.60 This Section will examine:
- (a) the profile of customers, including the business categories they fall into; the share that are from the public sector and the difference between single-site and multi-site customers will be reviewed in paragraphs 3.61 to 3.80;
 - (b) the migration in LL technology from analogue and TDM LL technologies to Ethernet based LLs (discussed in paragraphs 3.81 to 3.86 below);
 - (c) the demand for the different media that LLs are delivered over, in particular looking at the demand for wired versus wireless LLs (discussed in paragraphs 3.87 to 3.97 below);
 - (d) the growth in the demand for LL bandwidth over time (discussed in paragraphs 3.98 to 3.103 below); and
 - (e) the trend in bundling LLs with other services (discussed in paragraphs 3.104 to 3.108 below).

¹³⁶ It should be noted that ComReg has included only wired LLs in its retail product market definition as discussed in the 2018 Further Consultation in paragraphs 3.118 to 3.115 and reiterated again in this Decision in Section 4.4, paragraphs 4.101 to 4.145).

Customer profiles

3.61 ComReg has compiled a list¹³⁷ of unique retail LL customers from the SIRs collected from SPs covering the years 2014 to 2017. Where possible, ComReg has counted different companies under a single corporate entity as a single customer, such as Reuters as part of Thomson Reuters Corporation, making the assumption that there is centralised corporate purchasing of retail LLs in order to avoid an over counting of customers. Customers that purchased retail LLs from multiple SPs were identified as single customers, using the customer name or variations of it to identify commonality.

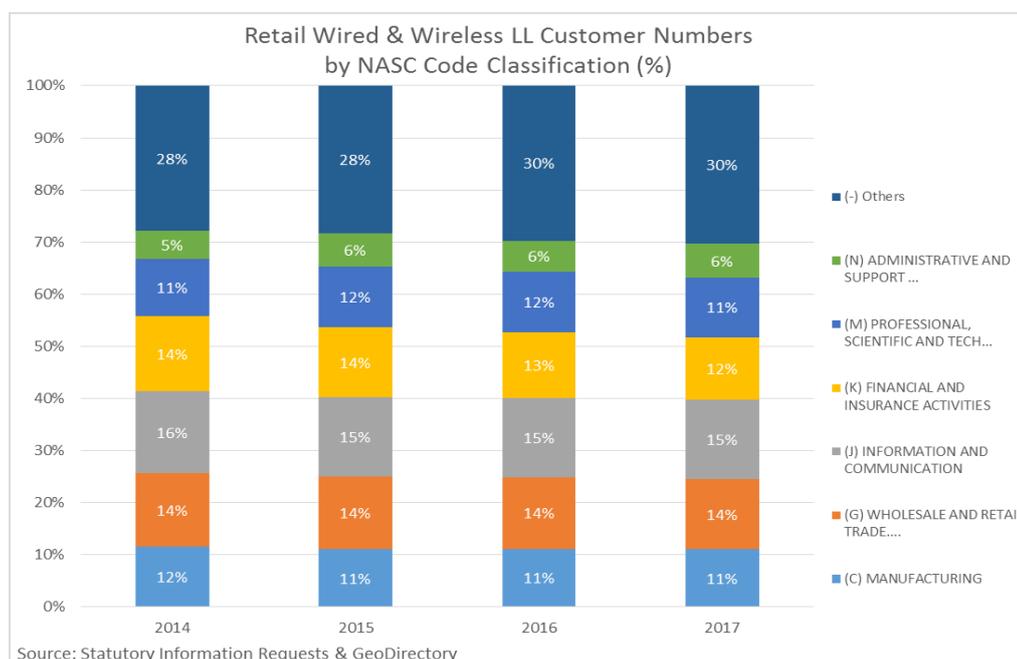
Figure 9: Retail LL Customer Numbers



3.62 As can be seen in Figure 9 above, the total number of unique retail LL customers has grown in recent years from 2,558 customers in 2014 to 3,093 customers in 2017, an increase of 535 customers. This is an average annual growth rate of nearly 7%.

¹³⁷ See Annex 3, paragraphs A3.38 to A3.40 for a discussion on the data treatment of customers.

Figure 10: Retail LL Customers by NASC Classification



3.63 By cross referencing the Geo-directory database¹³⁸ with the list of customers taken from SPs' responses to the SIRs, ComReg has also examined the breakdown of customers across the different sectors of the economy. Figure 10 above, was calculated using a sample of approximately 63%¹³⁹ of all the retail customers and shows that 6¹⁴⁰ level 1 NACE¹⁴¹ codes out of a total of 21 NACE codes accounted for between 72% of the customers in the sample in 2014 and 70% in 2017. The 'Others' category includes those level 1 NACE codes that each represent less than 5% of the sample analysed.

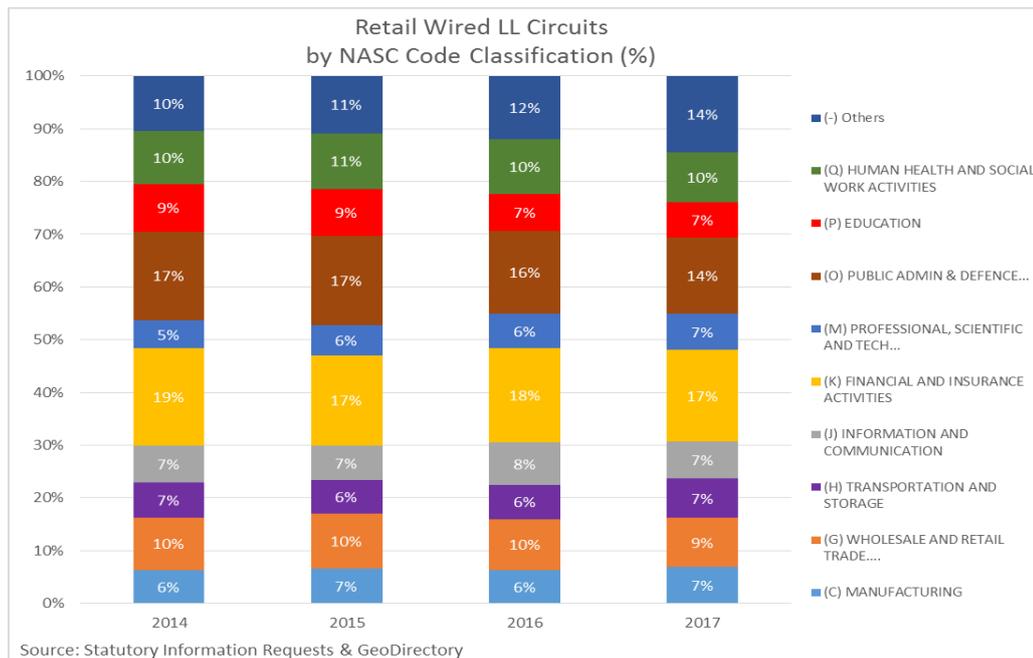
¹³⁸ See Annex 3, paragraphs A3.45 to A3.49, for an outline of the data methodology used.

¹³⁹ 63% is the success rate ComReg has had with matching the list of retail LL customer names with the company names in the Geodirectory Database with identifiable NACE codes as well as ComReg's own research on companies.

¹⁴⁰ (C) Manufacturing; (G) Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycle; (J) Information and Communication; (K) Financial and Insurance Activities; (M) Professional, Scientific and Technical Activities; and (N) Administrative and Support Service Activities.

¹⁴¹ European Industrial Activity Classification.

Figure 11: Retail LL Circuits by NASC Classification



- 3.64 Using the same sample of customers identified in Figure 10, Figure 11 above shows the associated volume of wired LL circuits purchased by these customers. This sample accounts for approximately 81% of all wired circuits purchased between 2014 and 2017 and this sample is dominated by 9¹⁴² level 1 NACE codes. As in the case with Figure 10, the ‘Others’ category includes those level 1 NACE codes that each represent less than 5% of the sample (of wired circuits).
- 3.65 There are 4 level 1 NACE codes (C, G, J and K), that have a greater than 5% share of the customer numbers and wired circuits in the sample. Collectively they account for between 56% and 52% of customer numbers and 44% and 43% of wired circuits in the sample in the years 2014 and 2017, respectively.

¹⁴² (C) Manufacturing; (G) Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycle; (H) Transportation and Storage; (J) Information and Communication; (K) Financial and Insurance Activities; (M) Professional, Scientific and Technical Activities; (O) Public Administration and Defence; Compulsory Social Security; (P) Education; and (Q) Human Health and Social Work Activities.

- 3.66 Figure 11 includes 3 level 1 NACE codes (H, O and Q), that are greater than 5% of the sample of wired circuits, but were under 5% in the sample of customers numbers shown in Figure 10. This is as a result of higher than average consumption of wired circuits by 1 or more of the customers in each of these level 1 NACE code categories. The corollary of this applies to 2 level 1 NACE codes (N and M) that fall under 5% (included in the ‘(-) Other’ category) in Figure 11 but were over 5% in Figure 10. This means that consumers in this code purchased less than the overall average number of wired circuits consumed.

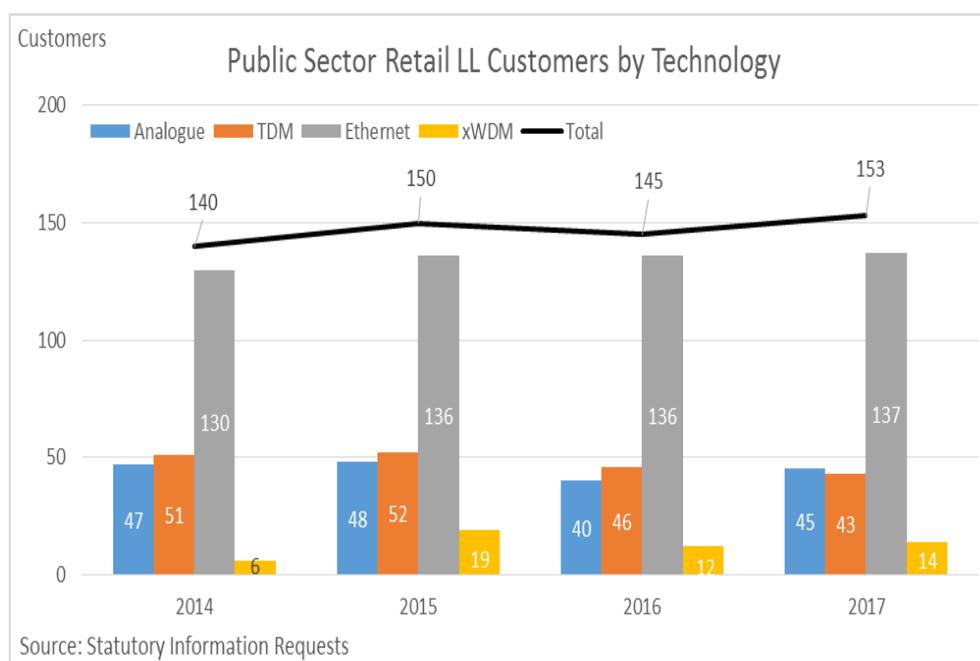
The Public Sector

- 3.67 The demand for retail LL from the public sector has also grown since the 2008 Decision.

Figure 12: Public Sector Retail LL Customers and Share of all Customers



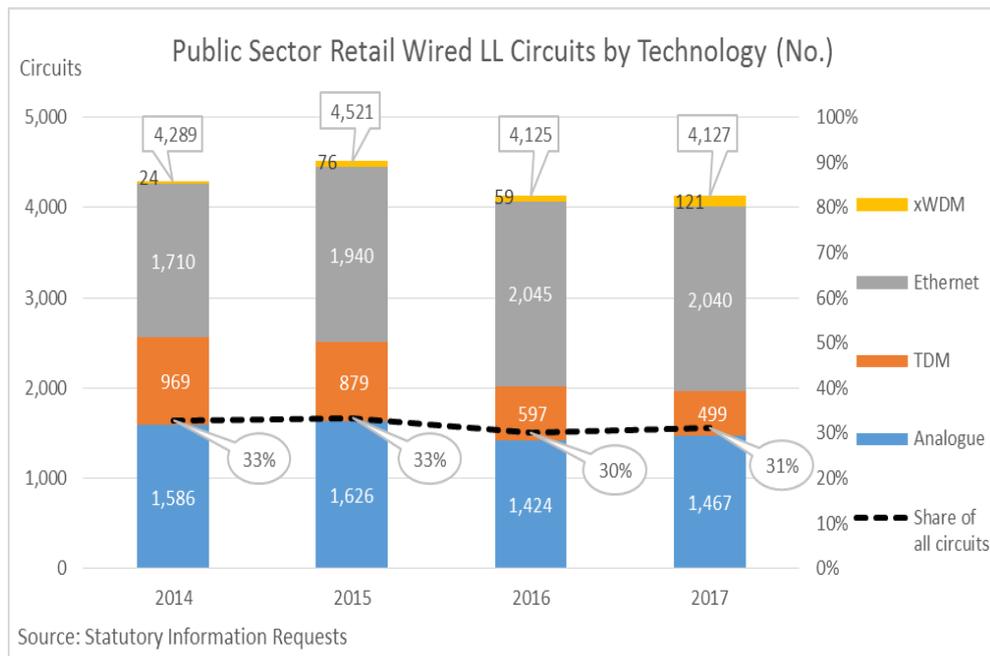
- 3.68 Figure 12 above shows that the number of public sector LL customers has not changed significantly between 2014 and 2017, going from 140 to 153, an increase of 9% from a relatively small number of organisations. Overall public sector customers account for 5% of the total share of customers, over the period examined.

Figure 13 Public Sector Retail LL Customers by Technology¹⁴³

3.69 It can be seen in Figure 13 above that the vast majority of public sector consumers of retail LL are purchasing Ethernet circuits. A sizeable proportion are also purchasing Analogue and TDM circuits, 29% and 28% in 2017, respectively. The number of public sector organisations purchasing Analogue and TDM LL circuits has been gradually declining, 4% and 16% respectively, over the period 2014-17.

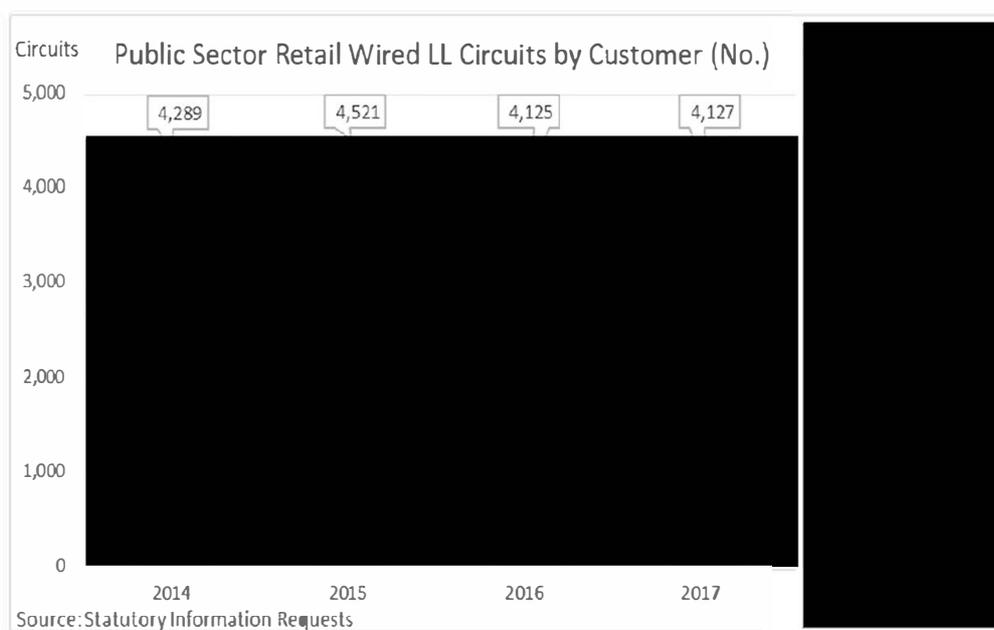
¹⁴³ Public sector consumers may consume more than one type of retail LL technology and will be accounted for under each technology they consume in this figure.

Figure 14 Public Sector Retail Wired LL Circuits by Technology



3.70 Figure 14 above shows that public sector customers collectively consume over 30% of all wired retail LL circuits, while at the same time represent only 5% of total LL customers. Over the period examined, the total number of LL circuits purchased by public sector organisations have declined from 4,289 in 2014 to 4,127 in 2017, a decline of 162 circuits or just under 4%. This decline over this period has been driven by a fall in TDM (-470), Analogue (-119) circuits, while Ethernet (+330) and xWDM (+97) saw an increase. Overall, Ethernet circuits are the most popular LL circuits purchased, accounting for nearly 50% of all circuits in 2017. This is followed by analogue circuits, at just over 35%; TDM circuits at 12% and xWDM representing 3% of all circuits sold in 2017.

Figure 15: Public Sector Retail Wired LL Circuits by Customer [PARTIALLY REDACTED]



- 3.71 As can be seen in Figure 15 above, within this public sector customer grouping, the 10 largest public sector consumers account for over 70% of all public sector LL circuits purchased. These 10 public sector customers are large organisations operating from a wide variety of locations around the country, such as the HSE, the Department of Social Protection and An Garda Síochána, or bodies that collectively purchase for a number of public sector organisations, such as HEAnet¹⁴⁴ and Government Networks¹⁴⁵.

¹⁴⁴ HEAnet were appointed to manage the school broadband network which currently provides synchronous 100Mb/s data connectivity as well as managing school routers, centralised content filtering, centralised firewalling, anti-virus, and associated IT services to approximately 750 second level schools throughout Ireland. HEAnet also manages the provision of data connectivity services to all State supported 3rd level education institutions in Ireland. Currently these institutions are being provided with a minimum of 1Gb/s bandwidth data connectivity. It also leases dark fibre from various infrastructure providers over which it operates its own high-bandwidth network. Further information is available at <http://www.heanet.ie/>.

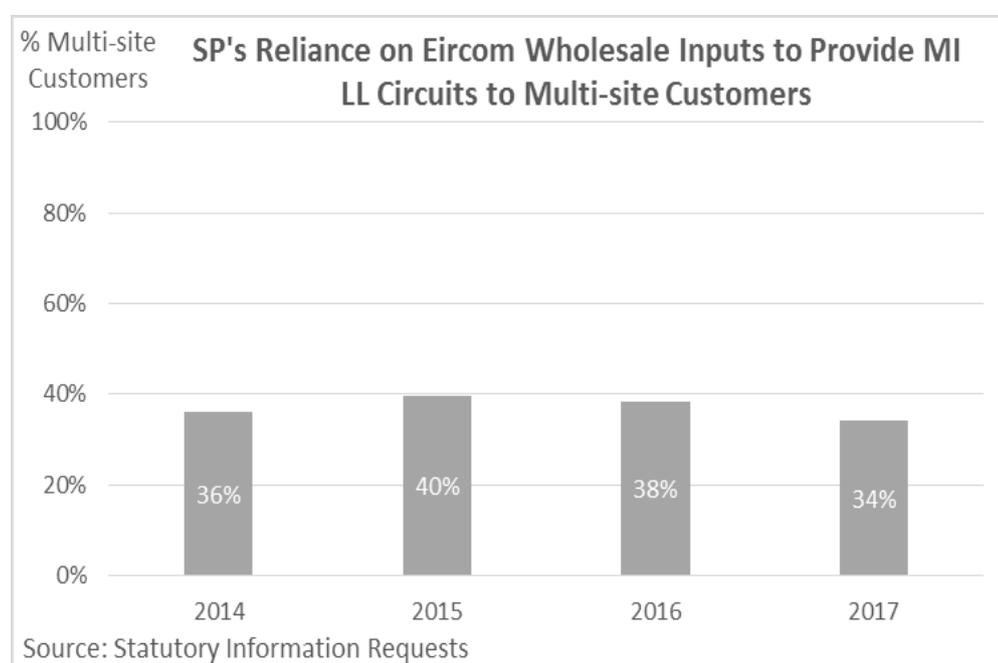
¹⁴⁵ The Office of the Government Chief Information Officer (OGCIO) has responsibility for Government Networks (GN), a private, managed WAN connecting public service agencies via a data, voice and video capable network. GN is designed primarily to facilitate secure and reliable communication between Government agencies and to support existing and future Government applications. A mechanism for providing agencies with a secure access to the Internet is included as well as a means for agencies to securely host Internet services. The OGCIO is an office within the Department of Public Expenditure and Reform, further information is available <https://whodoeswhat.gov.ie/division/per/OGCIO/> and <https://www.per.gov.ie/wp-content/uploads/3.8-OGCIO.pdf>.

- 3.72 Two other groupings within the public sector category of customers were Local and Central Government organisations which collectively accounted for 20% and 11%, respectively, of all public sector retail LL circuits purchased.

Importance of Multi-site Customers

- 3.73 The importance of multi-site retail LL customers within the retail LL markets was raised by a number of Respondents (enet, Vodafone, BT and Airspeed)¹⁴⁶ in their Submissions to the 2016 Consultation and reiterated by (enet, Vodafone and BT) in their submissions to the 2018 Further Consultation. These Respondents highlighted their dependence on Eircom's WHQA inputs in their provision of LL lines to multi-site customers, as Eircom is the only LL provider with national coverage.

Figure 16: Reliance on Eircom MI Wholesale LL Inputs for Multi-site Customers

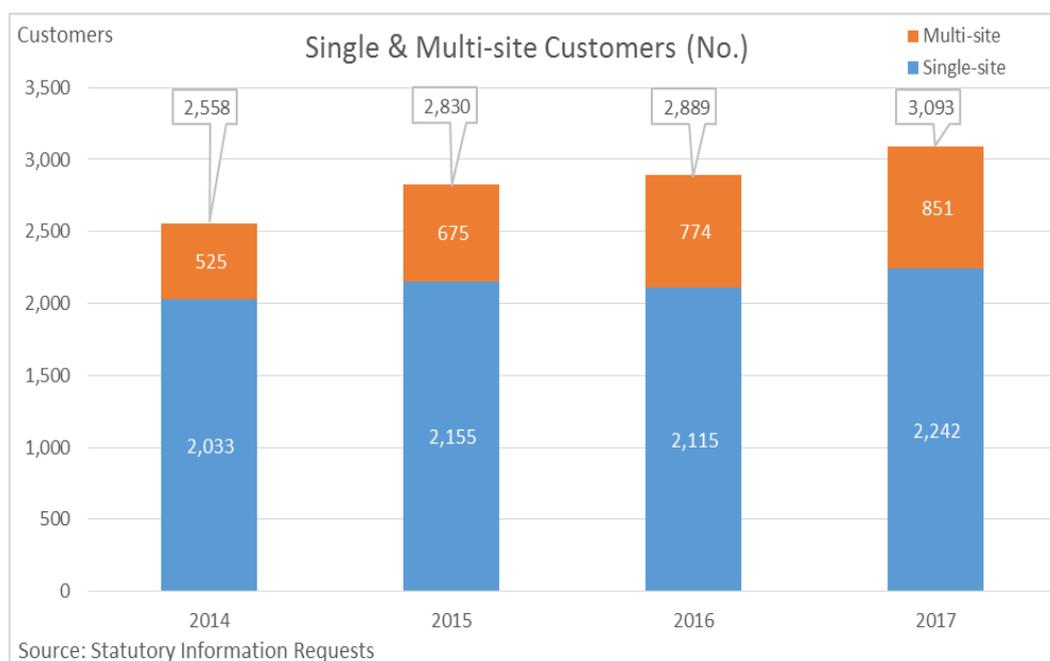


- 3.74 Figure 16 above shows ComReg's analysis of these arguments covering the years 2014 to 2017. Over this period in aggregate SP's, excluding Eircom, relied on Eircom's wholesale inputs when providing MI LLs to approximately a third of their multi-site customers.

¹⁴⁶ Paragraphs 3.18 to 3.21 in the 2018 Further Consultation.

- 3.75 In Section 4 of this Decision, analysis of the consumption patterns of multi-site customers is used to inform the demand side substitutability of Ethernet based wireless LLs and wired Ethernet LLs. Therefore, the data and analysis on single and multi-site customers, presented in this Section, will include both wired and wireless circuits and revenues.
- 3.76 4 Respondent's Submissions (BT, Eircom, enet and Vodafone) to the 2018 Further Consultation also included comments on this topic. 3 (BT, enet and Vodafone) were in support of ComReg's conclusions in the 2018 Further Consultation regarding the importance of multi-site customers, while one Respondent (Eircom) disagreed (see Appendix A.1.2¹⁴⁷ for more details).
- 3.77 ComReg has identified retail customers with three or more addresses as constituting multi-site customers. Those customers with only 2 or less non identifiable addresses were designated as single-site customers.¹⁴⁸

Figure 17: Single and Multi-site Customers



¹⁴⁷ Paragraphs A1.17 to A1.27.

¹⁴⁸ See Annex 3, paragraphs A3.42 to A3.44, for more details on the methodology governing the determination of this list.

3.78 Figure 17, above, shows that the majority of customers are single-site customers in all years examined, accounting for 79% of customers in 2014 and falling to 72% in 2017. Between 2014 and 2017 the number of multi-site customers increased from 525 in 2014 to 851 in 2017, a growth rate of 62%, compared to a growth rate of 10% for single site customers.

Figure 18: Single and Multi-site Wired and Wireless Circuits

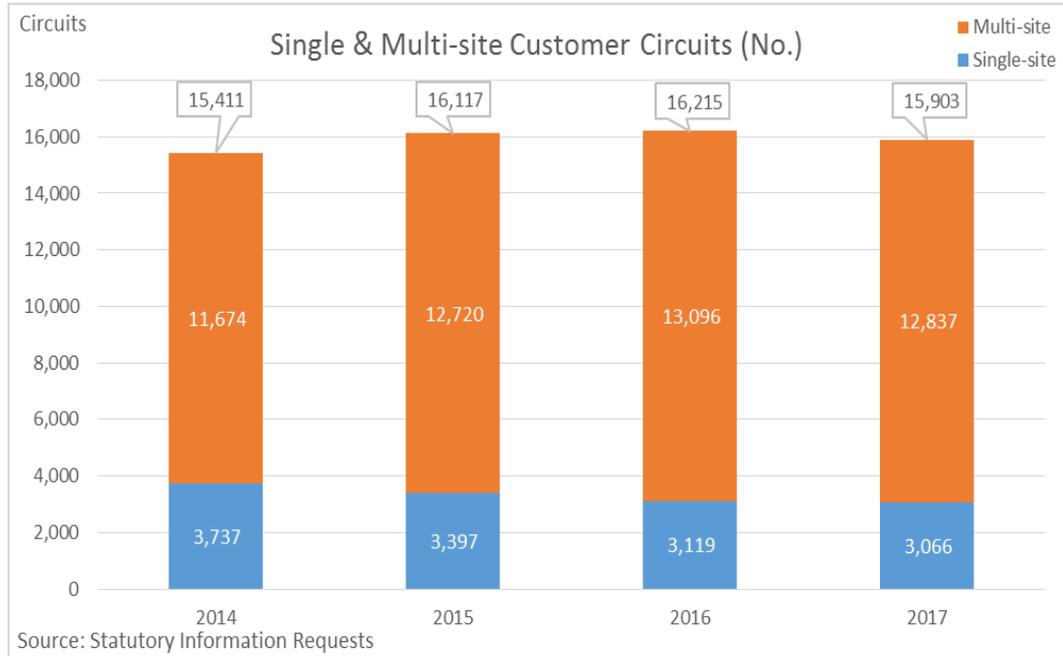
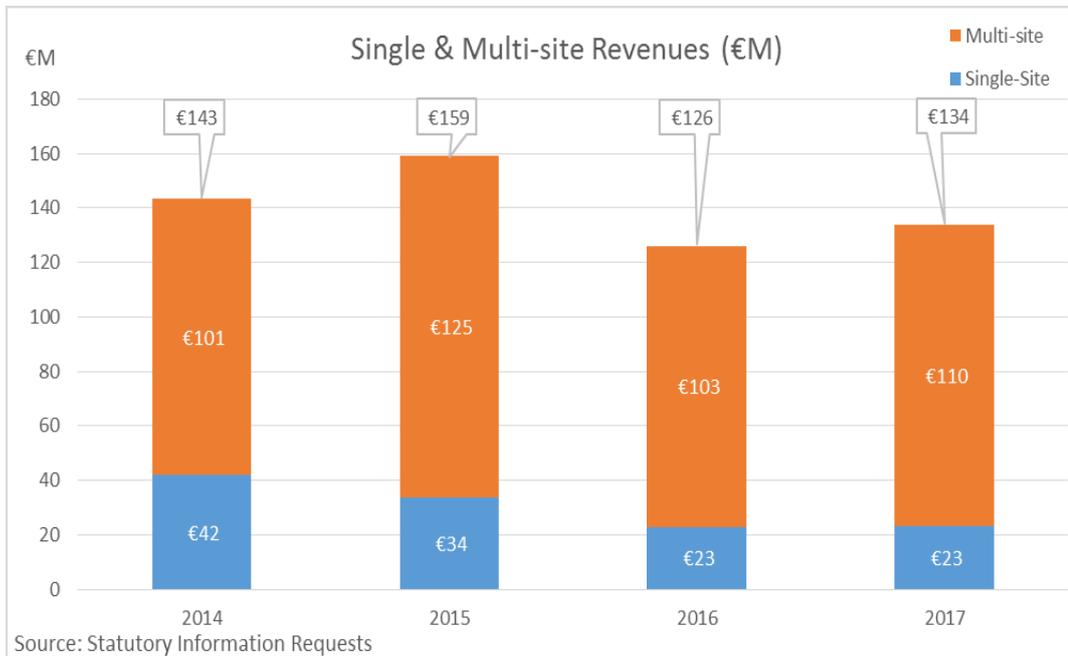


Figure 19: Single and Multi-site Wired and Wireless Revenues



- 3.79 An examination of the split of wired and wireless retail circuits and revenues between single and multi-site customers highlights the significance of the latter group, as demonstrated in Figure 18 and Figure 19, above. These figures show that multi-site customers account for a growing share of circuit volumes, having risen from 76% of all circuits in 2014 to 81% in 2017, and with revenues also increasing from 70% in 2014 to 82% in 2017. It is evident that multi-site retail LL customers therefore play a very important role in the retail LL market having regard to their high share circuit volume and revenue terms.
- 3.80 ComReg has assessed the preferences of multi-site customers for wired over wireless LLs into the retail market assessment, see Section 4 of this Decision¹⁴⁹. This assessment has concluded that wireless Ethernet LLs are not likely to be an effective substitute to wired Ethernet LLs circuits and are therefore not included in the retail LL market definition.

Migration from Analogue and TDM (Traditional Interface (TI)) to Ethernet, xWDM and other advanced (Modern Interface (MI)) based LL services¹⁵⁰

- 3.81 Another noteworthy trend since the 2008 Decision has been an overall increase in demand for MI retail LL services (such as Ethernet and xWDM) and a steady but now slowing decline in TI¹⁵¹ retail LL services (Analogue and TDM). At the time of the 2008 Decision, only TI retail LL services were reported under ComReg's QKDR and the average number of leased line circuits for 2008 was 10,757¹⁵².
- 3.82 As noted in Annex A.1.2¹⁵³, there was only one Respondent (BT) to this topic and it supported ComReg's preliminary conclusions.

¹⁴⁹ See paragraphs 4.122 to 4.129 of this Decision.

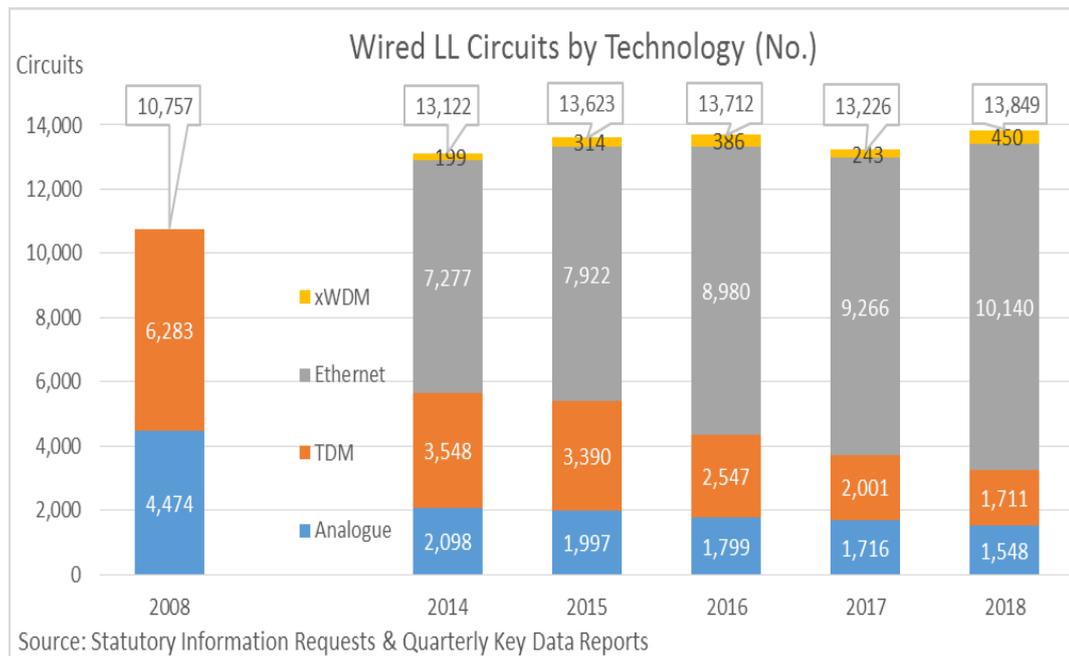
¹⁵⁰ In Section 5 of this Decision, ComReg defines 3 broad wholesale product markets; a Low Bandwidth TI WHQA Market that includes TDM, analogue and digital LLs at bandwidths ≤ 2 Mb/s; a High Bandwidth TI WHQA Market that includes TDM, analogue and digital LLs at bandwidths > 2 Mb/s; a Modern Interface WHQA Markets that includes LLs provided over Ethernet, EFM, xWDM and other modern interfaces over a wired media.

¹⁵¹ Traditional Interface refers to interfaces such as Analogue, Digital and TDM interfaces.

¹⁵² Utilising and cleaning Wired SP submissions to the Q1 to Q4 2008 Quarterly Key Data Report.

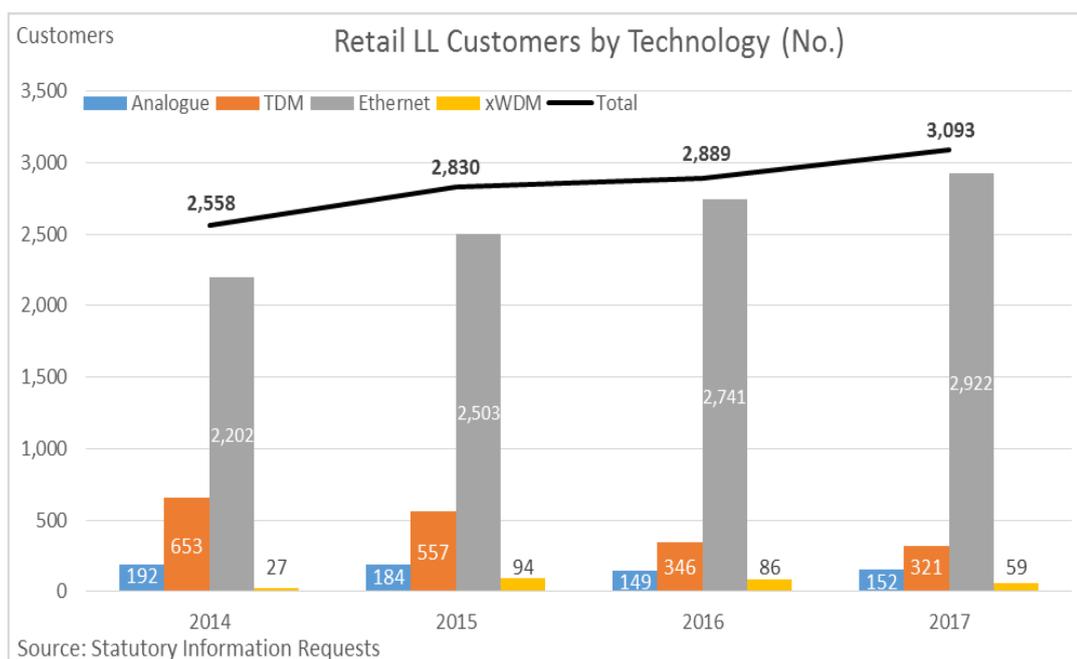
¹⁵³ See paragraph A1.8 in this Decision.

Figure 20: Wired Retail LL by technology



3.83 Figure 20 above, illustrates two very different trends, namely significant growth in the consumption of Ethernet and xWDM lines and a steady decline in analogue and TDM circuits. The former represents significant improvements in LL access technologies, as well as the nature of the services and products being supplied using these access technologies. In 2008 the majority of LLs employed were analogue and TDM circuits connected between customer premises or connected to various services such as Internet Access ('IA'), Frame Relay ('FR'), Asynchronous Transport Mode ('ATM') or Multiprotocol Label Switching ('MPLS') (these various technologies provide enhanced services overlaid on the physically connected leased lines). These LLs were used to provide connectivity services between customer premises or access to the internet.

3.84 As highlighted in Figure 20 above, the number of legacy TI based retail LL is in decline. There were fewer than 25 new retail TI lines delivered in 2018 across the entire market. New demand now has shifted almost entirely to Ethernet and xWDM access technologies. The number of TI LL circuits has fallen between 2008 and 2018 by over two thirds (nearly 7,500 circuits). Between 2014 and 2018 the number of MI LL circuits has increased by over 40% (3,114 circuits). Thus, Ethernet (and equivalent technologies) has become the most common access technology, accounting for 73% of all retail LL circuits in Q4 2018.

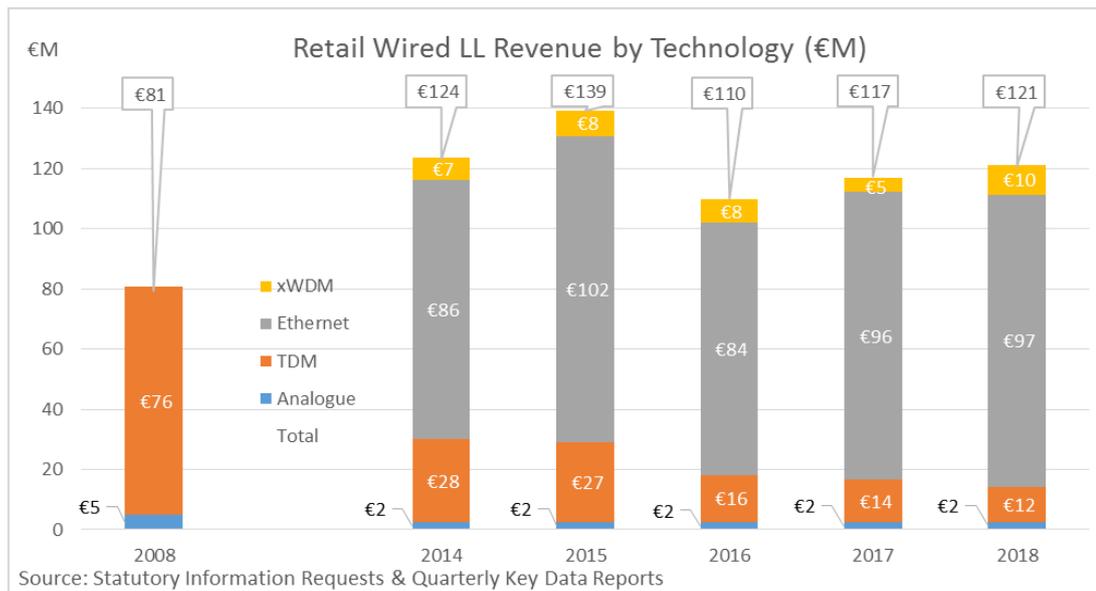
Figure 21: Retail LL Customers by Technology (Wired and Wireless)

- 3.85 Figure 21¹⁵⁴ above shows that the majority of customers purchase Ethernet LLs and that this has risen from 86% of all customers in 2014 to 94% of customers in 2017. Over the same period, Analogue and TDM customer numbers have declined, representing 8% and 26% respectively in 2014 and falling to 5% and 10% respectively in 2017. xWDM customer numbers remain low and have varied over the period, from 1% of customers in 2014 to a maximum of 3% in 2015 and subsequently 2% in 2017¹⁵⁵.

¹⁵⁴ The cumulative percentage total of all technologies in each year will exceed 100% as some customers purchase more than one type of technology.

¹⁵⁵ This is explained by the manner by which some SPs have categorised such high bandwidth services with some having changed the technology designation of high-speed circuits from year to year.

Figure 22: Retail Wired LL Revenue by Technology

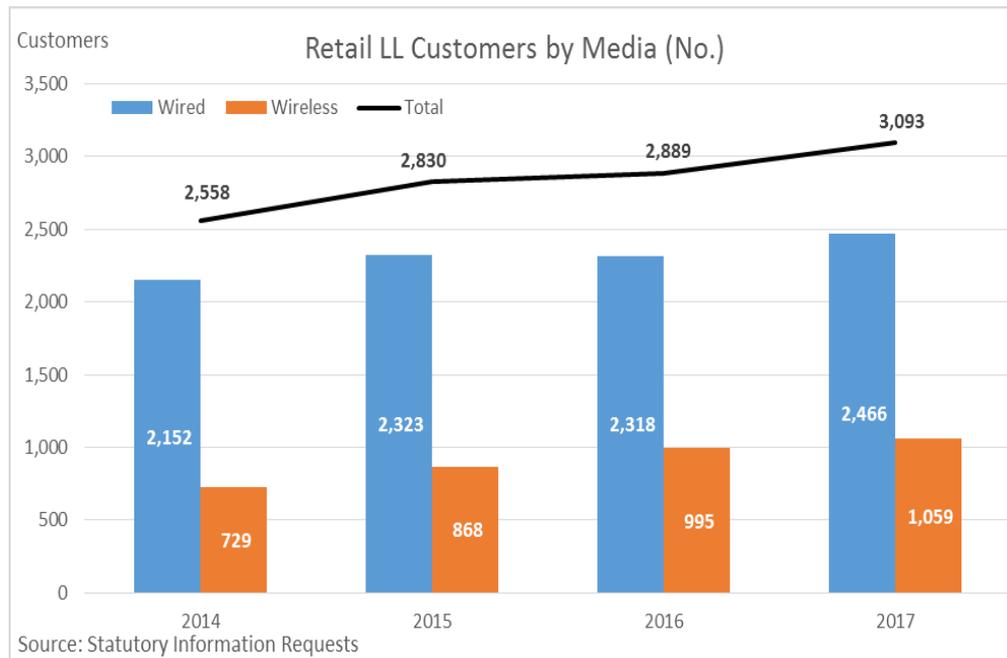


- 3.86 Following the trend in circuit numbers, Figure 22 shows that retail LL revenues are dominated by Ethernet, representing 69% in 2014 and rising to 80% in 2018. TDM revenues represented 94% of retail sales in 2008, declining to 23% in 2014 and declining further again to 10% in 2018. Analogue has also declined over this period, although not as dramatically, from 6% in 2008 to under 2% in 2014 and then stabilising up to 2018. xWDM revenues have varied slightly between 2014 and 2018, representing 6% in 2014 and 8% in 2018.

Demand for LLs over different media (wired vs wireless)

- 3.87 A number of different media are used to deliver retail LLs including copper, fibre and wireless (point to point microwave radio links). A number of responses (Airspeed, ALTO, enet and Vodafone) to the 2016 Consultation disagreed with the inclusion of wireless LLs as a substitute to wired LLs in the retail market¹⁵⁶. Copper and fibre has been grouped together under the heading “wired” LLs. These require a cable connecting the retail users premise to the SP’s network whereas, P2P wireless LLs are delivered by means of placing antennae at each end of the link. The trends in demand for both groups are discussed below.

¹⁵⁶ See ComReg 18/08, paragraphs 3.36 to 3.39.

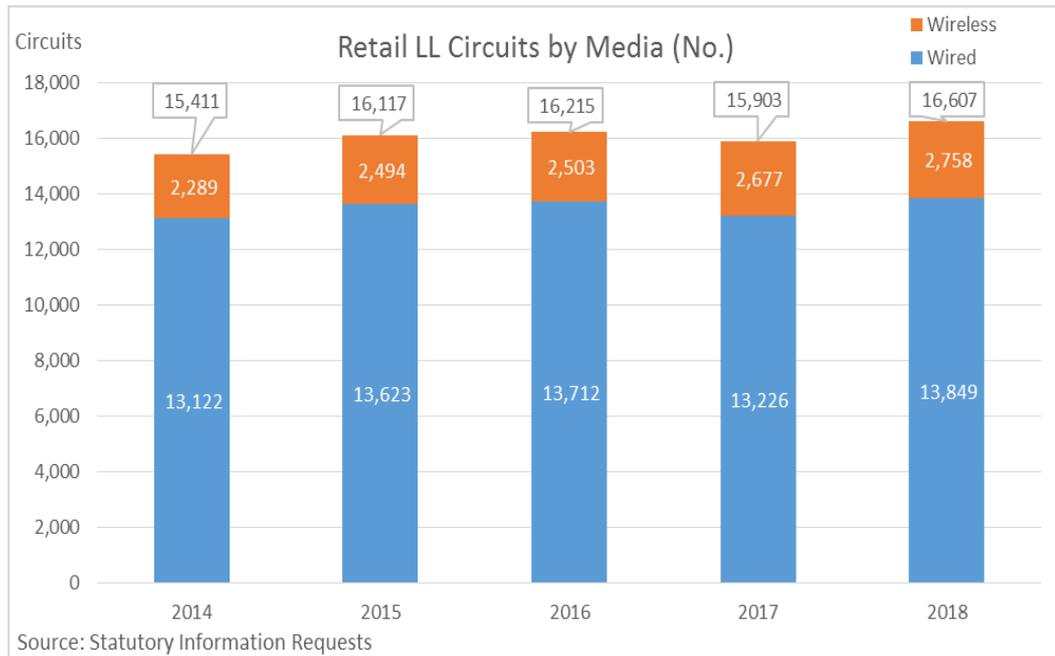
Figure 23: Retail LL Customers by Media Type¹⁵⁷

3.88 Figure 23 above, shows that over the period 2014-17 the number of customers purchasing wired and wireless LLs has increased, along with the overall increase in customer numbers. In 2017, 80% of all customers purchased wired LLs and this represents a decline of less than 5% from 2014. In contrast, the shares of wireless customers has increased over the same period by over 5%, to 34%¹⁵⁸ in 2017.

¹⁵⁷ Customers who consume both wired and wireless LLs will be counted in each category.

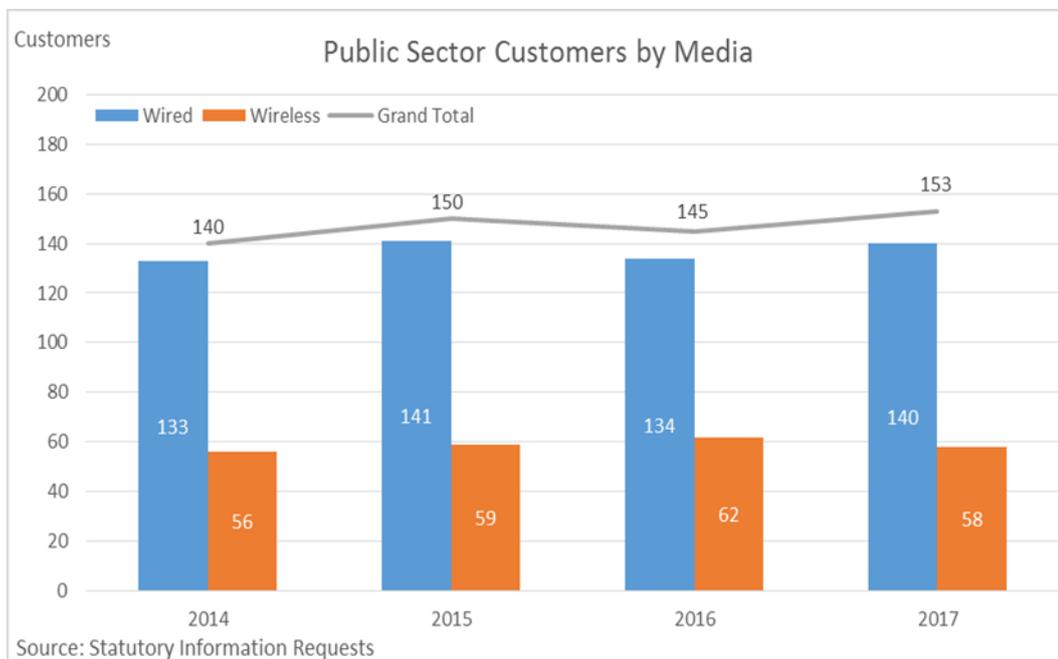
¹⁵⁸ The shares of both wired and wireless customers each contain a certain amount of customers in both categories i.e. customers that consume both wired and wireless LLs.

Figure 24: Retail LL Circuits by Media Type



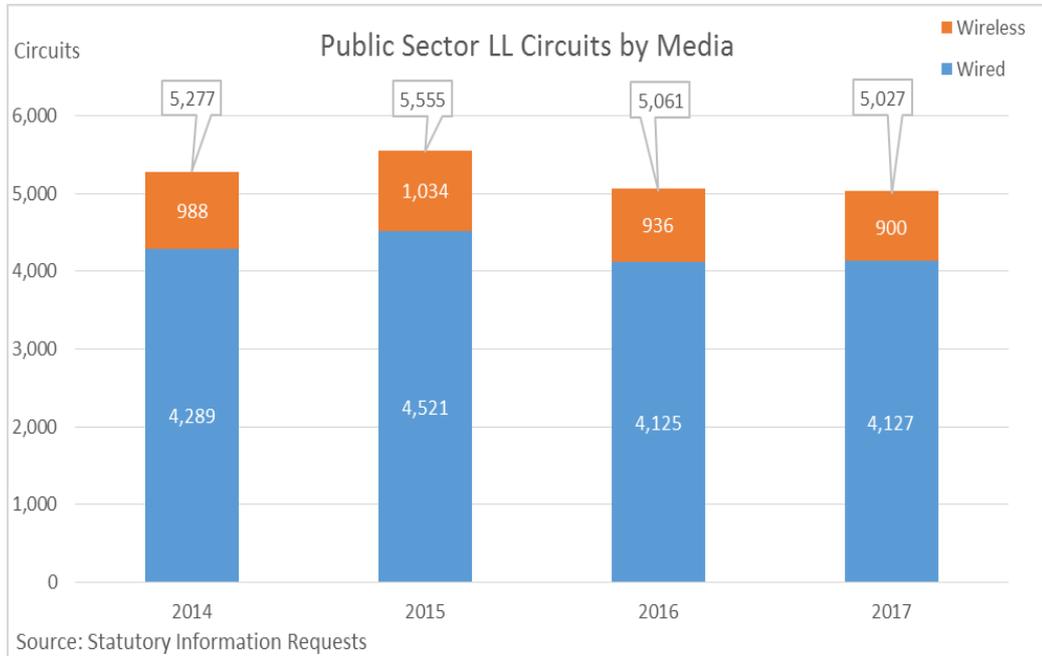
3.89 When examining the number of circuits purchased through each media, as demonstrated in Figure 24 above, the prevalence of wired LLs in the retail market can be seen. Wired circuits represented 85% of all retail circuits in 2014, declining slightly to 83% in 2018.

Figure 25: Public Sector Customers by Media



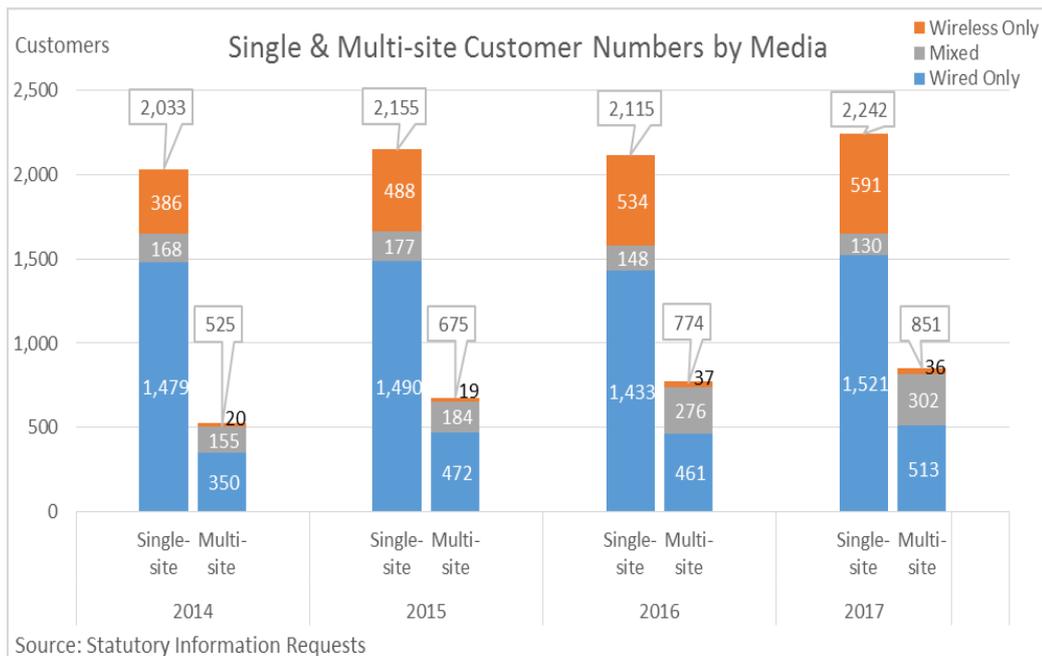
3.90 When examining the media used by the public sector retail LL customers, as Figure 25 shows, there is a greater overlap of customers consuming wired and wireless products – with 93% consuming wired LLs and 40% consuming wireless LLs in 2017, compared to the results for all retail customers as a whole.

Figure 26: Public Sector LL Circuits by Media



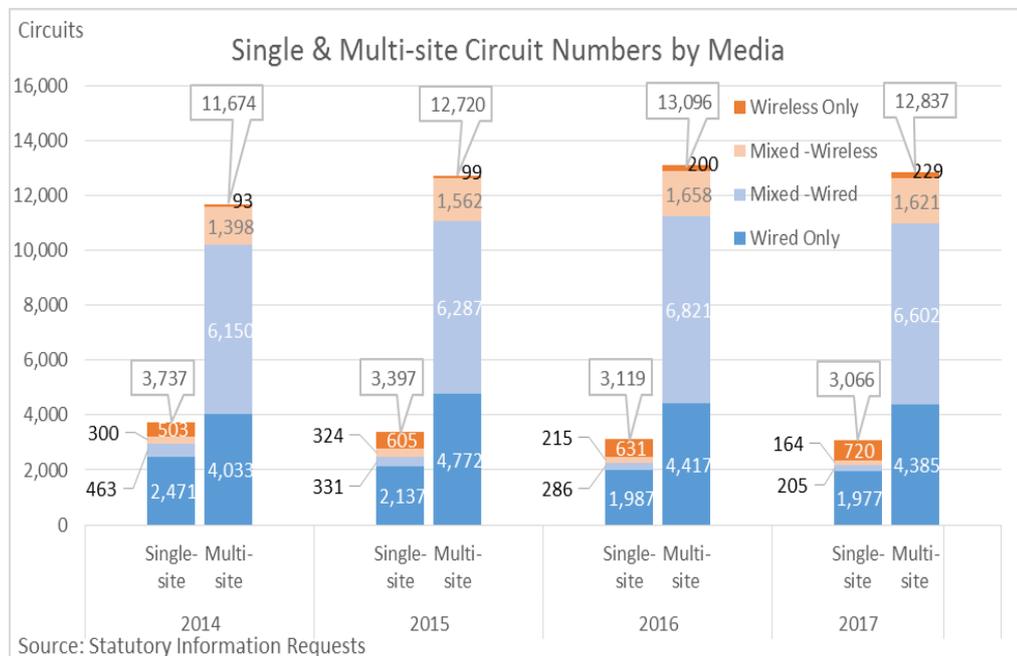
3.91 Figure 26 shows that, in terms of public sector circuits purchased, the split is practically the same as that for all customers as seen in Figure 24, with the share of wired circuits 81% in 2014 rising to 82% in 2017.

Figure 27: Single and Multi-site Customer Numbers by Media



3.92 Figure 27 breaks down the media use of single and multi-site customers into three categories; those consuming wired-only LL circuits; those consuming a mix of wired and wireless LL and finally wireless-only LL circuits. This shows that the majority of both customer groups are those who purchase wired-only LL circuits, 73% (67%) in 2014 falling to 68% (60%) in 2017 for single-site (multi-site) customers. The share of single site customers consuming a mix of media has fallen slightly from 8% in 2014 to 6% in 2017. In contrast, multi-site customers of mixed media has grown from 30% in 2014 to 35% in 2017. Finally, wireless-only consumers represent a greater share of single-site customers compared to multi-site customers. In 2014, the share of single-site customers consuming only wireless-only LLs was 19% which increased to 26% in 2017, while the equivalent share for multi-site customers has stayed relatively unchanged over the same period at 4%.

Figure 28: Single and Multi-site Circuit Numbers by Media Type



3.93 Figure 28 shows that by circuit volumes, multi-site customers are the most significant customer group, as highlighted earlier in the Section above on Customer Profiles¹⁵⁹. There are four media categories in this figure compared to the three used in Figure 27. This is to facilitate the pairing of the wired versus wireless circuits under the mixed category of customers, in order to obtain an overall split of wired versus wireless consumption by customer group.

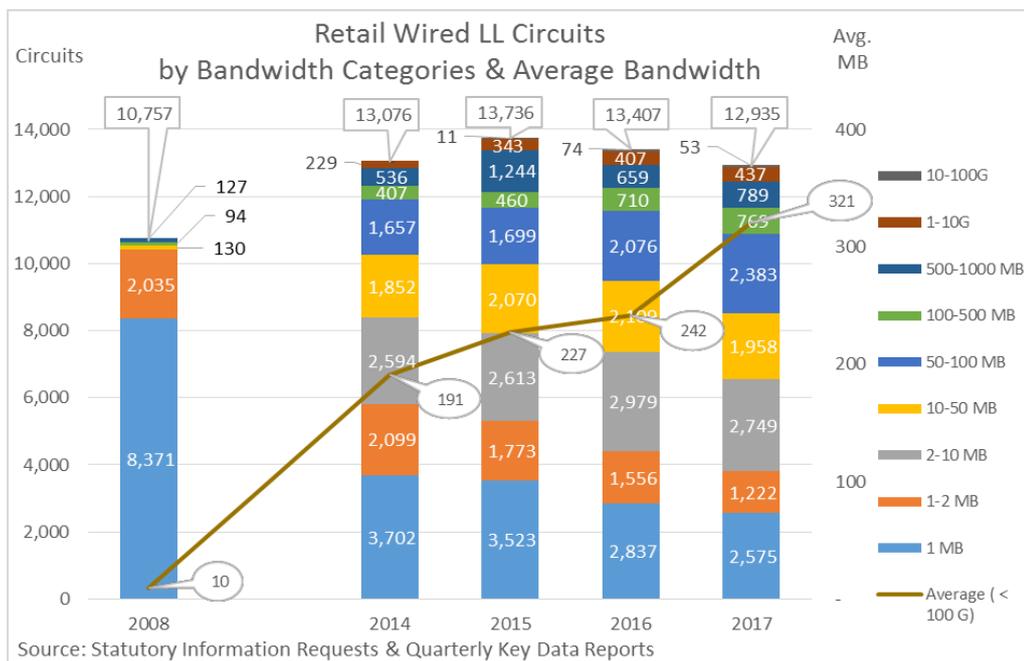
¹⁵⁹ See paragraphs 3.73 to 3.80 above.

- 3.94 For single-site customers, the majority of circuits are purchased by those who only use wired LL circuits, representing between 66% in 2014 and 64% in 2017 of total circuit volume. Those that consume LLs through a mixture of media made up between 20% in 2014 and 12% in 2017 of single-site consumption, the majority of which was wired over the period. The share of wireless-only consumption by single-site customers grew from 13% in 2014 to 23% in 2017. Overall, single-site customers purchased more wired than wireless LL circuits. Wired circuits represented between 79% in 2014 and 71% in 2017 of all circuits consumed.
- 3.95 When examining the consumption of circuits by multi-site customers, (who consume between three and four times as many circuits as single site customers), those that use a mixture of media (the combination of 'Mixed – Wired' and 'Mixed – Wireless' in Figure 28) are the largest subgroup in this customer category. They account for between 65% in 2014 and 64% in 2017 of circuits purchased by multi-site customers, of which over 80% were wired. Those consuming wired-only LL circuits represent between 35% in 2014 and 34% in 2017 of purchases. Finally, wireless-only multi-site consumers are the smallest of all subgroups, representing just between 1% in 2014 and 2% in 2017. Overall, all wired purchases by multi-site consumers accounted for 87% in 2014 and 86% in 2017 of consumption.
- 3.96 Across both categories of consumers there appears to be a strong preference for wired versus wireless LL circuits. This is especially so for the multi-site customers, who are the most significant purchasers of LLs and only 1-2% of them consume only wireless LLs.
- 3.97 Overall this Section has examined breakdown of wired and wireless LL consumption trends of different retail customer groups and retail consumers as a whole. This shows that while there has been a 5% growth in the share of customers that purchase wireless LLs between 2014 and 2017, this has only translated into a 2% increase in the share of retail LL circuits over the same period, representing a total of just 17% in 2017. When we examined different customer groups we found a similar trend for the public sector consumers but greater differences between single and multi-site customers. The latter group represent a smaller share of consumers but the vast majority of retail LL purchases and they purchased a higher share of wired circuits compared to retail customers as a whole. This would indicate a general preference in the retail market for wired over wireless LLs.

Demand for Higher Bandwidth Services

3.98 The continuous growth in data usage by End Users is resulting in an increasing demand for higher bandwidth LL services. For example, HEAnet notes that data traffic consumed by secondary schools is growing by more than 250% year-on-year¹⁶⁰. This is not unexpected as the general trend is for continuous growth in data traffic in electronic communications markets in general. For example, the annual growth in data volumes generated over mobile networks was 56.6% at the end of Q1 2019. Such greater demands mean that more higher bandwidth LLs are needed to service this mobile customer demand.¹⁶¹

Figure 29: Retail Wired LL Circuits by Bandwidth Categories and Average Bandwidth¹⁶²



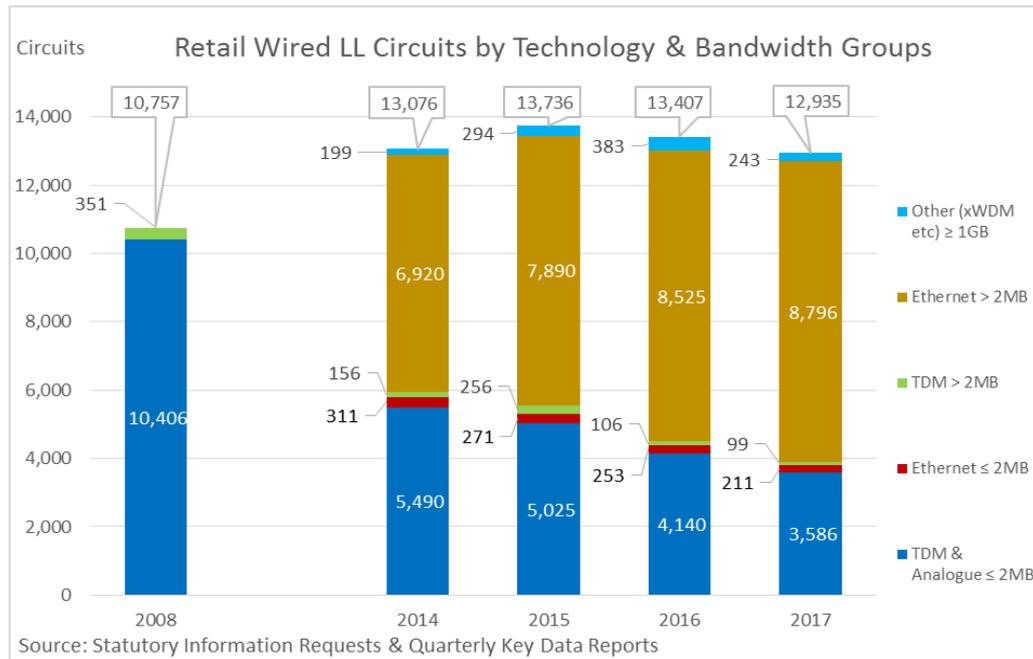
3.99 Figure 29, above, highlights this trend, in particular the trend in the average bandwidth of wired LL circuits purchased for the year 2008 and over the period 2014-17. The average bandwidth of circuits has increased from approximately 10 Mb/s in 2008, to just over 320 Mb/s in 2017, representing a 32 fold increase over the period.

¹⁶⁰ See <http://www.heanet.ie/wordpress/wp-content/uploads/2014/12/FINAL-HEAnet-Infographic.pdf>.

¹⁶¹ See page 60 in [ComReg Quarterly Key Data Report, Q1 2019](#).

¹⁶² Bandwidth is calculated using the logical bandwidth, when there are associated physical and logical circuits. When there are only physical circuits sold, then the physical bandwidth is used. Overall the total number of circuits are within 2% of total number of physical circuits for each year.

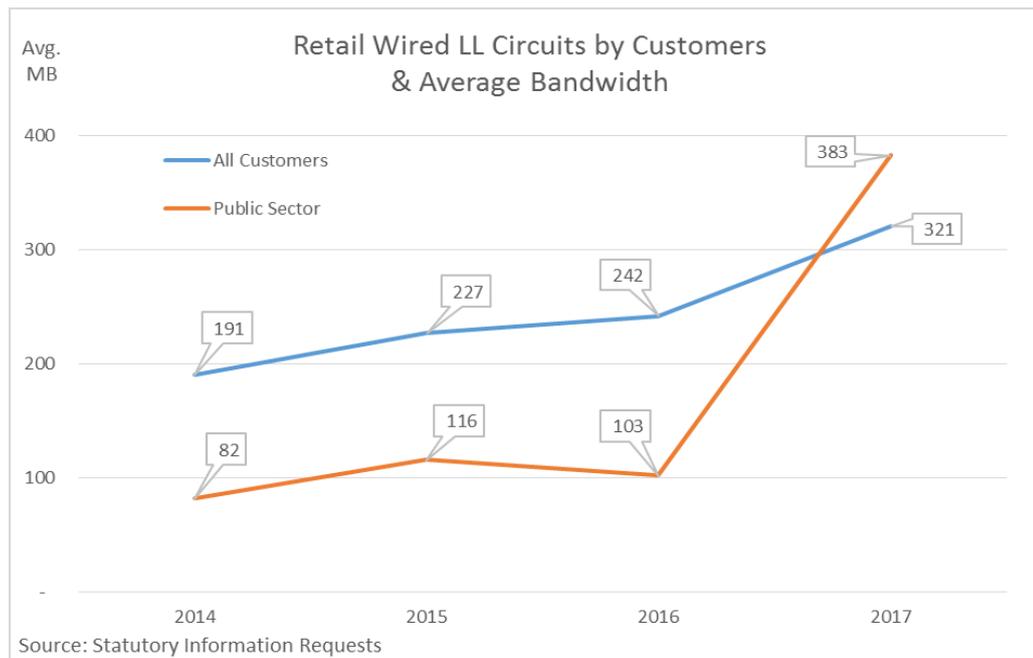
Figure 30: Retail Wired LL Circuits by Technology and Bandwidth



3.100 In 2008 the majority of LL circuits were delivered over analogue and TDM technologies and 97% were at bandwidths of 2Mb/s or less, as illustrated in Figure 30. This has changed in the intervening years such that, in 2017, 68% of wired LLs circuits are now delivered over Ethernet technologies and are provided at bandwidths above 2Mb/s.

3.101 Similarly, the number of very high bandwidth Ethernet and xWDM circuits at capacities of 10 Gb/s or more has doubled to just under 300 circuits between 2014 and 2017.

Figure 31: Retail Wired LL Circuits by Customers and Average Bandwidth



- 3.102 Figure 31 compares the average bandwidth consumption of public sector customers with the average for all customers. Between the years 2014 to 2016 on average public sector customers had bandwidth speeds (approximately 100Mb/s) that were half that of all customers (approximately 220 Mb/s). This changed significantly in 2017 when on average public sector customers consumed higher bandwidths (383 Mb/s) than the average for all customers (321 Mb/s). This is driven by a significant increase in the number of 1Gb/s and above circuits consumed using Ethernet and xWDM technology by public sector consumers.
- 3.103 Overall, since the 2008 Decision we have seen dramatic growth in the bandwidth of LLs consumed by retail customers, increasing 32 times in the intervening decade. This change has been facilitated by a change in the technology used by retail customers, from analogue and TDM primarily to Ethernet as discussed in the earlier Section. Recent years have also seen significant growth in the very high bandwidth LLs, 10 Gb/s and above, used by retail customers, albeit small in the context of the overall retail LL market.

Bundling of LLs services with other services

- 3.104 At the time of the 2008 Decision End Users were purchasing retail LL as discrete access elements for data connectivity services connecting business premises with such services, primarily orientated to large companies and public service agencies.
- 3.105 The change in retail LL access technologies has fostered the proliferation of cloud services, various e-Commerce services, backup facilities and other retail services such as Software as a Service ('SaaS') which are now being offered to business of varying sizes on a consumable basis (i.e. on a "pay-as-you-go" basis) and are commonly sold together with retail LL services.
- 3.106 The 2014 Market Research indicated that 56% of surveyed LL service purchasers buy LLs as part of a wider package, whereas 44% purchased it as a standalone product¹⁶³. This trend has continued, with the range of services available over LLs increasing over time and the amount of bandwidth needed to provide these services also increasing, as can be seen in average bandwidth consumed in Figure 29, which shows continual annual increases. Section 3.4 outlined the network infrastructure developments that have contributed to usage of higher speed retail LLs.

¹⁶³ The 2014 Market Research, Slide 106.

- 3.107 These developments have resulted in a greater concentration of IT infrastructure in large data centres in Ireland. Data centres, in the broadest sense, are premises whose main purpose is to house computing and communications equipment in secure locations and provide numerous computing offerings at the service layer¹⁶⁴. These require high capacity retail LLs to carry data between the customers' premises and 3rd party data services and corresponding facilities. These sites tend to have multiple tenants and may be owned and operated by SPs and/or run by third-party providers that are "carrier-neutral"¹⁶⁵ such as Telecity¹⁶⁶, Interxion¹⁶⁷, Servcentric¹⁶⁸ etc. or "private" data centres operated by content, cloud and hosting providers (e.g. Amazon, Google, IBM, HP, etc.).
- 3.108 Data centres operate at a scale which ensures that the key requirements for IT systems such as power, cooling and security are delivered to multiple customers at a uniform high quality. They have become major telecommunications hubs in order to provide access to the IT services utilising them. As LL SPs extend their IT core infrastructures to data centres, they become the hubs of their customers' wide-area networks ('**WAN(s)**') and are thereby, major sources and aggregation points for traffic on their networks. The SPs connected to data centres may service the wholesale and retail customers located within the data centre and as such, customers can readily switch between SPs without having to physically move their servers and other equipment.

Conclusion

- 3.109 The number of retail LL customers have been growing at approximately 8% a year between 2014 and 2017. An examination of the profile of these customers, using a sample, showed that 5 level 1 NACE codes (C, G, J, K and M)¹⁶⁹ are the categories that dominate in terms of customer numbers and the number of LLs purchased.

¹⁶⁴ Such as cloud computing services; SAAS (Software As a Service); Hosting; Payment services etc.

¹⁶⁵ Carrier-neutral data centre is a data centre or carrier hotel which allows interconnection between multiple telecommunication carriers and/or colocation providers and allows SPs to offer services to all customers within the data centre. It is usually (though not in all cases) operated and owned by a business entity other than a SP.

¹⁶⁶ See <http://www.telecitygroup.ie/>.

¹⁶⁷ See <http://www.interxion.com/>.

¹⁶⁸ See <https://www.serventric.com/>.

¹⁶⁹ (C) Manufacturing; (G) Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycle; (J) Information and Communication; (K) Financial and Insurance Activities and (M) Professional, Scientific and Technical Activities.

- 3.110 The number of retail LL customers that are from the public sector is relatively small at approximately 5% but account for significantly large share of the total retail LLs sold, at around a third. This group is dominated by some of the largest consumers of retail LLs, with the top ten public sector organisations purchasing 70% of the circuits consumed by this sector¹⁷⁰. In recent years the average bandwidth LL consumed by the public sector has increased significantly, overtaking the average bandwidth consumed across all consumers.
- 3.111 Multi-site customers are another group of customers who at just under 30%, represent a minority of all retail LL customers. They do, however, account for 80% of all circuits purchased and a similar share of total LL revenues. Therefore, multi-site customer preferences are likely to have a considerable influence in the market. This can be seen from an examination of the analysis of the different media used to deliver LLs, in particular the preference of multi-site customers for wired over wireless LLs.
- 3.112 There has been a noticeable migration in the technology used by retail customers since the 2008 LL Decision from analogue and TDM to primarily Ethernet. In 2017 94% of all retail customers utilised Ethernet LLs, while only 5% to 10% still utilised the former technologies. In terms of circuits and revenues Ethernet accounted for approximately 80% of all retail LLs.
- 3.113 The data also demonstrated the growth in demand for higher bandwidth LL circuits over time, which likely coincides with the general trend for growth in data consumption over time, and a move to technologies such as Ethernet that more easily facilitate LL bandwidth growth. The change in retail LL access technologies from TI to MI services supports the proliferation of cloud services, various e-Commerce services, backup facilities and other retail services. Finally, there has been a move from LLs purchased primarily as connectivity between premises to greater association with a wider network solution or telecoms and service layer package/ bundles.

¹⁷⁰ Accounting for over 20% of all retail circuits consumed.

4 Retail Market Assessment

4.1 Overview

- 4.1 In this Section ComReg examines the primary structural and behavioural characteristics in the provision of retail LLs with this feeding into its assessment of the main retail LL markets which are likely to be of most relevance to the assessment of the upstream WHQA markets. ComReg is not required to arrive at a precise definition of the retail LL markets for the purposes of deciding whether regulation of the WHQA markets is appropriate, but is doing so to inform the definition and assessment of competition in the WHQA markets. This includes the assessment of the strength of any indirect constraints imposed on these WHQA markets by the downstream retail LL markets¹⁷¹.
- 4.2 In summary, having assessed the retail LL market(s), ComReg maintains its position as set out in the 2018 Further Consultation that there are likely to be three separate retail LL markets, namely:
- (a) Low Bandwidth Traditional Interface ('**TI**') Retail LL Market consisting of all retail leased lines carried over analogue, digital and TDM interfaces with bandwidths of $\leq 2\text{Mb/s}$, with this market being national in its geographic scope (the '**Low Bandwidth ('LB') TI Retail LL Market**');
 - (b) High Bandwidth TI Retail LL Market which consists of all retail leased lines provided over a TDM interface with bandwidths $> 2\text{Mb/s}$, with this market being national in its geographic scope (the '**High Bandwidth ('HB') TI Retail LL Market**'); and a
 - (c) Modern Interface ('**MI**') Retail LL Market consisting of all retail leased lines carried over modern interfaces such as Ethernet, EFM, xWDM and other modern interfaces, with this market being national in its geographic scope (the '**MI Retail LL Market**');
- 4.3 The above product markets (together referred to as the '**Relevant Retail LL Markets**') do not include wireless LLs due to the lack of effective supply and demand side substitutability between wired and wireless LLs, however ComReg recognises that wireless LLs do meet the needs of some end-users;

¹⁷¹ Indirect constraint might arise in the provision of WHQA if (1) purchasers of WHQA pass on wholesale price increases to retail LL customers through retail price increases and (2) consumers were aware of, and responsive to these retail price changes and (3) a sufficient number of these customers were likely to switch to alternative modes of communication in response to retail price increases (not the retail arm of the WHQA provider) such that the wholesale price increase was unprofitable. In which case, indirect constraints could act to effectively constrain the wholesale price-setting behaviour of a Hypothetical Monopolist ('**HM**') supplier of WHQA services.

- 4.4 Asymmetric business broadband is not considered an effective substitute for a retail LL due to the likely lack of effective supply and demand side substitutability between the products. Although a certain cohort of End Users may consider business broadband a substitute, it is not sufficient to act as an effective competitive constraint on the retail (or wholesale) LL markets. For instance, broadband speeds delivered at the End Users' premises generally reduce as the distance between the subscriber and local exchange increases i.e. the broadband advertised "headline" speeds are not guaranteed at the customer premises. Additionally, there are superior enhanced SLAs available for leased lines compared to those for broadband services¹⁷².
- 4.5 Furthermore, passive infrastructure, such as Dark Fibre, is not considered to be an effective substitute for a retail LL due to, amongst other things, the investment and expertise needed to provide retail LL using such passive infrastructure.
- 4.6 The geographic scope of the Relevant Retail LL Markets is National, but there are subnational geographic markets for the provision of MI WHQA products, with this assessed in the context of the MI WHQA Markets definition in Section 5 below.

4.2 Introduction

- 4.7 This Section provides the supporting analysis for the retail LL market assessment outlined above. This follows a similar structure to Section 4, 'Retail Market Assessment', of the 2016 Consultation together with the revised assessments included in Section 3, 'Retail Market Developments, Trends and Assessment', of the subsequent 2018 Further Consultation.
- 4.8 The retail market assessment originally presented in the 2016 Consultation and the 2018 Further Consultation have been updated to include data for 2017, as submitted to ComReg by LL SPs in response to the 8th December 2017 SIR. ComReg has also combined this data with previous data submissions from SPs to create a retail market database spanning the years 2014 to 2017. This has enabled ComReg to expand previous analysis presented in the 2016 Consultation and the 2018 Further Consultation to see the trends over these years.
- 4.9 Of the 7 Submissions received to the 2018 Further Consultation, 5 Respondents (ALTO, BT, Eircom, enet and Vodafone) expressed views on the Retail Market Assessment component of Section 3 of the 2018 Further Consultation. 2 Respondents (Verizon and Zayo) did not comment.

¹⁷² Openeir's Master Plan Plus NGN Ethernet SLA offers 8 hour repair on a 24 hour, 365 day basis whereas its Standalone Broadband Prioritised Repair Services offers 1 day repair only on a 9 to 5, Monday to Friday basis. Both available at www.openeir.ie.

- 4.10 In Annex 1, Section A.1.3 of this Decision, ComReg summarises the main views of these 5 Respondents on Section 3 of the 2018 Further Consultation. This also includes ComReg's assessment of these views.
- 4.11 Where appropriate, ComReg highlights the themes arising from Respondents' views to the 2018 Further Consultation directly in this Section 4.
- 4.12 This Section provides a summary of the background consultations and the detailed rationale supporting the conclusions set out in paragraphs 4.2 to 4.6 above, as well as the market shares in each of the Relevant Retail LL Markets, are as follows:
- (a) **Background – WHQA Consultations:** this summarises ComReg's preliminary views as set out in the 2016 Consultation and revisions included in the 2018 Further Consultation (see Section 4.3, paragraphs 4.15 to 4.23 below);
 - (b) **Product Market Definition:** this examines the demand side and supply side substitution effects of different retail LL products as well as other products in adjacent markets to retail LLs such as business broadband and dark fibre (see Section 4.4, paragraphs 4.24 to 4.213),
 - (c) **Bandwidth Breaks in the Main Products:** this looks at the demand and supply side substitution effects of different bandwidth capacity for each of the product markets identified above (see Section 4.5, paragraphs 4.214 to 4.231 below),
 - (d) **Geographic Market Definition:** this explores the demand side and supply side substitution effects of different geographic areas for each of the products identified above in the assessment of bandwidth breaks (see Section 4.6, paragraphs 4.232 to 4.263 below), and
 - (e) **Market Shares:** this examines the SPs market shares in each of Relevant Retail LL Markets (see Section 4.7, paragraphs 4.264 to 4.267 below).
- 4.13 Following the product, bandwidth and geographic market assessments there is a conclusion and summary on the Relevant Retail LL Markets in Ireland.

- 4.14 As part of the above assessments, ComReg has considered evidence from a number of sources as outlined in Section 2.6 above. ComReg has used this information to inform its retail analysis, alongside the consideration of other information as is identified in this Section¹⁷³. In addition, given the absence of the availability of clear and precise data regarding elasticities of demand for retail LLs (the narrowest retail service driving demand for the focal product at wholesale level) and potential substitutes, ComReg considers the Hypothetical Monopolist Test ('HMT')¹⁷⁴ in a general sense. It then uses this as an additional tool to help inform its consideration of relevant issues alongside other available qualitative and quantitative data.

4.3 Background - WHQA Consultations

2016 Consultation

- 4.15 Section 4, Retail Market Assessment, of the 2016 Consultation outlined ComReg's preliminary opinion on the likely scope of the retail LL market from a product and geographic perspective. The assessment was examined in three parts, as follows:
- (a) Initial considerations of relevance to the likely scope of the retail LL market(s)
 - (b) Retail LL Product Market Assessment; and
 - (c) Geographic Assessment of Retail LL markets.
- 4.16 The initial considerations included an assessment of the substitutability of retail LLs, over a wired medium including all technology categories, with 1) parallel markets, business broadband and Ethernet First Mile ('EFM'); 2) retail LLs delivered over a wireless medium and 3) an upstream market, Dark Fibre. Following this assessment ComReg's preliminary view was that EFM and retail LLs over a wireless medium were a substitute to wired retail LLs. Business Broadband and Dark Fibre were not considered substitutes to wired retail LLs.

¹⁷³ This includes: responses to SIR for various years; QKDRs; 2014 Market Research; 2017 Market Research; 2016 OXERA Report and Interviews with End-users of LLs.

¹⁷⁴ The hypothetical monopolist test ('HMT') involves observing the response to a small but significant non transitory increase in price ('SSNIP') in the price of the focal product. If a significant number of customers switch to an alternative product, making the price increase unprofitable, then the alternative product is also included in the relevant product market.

4.17 The retail product assessment commenced by selecting retail LLs using Ethernet technology as the focal product. A SSNIP Test was carried out using this focal product against a range of other LL technologies including TDM, Analogue, xWDM and other high bandwidth interfaces. Following this assessment ComReg's preliminary view was that Ethernet, xWDM and other high bandwidth interfaces were considered substitutes and separately that TDM and Analogue technologies were substitutes. The latter group of products were deemed to have a bandwidth break at 2Mb/s, while there was no bandwidth break in the former group of products. This led ComReg to the preliminary conclusions that there were likely to be three distinct retail LL markets together referred to as the '**Relevant Retail LL Markets**'¹⁷⁵. These were:

- (a) A Low Bandwidth Traditional Interface ('**TI**') Retail Product Market consisting of all retail LLs carried over analogue, digital and TDM interfaces with speed of ≤ 2 Mb/s¹⁷⁶ (the '**Low Bandwidth ('LB') TI Retail Product Market**');
- (b) A High Bandwidth TI Retail Product Market which consists of all retail LLs provided over a TDM interface with speeds > 2 Mb/s (the '**High Bandwidth ('HB') TI Retail Product Market**'); and
- (c) A Modern Interface ('**MI**') Retail Product Market consisting of all retail LLs carried over modern interfaces such as Ethernet, EFM, xWDM and other modern interfaces such as FDDI¹⁷⁷ and FICON¹⁷⁸ (the '**MI Retail Product Market**').

¹⁷⁵ See paragraphs 4.138 to 4.208 of the 2016 Consultation.

¹⁷⁶ See paragraphs 4.188 to 4.190 of the 2016 Consultation.

¹⁷⁷ Fibre Distributed Data Interface ('FDDI').

¹⁷⁸ Fibre Connection.

- 4.18 Finally, ComReg sought to define the likely geographic scope of the above retail LL markets. ComReg's preliminary view was that there was insufficient evidence to suggest that subnational retail LL markets exist for any of the Relevant Retail LL Markets. Although the presence of SPs' own network ('**on-net**')¹⁷⁹ infrastructure is higher in urban Business Parks, Data Centres and campuses of Higher Education Providers (collectively referred to as '**Business Parks**'), thus potentially indicating a greater intensity of competition for the supply of retail MI LLs in these areas, ComReg noted that there was no material evidence of LL service, functionality or price/marketing differentiation on a geographic basis that might indicate the presence of different regional or local competitive conditions¹⁸⁰.

2018 Further Consultation

- 4.19 ComReg's preliminary views as set out in the 2018 Further Consultation were informed by the views set out in the 2016 Consultation and the 2016 Respondent's views received.
- 4.20 Section 3, Retail Market Developments, Trends and Assessment, of the 2018 Further Consultation included Respondents' views to Section 4 of the 2016 Consultation and ComReg's response to the points raised. 4 (ALTO, Eircom, HEAnet and Vodafone) of these Respondents agreed with ComReg's overall assessment as outlined in the 2016 Consultation, but disagreed with specific parts of the analysis. 4 other Respondents (AirSpeed, BT, enet and Verizon) did not agree with parts of the analysis.
- 4.21 ComReg updated the analysis of the Retail Market Assessment, component of Section 3 of the 2018 Further Consultation, to take account of End Users' perceptions and the limited substitution between wired and wireless LLs. This issue was raised as a concern regarding the conclusions of Retail Market Assessment by a number of Respondents (AirSpeed, BT, enet and Vodafone) to the 2016 Consultation.

¹⁷⁹ Throughout this Decision ('on-net') term refers to a situation where the access portion of LL was either delivered entirely and exclusively based on the SP's own local access infrastructure (e.g. SP fixed wire or wireless media to connect the customer premises to its network) or SP's use of upstream physical infrastructure inputs such as dark fibre or LLU connected between a SP's active equipment.

¹⁸⁰ See paragraphs 4.209 to 4.238 of the 2016 Consultation.

- 4.22 ComReg followed this up to verify and investigate further these perceptions through interviews with a 17 multi-site LL End Users¹⁸¹ to verify and investigate further these perceptions. ComReg then proceeded to analyse the retail market data based on SIR data submitted by SPs in order to reach an evidence based conclusion on the subject. This analysis confirmed that end-users' see limited substitution between wired and wireless LLs which indicates that a Hypothetical Monopolist ('**HM**') of wired LLs is likely to be able to sustain a SSNIP in the range of 5-10% above the competitive level without a substantial number of customers switching to wireless LL services. This resulted in the following revised set of three distinct retail LL product markets:
- (a) Retail LB TI HQA Market consisting of all wired retail LLs carried over analogue, digital and TDM interfaces with bandwidths of $\leq 2\text{Mb/s}$;
 - (b) Retail HB TI HQA Market which consists of all wired retail LLs provided over a TDM interface with bandwidths $> 2\text{Mb/s}$; and
 - (c) Retail MI HQA Market consisting of all wired retail LLs carried over modern technology interfaces such as Ethernet, EFM, xWDM and other modern high bandwidth interfaces.
- 4.23 ComReg maintained the preliminary position in the 2016 Consultation that the geographic scope of all the Relevant Retail LL Markets is National, but there are likely to be subnational geographic markets for the provision of MI WHQA products, with this assessed in the context of the MI WHQA Markets definition in Section 4 of the 2018 Further Consultation.

4.4 Product Market Assessment

- 4.24 In the 2016 Consultation and the 2018 Further Consultation, ComReg set out the scope of the product dimensions of the Relevant Retail LL Markets. In summary, as stated in paragraph 4.17 above, ComReg starts its assessment of the retail LL markets by considering a focal product, in this case, retail LLs provided over an Ethernet interface and over a wired medium. ComReg then examines whether related products that bear sufficiently similar attributes (in terms of product characteristics, pricing and intended use) can be considered effective substitutes.
- 4.25 The retail product market assessment considers the following factors:
- (a) An outline of the HMT / SSNIP and its implementation through the assessment of demand and supply side substitution of similar products (discussed in paragraphs 4.27 to 4.33 below);

¹⁸¹ See appendix 5, Interviews with End Users of LLs, of the 2018 Further Consultation.

- (b) An outline of the reasons for selecting retail LLs provided over an Ethernet interface as the retail focal product (discussed in paragraphs 4.34 to 4.40 below);
- (c) An assessment of the substitutability of TDM based retail LLs with the wired Ethernet based retail LLs (discussed in paragraphs 4.41 to 4.69 below);
- (d) An assessment of the substitutability of Analogue based retail LLs with the wired Ethernet based retail LLs (discussed in paragraphs 4.70 to 4.86 below);
- (e) An assessment of the substitutability of xWDM based retail LLs with the wired Ethernet based retail LLs (discussed in paragraphs 4.87 to 4.100 below);
- (f) An assessment of the substitutability of P2P Wireless based retail LLs with the wired Ethernet and xWDM based retail LLs (discussed in paragraphs 4.101 to 4.145);
- (g) An assessment of the substitutability of Business Broadband with the wired Ethernet and xWDM based retail LLs (discussed in paragraphs 4.146 to 4.178);
- (h) An assessment of the substitutability of Ethernet First Mile with the wired Ethernet and xWDM based retail LLs (discussed in paragraphs 4.179 to 4.195); and
- (i) An assessment of the substitutability of Dark Fibre with the wired Ethernet, xWDM and EFM based retail LLs (discussed in paragraphs 4.196 to 4.204);

4.26 ComReg then summaries the key retail product markets in paragraphs 4.208 to 4.213 before then examining in paragraphs 4.214 to 4.231 whether products of all bandwidths fall within the same or separate product markets (a bandwidth breaks assessment).

Hypothetical Monopolist Test

- 4.27 In line with the methodology recommended by the European Commission¹⁸², ComReg begins its analysis by considering the narrowest 'Candidate Product' or 'Focal Product' and examines whether this initial narrow product (the 'Focal Product') should be broadened to include other products or services, taking account of demand-side and supply-side substitutability considerations at the retail level.
- 4.28 An economic analytical framework for defining a relevant product through demand-side substitution analysis consists of an examination of end-user behaviour in response to permanent price increases and is known as the SSNIP Test or Hypothetical Monopolist Test ('**HMT**'). The SSNIP test consists of observing whether a Small but Significant Non-transitory Increase in Price above the competitive level - taken to be in the range of 5 to 10% - of a Candidate Product supplied by a **HM** would provoke a sufficient number of end-users to switch to an alternative (substitute) product such that it would make the original price increase unprofitable. If a sufficient number of subscribers switching to the alternative product makes the price increase unprofitable, then the alternative product is considered a substitute product for the focal product and is included in the relevant product market. The SSNIP Test is carried out for any given number of alternative products, which, by their characteristics, prices and intended use, may constitute an effective substitute to the focal product. If switching to these alternative products is sufficient to also render the SSNIP (above the competitive level) of the focal product (and any included substitute products) unprofitable, then these alternatives are also included in the relevant product market.
- 4.29 Having regard to the above, ComReg first considers whether, from the End User demand-side perspective, there are any products which might act as an effective substitute for Ethernet LLs over a wired medium ('**wired Ethernet LLs**'), being ComReg's focal product choice as discussed below. ComReg examines this from two perspectives:

¹⁸² As noted in paragraph 13 of the European Commission's Notice on Market Definition, demand substitution constitutes the most immediate and effective disciplinary force on the suppliers of a product, and paragraph 15 notes further that "*the assessment of demand substitution entails a determination of the range of products which are viewed as substitutes by the End User*". For two products to be effective demand-side substitutes it is necessary that a sufficient number of customers are not only capable of switching between them, but would actually do so in response to a relative price change. As noted in paragraph 20 of the Commission's Notice on Market Definition, supply-side substitution may also be taken into account where "*suppliers are able to switch production to the relevant products and market them in the short term without incurring significant additional costs or risks in response to small and permanent changes in relative prices*". When these conditions are met, the market may be broadened to include the products that those suppliers are already producing.

- (a) Firstly, ComReg considers whether the characteristics, prices and intended use of potential substitute products are sufficiently interchangeable with those attributes associated with a copper network based broadband.
- (b) Secondly, having examined the characteristics, prices and intended use of any such potential substitutes, ComReg also assesses the likelihood that a sufficient number of End Users might switch to using these potential substitutes in circumstances where the focal product was subject to a small but significant price increase.

4.30 It should be noted that ComReg's primary focus in relation to this market analysis is the local access, this is where potential competition problems are most likely to arise as it is here where the highest potential barriers to market entry may exist. Therefore bundled products, retail LLs with the numerous and differentiated data services which may be provided over it, are not considered.

4.31 One Respondent (Eircom) to the 2018 Further Consultation, included comments on the HMT. They emphasised the need for the HMT to be more quantitative in nature and ComReg has considered these comments in Annex A.1.3¹⁸³.

Demand Side Substitution

4.32 Due to a lack of precise data on the elasticities of demand for various retail LL products and cross elasticities on their substitutes, the demand side substitutability tests are carried out by examining the following factors:

- (a) **Product Characteristics:** Insight into the substitutability of two products can be gained by comparing the:
 - (i) key product features/characteristics that constitutes a retail LL. These include a dedicated symmetric connection with low contention, jitter and latency, along with high level Service Level Agreements ('**SLA(s)**'). See Table 2 below for an overview of the main product characteristics for a range of LL products and other potential substitutes, and
 - (ii) consumers stated preferences on the importance of these features/characteristics.

¹⁸³ See paragraphs A1.31 to A1.35 of this Decision.

Table 2: Overview of product characteristics

LL Type / Product Characteristic	Wired Ethernet LL	TDM LL	Analogue LL	xWDM and other MI LL	Wireless LL	Business Broadband	EFM	Dark Fibre
Bandwidth	From 64 kbps to over 100Gb/s	From 64 kb/s to 10Gb/s (STM-64)	Up to 56 Kb/s	1 Gb/s to >100 Gb/s	Up to 1 Gb/s (distance dependent)	Up to 1 Gb/s	Up to 20 Mb/s	N/A
Service Availability	99.95% uptime, or 4 hours downtime per year					1 day repair	N/A	N/A
Contention	Uncontended (NG Ethernet can be engineered to meet customer requirement)					Some bandwidth can be provided with CoS	Can be engineered	N/A
Latency / Jitter	Low --depends on CoS (Class of Service) requested	Specific levels guaranteed	N/A		Low --depends on CoS requested	Some bandwidth can be provided with CoS	Low --depends on CoS requested	N/A
Resilience	Can be engineered to meet customer requirement		N/A	Can be engineered to meet customer requirement		N/A	Can be engineered to meet customer requirement	N/A
Synchronisation	Sync E specifications (ITU-T G.8261) comparable to SDH	Supported	N/A		Supported	N/A	Supported	N/A
Media	Fibre/Copper	Copper		Fibre	Wireless	Fibre/Copper	Copper	Fibre
Typical Price Range (incl. VAT)	Not publicly available. Typically sold on price-on-application basis.					€450 - €982	Not publicly available. Typically sold on price-on-application basis.	

- (b) **Pricing:** The comparability of prices between LL products is challenging, especially when these products have numerous dimensions to them. The following are a number of price related factors that have an impact on retail consumers of LLs:
- (i) Retail Pricing Structures: Retail LL pricing structures can influence the way in which retail LL purchasers select their SP. ComReg notes that in general, LL services are sold on a price-on-application ('**PoA**') basis and thus retail prices are not typically publicly available. Typically these will involve both connection/installation fees and reoccurring charges. The connection/installation maybe influenced by the geographic location and the length of the connection from the end user premises to the serving network node of the LL supplier. Reoccurring charges would depend on the LL access technology, bandwidth, and the Service Level Agreement ('**SLA**') requested. Finally discounts from bundling LLs with other services, the number of lines purchased and the duration of the contract can influence the retail price;
 - (ii) End-user awareness of cost: Retail customers are more likely to be sensitive to price changes if they are aware of the retail costs they will incur with their purchasing decisions, than those who are not. The 2014 Market Research¹⁸⁴ indicated that retail consumer purchasing a bundle of telecommunication and IT products from an SP, were less likely to be aware of the LL service costs than those retail customers who purchased standalone LL services. Nevertheless, ComReg notes that end-users are likely to be more aware of specific costs at the time when they choose a LL SP, typically through a procurement process that involves tendering that allows them to compare the service costs; and

¹⁸⁴ The 2014 Market Research, slides 105 and 109.

- (iii) **End-user sensitivity to price changes:** End-user sensitivity to changes in prices is important when assessing the propensity of businesses to switch to alternative services, in particular, in responses to an increase in the price of retail LLs. Such considerations are of relevance to ComReg's assessment of potential retail market substitutes for retail LLs and the assessment of the strength of any indirect constraints imposed from the retail LL market on the wholesale LL market. The 2014 Market Research indicated that 70% of LL service purchasers claimed to have an ability to negotiate terms and conditions of their service including, but not limited to, lower prices.¹⁸⁵ This research also showed that in the event of 10% increase in the price of a retail LL service only 37% of customers who purchased a standalone LL services would definitely or possibly change their purchasing behaviour. However, for customers who purchased a bundle of telecommunication and IT products, this is considerably higher at 67%. It must be noted for these customers purchasing in a bundle, the LL costs will be more obscure and a 10% increase in the LL service would be somewhat less in the overall bundle costs¹⁸⁶.
- (c) **Intended Use:** The use that different LL products are put to by consumers provides another type of insight into the comparability and substitutability of different products. If two products are used for the same or similar purposes then it is possible that consumers will consider them to be substitutes. If on the other hand consumers do not perceive a particular product as equivalent to another, then they are unlikely to switch between them in the event of a SSINP.

Supply Side Substitution

4.33 ComReg also considers supply-side substitution, which examines whether, in response to a SSNIP in the market for the focal product, an operator in another market could potentially enter the market for the focal product by switching production inputs in order to offer the focal product (and any substitutes). If supply side substitution is possible, then a potential entrant could enter the market and make any hypothetical price increase unprofitable for the HM. In such a case, it may be appropriate to broaden the definition of the market to include products similar to the focal product on the basis of supply-side substitution. In considering supply side substitution, ComReg considers the following factors:

¹⁸⁵ The 2014 Market Research, see slide 104.

¹⁸⁶ For example, if LLs accounted for 33% of the costs of a bundled package of an end user, then a 10% increase in the cost of the LL component of the package would only result in a 3.3% increase in the total bundled cost.

- (a) **Suppliers with similar production technologies:** these are producers who can switch swiftly from producing a one product to the focal product or utilising spare capacity to do so. This is where the alternative supplier has all the relevant assets; only needs adjustment to the production process and/or inputs are and this does not involve significant sunk/irrecoverable costs.
- (b) **Barriers to entry (technical, financial or regulatory):** these are obstacles to the entry of new suppliers to the relevant/focal product and they can include technical expertise, financial resources required or regulatory requirements such as licences. While these challenges may not prevent a supplier from entering a market in the longer term they may prevent immediate entry in the short term to constrain the profitability of a SSNIP.

Focal product – wired Ethernet based retail LLs

- 4.34 The European Commission’s Notice on Market Definition and SMP Guidelines¹⁸⁷ (which ComReg is obliged to take utmost account of) provide market definition principles that are useful and applicable when analysing markets, including retail markets. The first step involves identifying the focal product at the retail level which, once established, can then be used as the basis for assessing potential complement and/or substitute products.¹⁸⁸
- 4.35 In the 2016 Consultation¹⁸⁹ ComReg set out a preliminary view that the focal product, being the product from which potential alternative substitutes are assessed, was a LL services provided over an Ethernet interface (whether on a standalone basis or in a bundle with other services).

¹⁸⁷ See paragraph 30 of the SMP Guidelines and paragraph 16 of the European Commission’s Notice on Market Definition.

¹⁸⁸ As noted in paragraph 13 of the European Commission’s Notice on Market Definition, demand substitution constitutes the most immediate and effective disciplinary force on the suppliers of a product, and paragraph 15 notes further that “...*the assessment of demand substitution entails a determination of the range of products which are viewed as substitutes by the consumer*”. For two products to be effective demand-side substitutes it is necessary that a sufficient number of customers are not only capable of switching between them, but would actually do so in response to a relative price change. As noted in paragraph 20 of the Commission’s Notice on Market Definition, supply-side substitution may also be taken into account where “...*suppliers are able to switch production to the relevant products and market them in the short term without incurring significant additional costs or risks in response to small and permanent changes in relative prices*”.

¹⁸⁹ See paragraph 4.98 of the 2016 Consultation.

- 4.36 In the 2018 Further Consultation¹⁹⁰, ComReg further preliminary view was to exclude wireless Ethernet LLs from the MI Retail Product Market. This means that the focal product proposed in the 2016 Consultation is restricted to those provided over a wired medium. Therefore a LL service provided over an Ethernet Interface (whether on a standalone basis or in a bundle with other services) and provided over a wired medium is considered the appropriate retail focal product.
- 4.37 LL services provided over an Ethernet Interface and over a wired medium (a '**wired Ethernet LL**') is the most common retail LL product sold at the retail level, accounting for 73% of all wired retail LL circuits sold in Q4 2018 as shown in Figure 20, above.
- 4.38 Further to the above, consideration must be given to whether the focal product is a standalone retail LL connectivity product or a connectivity product bundled with various applications and services. It has been noted in paragraph 3.106 above, that the majority of retail LLs are purchased as part of bundle, namely alongside various applications and services. However, it is important to note that ComReg's primary focus in this market analysis is on the local access¹⁹¹. It is the local access portion of a LL circuit where potential competition problems are most likely to arise as it is here where the highest potential barriers to market entry may exist, primarily associated with infrastructure that is not easily replicated. Therefore, both standalone and bundled products are included as together they make up the local access portion of the market.
- 4.39 It is therefore ComReg's position that a wired Ethernet LL (whether on a standalone basis or in a bundle with other services) is the focal product against which to assess alternative potential substitute products. If an alternative product is found to be an effective substitute for the focal product, it is included in the relevant product market.
- 4.40 Two Respondents (Vodafone and Eircom) to the 2018 Further Consultation, included comments on this topic. Both supported the retail focal product being a LL with an Ethernet interface¹⁹².

¹⁹⁰ See Section 3.1.2 of the 2018 Further Consultation.

¹⁹¹ Business connectivity from the end-user up to an aggregation point in the network.

¹⁹² See Annex A.1.3, paragraphs A1.36 to A1.37.

Is a TDM LL an effective substitute for a wired Ethernet LL?

Introduction

- 4.41 A Digital Interface LL based on legacy TDM technical transmission standards, including Plesiochronous Digital Hierarchy ('**PDH**') and Synchronous Digital Hierarchy ('**SDH**'), is a circuit based technology, which allocates each End User to specific time-slots on a transmission link. TDM LLs have stable and predictable transmission characteristics, low transmission delay (latency) and low jitter (variation in transmission delay). These characteristics are important for some End User applications (e.g. telemetry SCADA¹⁹³ applications where speedy response times are required). TDM LLs are available in bandwidths ranging from 64 Kb/s up to 10 Gb/s. However, as seen in Figure 30, the majority¹⁹⁴ of TDM LL purchased by businesses in Ireland support bandwidths below or equal to 2Mb/s.
- 4.42 In paragraphs 4.43 to 4.69 below ComReg outlines the rationale for deciding that retail TDM based LL services are not likely to be an effective substitute for retail Ethernet based LLs over a wired medium.

Demand Side Substitution

Product Characteristics

- 4.43 Table 2 above compares product characteristics for a range of services including TDM and Ethernet LL services over a wired medium. Although, it indicates that a number of qualitative characteristics of these services are similar, the demand¹⁹⁵ for such products seem to be different with an emphasis on the migration of retail demand from TDM to Ethernet based retail LLs.

¹⁹³ Supervisory Control and Data Acquisition systems used for remote control and monitoring of numerous equipment and processes e.g. utility plant, water flows, etc.

¹⁹⁴ 95%

¹⁹⁵ See Section 3.5, paragraphs 3.81 to 3.86.

- 4.44 While Ethernet services cannot exactly match all of the characteristics of TDM LLs to the same degree of specification (such as latency/jitter or synchronisation), the differences appear to be less of an issue as mainstream applications used by businesses primarily use Ethernet/IP technologies. Hence the product characteristics that differentiate retail TDM LLs from retail Ethernet LLs over a wired medium appear to have become somewhat less important. However, as seen in Figure 20 above, the number of TDM LL circuits in use and being purchased is in decline, as LL purchasers migrate to Ethernet LL services (or only buy Ethernet LL services) which offer relatively higher bandwidths for lower prices or perhaps decide that asymmetric business broadband products are sufficient for their connectivity needs.
- 4.45 In this regard, the 2014 Market Research indicated that purchasers of TDM and Ethernet LLs tend to place similar values on various product attributes. In particular, service availability, download speed and resilience were cited by the majority of Respondents purchasing either TDM or Ethernet LL as important or very important service characteristics¹⁹⁶. The 2014 Market Research suggested that Ethernet LL purchasers may place higher value on latency compared to TDM LL purchasers¹⁹⁷, but given that Ethernet is not technically superior to TDM in terms of latency, no specific advantage can be attributed to Ethernet. ComReg's interviews with large retail LL purchasers conducted as part of the 2018 Further Consultation reiterated this observation on the product characteristics.¹⁹⁸
- 4.46 Nevertheless, ComReg notes that there are End Users for whom the characteristics of time synchronisation and low latency of TDM LLs may continue to be important and their equipment is configured for TDM interfaces. For example, utility operators such as CIE and ESB use low bandwidth TDM LLs for remote monitoring of their networks. Such End Users using legacy applications that do not require high bandwidth, may consider that TDM based retail LLs are sufficient to meet their demands, and may not consider switching to an Ethernet based service over a wired medium, even in the context of a price rise in the TDM service.¹⁹⁹

¹⁹⁶ The 2014 Market Research, slide 88.

¹⁹⁷ 96% of Ethernet LL purchasers noted that latency is important or very important service characteristic compared to 70% among TDM LL purchasers.

¹⁹⁸ See Section 3.1.2 of the 2018 Further Consultation

¹⁹⁹ There is a one-off cost to switching to Ethernet. See paragraphs 4.60 to 4.62 below for more details.

Pricing

- 4.47 In the absence of readily available retail pricing information, ComReg has had regard to Oxera's analysis²⁰⁰ of wholesale input prices observed in the market as a proxy for the competitive retail price benchmark for comparing price ranges for TDM and Ethernet LLs. These prices are cost orientated²⁰¹ and thus, in ComReg's view, should be a reasonably good proxy for prices that would arise in a competitive market outcome.
- 4.48 ComReg adopted this approach due the wide disparity in retail pricing information provided by SPs in their response to our SIRs, as outlined in Annex 3 dealing with data treatment. Using average pricing for retail LLs presented challenges due to the limited geographic information and absence of LL local access length/distance information.
- 4.49 Table 3 below compares the relative prices of a 2 Mb/s single-end²⁰² TDM circuit²⁰³ and 10Mb/s single-end Ethernet circuit²⁰⁴ from a wholesale LL purchasers' interconnection point to an End User premises location containing all of the required wholesale inputs. Prices are compared in three different scenarios where assumed main link distance is either 0, 15 or 30 kilometres²⁰⁵.

²⁰⁰ See pages 47-49 of the 2016 OXERA Report, Market Review WHQA: Appendix 1 (ComReg 16/69a<https://www.comreg.ie/publication/market-review-whqa-appendix-1/>).

²⁰¹ See "[A final decision further specifying the price control obligation in the market for wholesale terminating segments of leased lines, ComReg Document 12/03, Decision D02/12](#)", dated 2 February 2012. In this Decision ComReg specified that it will apply cost orientation to determine maximum PPC charges using BU-LRAIC plus model while for WLLs the maximum charges will be based on the published prices (at the time) as well as a minimum price floor which is set on the basis of the appropriate MST between WLLs and PPCs on a SEO basis.

²⁰² A single ended PPC is the circuit from the customer premises to the PoH.

²⁰³ Figure 30 shows that the majority of retail TDM circuits have bandwidth below or equal to 2Mb/s.

²⁰⁴ Eircom's NGN Ethernet products are only offered at speeds at or above 10Mb/s. As can be seen in Figure 30 the large majority of in-situ Ethernet circuits have bandwidth greater than 2Mb/s.

²⁰⁵ See the 2016 Oxera Report; Section 3.1.3.

Table 3: Relative price comparison of TDM and Ethernet LL²⁰⁶

Distance	TDM LL, 2Mb/s, annual rental	Ethernet LL, 10Mb/s, annual rental	% Difference
Local node/no main link (TDM), Local node (Ethernet)	€2,401	€4,410	+ 84%
15km main link (TDM), same region (Ethernet)	€6,386	€5,576	- 13%
30km main link (TDM), urban to rural region (Ethernet)	€9,026	€6,495	-28%

4.50 The price comparison in Table 3 above indicates that a 10 Mb/s Ethernet circuit is cheaper than a 2 Mb/s TDM circuit for distances that require core conveyance i.e. where assumed main link distance is either 15 or 30 kilometres. Thus, a 5-10% price increase in the price of Ethernet LL is unlikely to lead to a migration from Ethernet to TDM based LL. Furthermore, as the bandwidths do not match, users requiring more than 2Mb/s at any distance are unlikely to choose to combine multiple TDM services when a single 10 Mb/s Ethernet circuit is cheaper²⁰⁷. Thus, evidence presented in Table 3 above would suggest that TDM LL is not considered an effective substitute to an Ethernet LL.

Intended Use

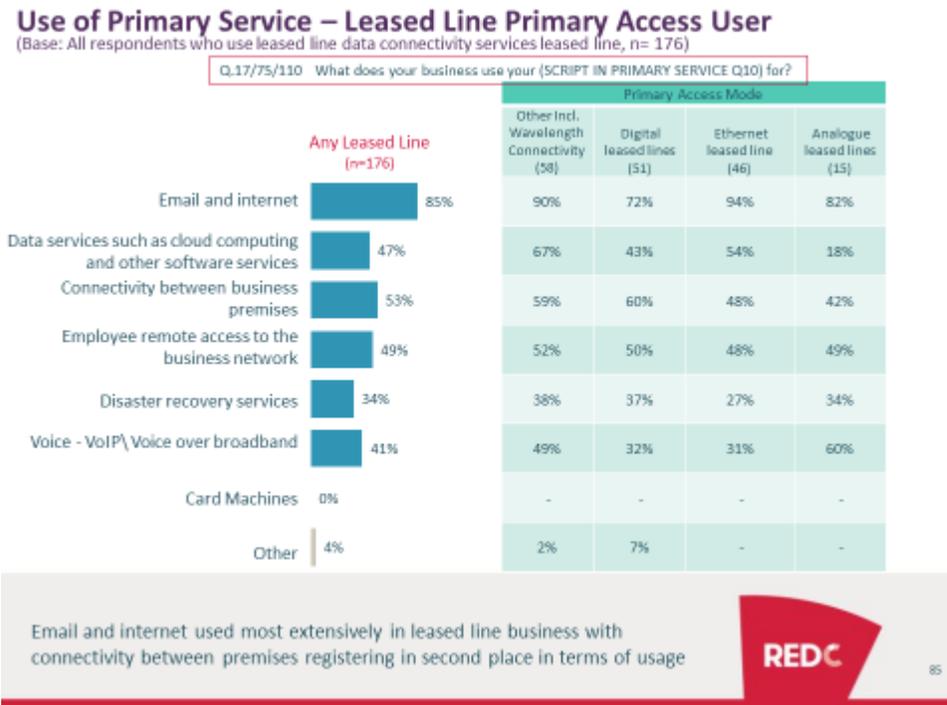
- 4.51 In the 2016 Consultation ComReg considered the results of a survey of retail LL users, namely the 2014 Market Research.²⁰⁸ It should be noted from the outset that, although that particular research was carried out a number of years ago, responses to both the 2016 Consultation and the 2018 Further Consultation indicated that Respondents agreed with the findings in relation to the intended uses of TDM based retail LL and Ethernet based retail LLs.
- 4.52 In the 2014 Market Research, Respondents purchasing LL services were asked to indicate what they are using their services for.

²⁰⁶ Eircom Network Price List V12 0 unmarked 01072019

²⁰⁷ In this example, end-user requiring service of 10Mb/s bandwidth would have to purchase five 2Mbps TDM circuits.

²⁰⁸ The 2014 Market Research.

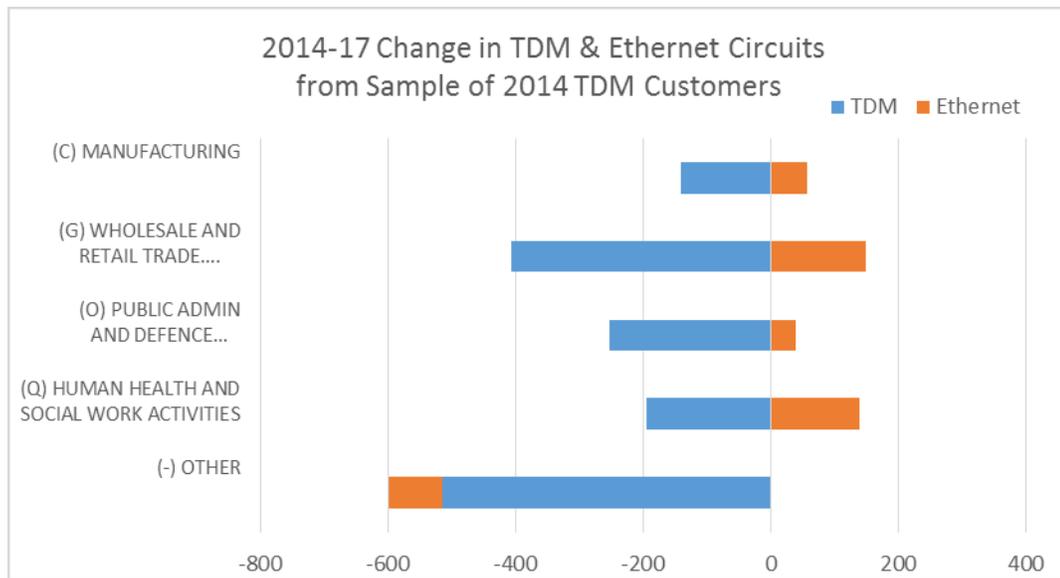
Figure 32: Intended use of primary LL service by End Users



- 4.53 Figure 32 above illustrates that businesses purchasing Ethernet LLs are more likely to use their service for emails and accessing Internet as well as accessing data services such as cloud computing when compared to purchasers of TDM LL²⁰⁹. On the other hand, TDM users are more likely to use their service for connectivity between business premises and disaster recovery services²¹⁰.
- 4.54 ComReg has, since the publication of the 2018 Further Consultation, undertaken its own research, using the SIR data collected from SPs, into the use of retail LLs using various interfaces.

²⁰⁹ For example, 94% of respondents purchasing Ethernet LL use their service for emails and accessing Internet compared to 72% of respondents purchasing TDM LL.

²¹⁰ For example, 60% of respondents purchasing TDM LL use their service for connectivity between their business premises compared to 48% of respondents purchasing Ethernet LL.

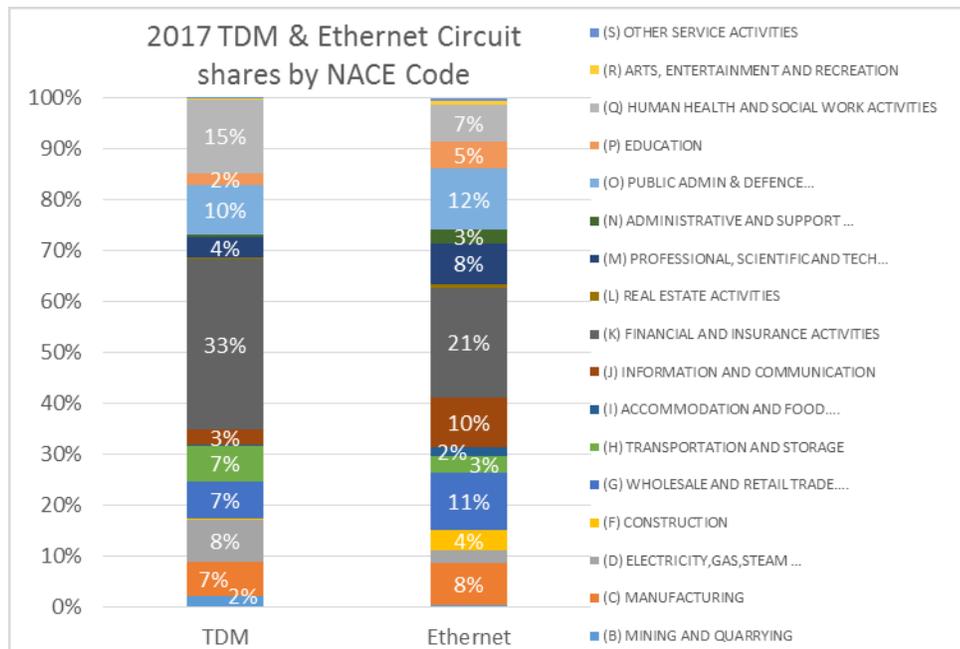
Figure 33: Migration from TDM to Ethernet by NACE Code

4.55 Figure 33, above, shows the change in retail TDM and Ethernet circuit numbers between 2014 and 2017, taken from a sample of customers in 2014 who all consumed some TDM circuits²¹¹. This shows that for customers from four business categories (C, G, O and Q)²¹² there has been a net increase in their consumption of wired Ethernet LLs, while they also had a net decline in TDM LLs, between 2014 and 2017. While the net decline in the number of TDM circuits is greater than the net increase in Ethernet circuits, this would indicate some switching from TDM to wired Ethernet. For the remainder of the business categories within this sample (Other), there was a net decrease in both the consumption of TDM and Ethernet circuits.

²¹¹ This sample was taken from data collected through the Statutory Information Requests to SPs for the years 2014 to 2017. The sample is based on all 2014 TDM retail customers identified by their NACE code. The sample represents 62% of all the 2014 TDM customers and 75% of the TDM circuits consumed in 2014.

²¹² (C) Manufacturing; (G) Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles; (O) Public Administration and Defence; Compulsory Social Security; and (Q) Human Health and Social Work Activities represent approximately 53% of 2014 TDM circuits consumed in the sample.

Figure 34: Profile of Businesses Consuming TDM and Ethernet Circuits in 2017



4.56 ComReg has examined the profile of businesses in 2017 that purchased TDM and Ethernet LLs in order to ascertain whether these services are purchased for different purposes, this is outlined above in Figure 34. This analysis supports the 2014 Market Research findings and indicates that TDM LLs are predominantly used by utility operators (D - 8%) as well as financial (K – 33%), transport (H - 7%) and government institutions (O, P and Q – 27%) for activities that do not require high bandwidth services such as remote network monitoring, critical system control and secure transactional applications. However, some of the 2 Mb/s TDM LLs are also used by corporate entities to form a part of a generic inter-site connectivity, thus suggesting that these circuits can be used for more general applications. However, by virtue of the low bandwidth, such circuits are likely to be of limited utility for networking, cloud and other such services requiring higher bandwidths speeds.

4.57 Overall Figure 34 shows that the profile of Ethernet LL purchasers is more dispersed across the different business categories compared to the profile of TDM purchasers. In general, End Users that require higher bandwidths for data networking purposes tend to purchase Ethernet as opposed to TDM based retail LLs.

- 4.58 Furthermore, there are trivial amounts of new TDM based retail LLs being purchased.²¹³ As such, the migration to Ethernet and/or other high bandwidth based retail LL services would suggest that there is asymmetric substitution between these services in that there are significantly more end-users switching from TDM to Ethernet based LLs rather than vice versa. There is no significant evidence of retail users of Ethernet LLs switching to TDM based retail LLs. TDM based customer premises equipment ('CPE') is now reaching obsolescence and is no longer being produced by manufacturers and it is therefore unlikely that a retail customer using Ethernet LLs could revert to TDM LL service.

Conclusion on Demand Side Substitution

- 4.59 The above evidence would suggest that a HM supplier of Ethernet LL services over a wired medium is likely to be able to sustain a SSNIP in the range of 5-10% above the competitive level without a sufficient number of customers switching to TDM LL services such that it would make a SSNIP profitable.
- 4.60 Responsiveness to a SSNIP might also be limited or delayed by the existence of switching costs when migrating between LLs with different interfaces. Such switching barriers include:
- (a) the potential risk of service disruption;
 - (b) the costs of parallel operation while testing the new service; and
 - (c) Investments required to change equipment at End User premises. Examples included changes to Private Automated Branch Exchange ('PABX') equipment used to provide private circuit switched voice services.
- 4.61 The impact of switching costs will likely vary by type of LL purchaser. For businesses purchasing numerous LL circuits with low bandwidth requirements, the switching costs may be substantial. This is because the migration between LLs with different interfaces would require a change to the customer equipment and applications for supporting the new connections, as well as the general need for testing the systems before the migration is complete.²¹⁴

²¹³ 15 Circuits in 2018.

²¹⁴ As such, it may be necessary to run the two systems in parallel during the Ethernet implementation phase.

- 4.62 For example, TDM based LL purchasers that use circuit switched voice services would be required to adopt VoIP services or interface conversion equipment so that existing equipment could be used. Thus, it is ComReg's view that end-users might be more likely to consider migrating between different interface LL services at the time of contract renewal when decisions including the use of VoIP telephony or bandwidth upgrades are made.

Supply Side Substitution

- 4.63 Supply side substitution could potentially broaden the relevant markets only in instances where the constraint arising from the supply side substitution provides an additional and sufficiently immediate constraint that was not already considered as part of demand side substitution analysis i.e., SPs that are already providing services considered to be part of the relevant markets cannot provide an additional supply side substitution constraint.
- 4.64 In this regard, ComReg notes that, as highlighted in Table 1 above, currently SPs providing retail TDM LLs also supply Ethernet LLs. Given the general trend of End Users migration to Ethernet LL, all TDM LL SPs have developed Ethernet LL products and thus, any competitive constraints arising from the presence of these SPs in the retail LL market are already accounted for through demand side substitution analysis.
- 4.65 However, any current Ethernet based retail LL SP is unlikely to begin to supply TDM based circuits due to the necessary investment costs that may be stranded as this technology is becoming obsolete and customer numbers are declining.

Conclusion

- 4.66 Having considered relevant demand side factors including functionality, pricing and consumer usage, as well as relevant supply side factors, ComReg's position is that TDM LLs are not likely to be an effective substitute for wired Ethernet LLs.
- 4.67 While the majority of product characteristics are similar, the general trend of migration from TDM to wired Ethernet based LL as well as the observed differences in pricing and use of these services (TDM LL are generally used for applications that do not require high bandwidth) indicates that wired Ethernet LL purchasers would not view TDM LLs as a viable substitute.
- 4.68 This indicates an asymmetric substitution, a substitution from TDM to wired Ethernet LLs but no substitution from wired Ethernet to TDM LLs. BEREC have outlined that such products should be excluded from the focal products' market:

“... if there is no substitution from the focal product to the alternative product(s) – and only substitution from the alternative product(s) to the focal product – the alternative product(s) should not be included in the market.”²¹⁵

- 4.69 Therefore, ComReg has decided that TDM LLs are not in the same market as wired Ethernet LLs. In the paragraphs below ComReg will consider whether other potential substitutes can be regarded as effective substitutes for wired Ethernet LL. Effective substitutes for TDM LL are considered separately, after all potential substitutes for Ethernet LLs are considered.

Is an Analogue LL an effective substitute for either a wired Ethernet or a TDM LL?

Introduction

- 4.70 In both the 2016 Consultation and the 2018 Further Consultation, ComReg set out its preliminary view that Analogue based retail LLs were not an effective substitute for an Ethernet based retail LL. No Respondent to either of the consultations disagreed with this observation.
- 4.71 Below, in paragraphs 4.72 to 4.86, ComReg sets out the rationale for deciding that retail analogue LL services are not an effective substitute for wired Ethernet LLs, while being an effective substitute for TDM LL services.

Demand Side Substitution

Product Characteristics

- 4.72 Analogue LLs are dedicated direct connections linking two sites using standard copper access lines usually used to provide PSTN type services. These can support private voice services, and may be used as permanent voice connections between business locations, as commonly used by financial service institutions. They can also support data services where customers can connect analogue to digital modems, e.g. V.34²¹⁶ modems, which can support up to 28.8Kb/s data transfer rates. These are often used by utilities and local authorities for telemetry purposes.

²¹⁵ BoR (11) 54, BEREC Report on Impact of Fixed-Mobile Substitution in Market Definition, 8th December 2011, page 14.

²¹⁶ ITU modem standard.

Comparison to Wired Ethernet LLs

- 4.73 Table 2 above shows that the analogue and Ethernet LLs do not have a great deal of overlap in terms of product characteristics. Download and upload speeds are the feature showing the greatest divergence, where analogue speeds (56Kb/s) are below the minimum of speed of Ethernet LLs (64Kb/s)²¹⁷ and vastly lower than the top speed of Ethernet LLs (100Gb/s).
- 4.74 The 2014 Market Research²¹⁸ indicated that purchasers of analogue LL circuits and Ethernet placed similar weightings on bandwidth upload speeds and latency but had different weightings for availability, bandwidth download speeds, connection, jitter and resilience, where these were of lower importance to analogue customers. No Respondents to either the 2016 Consultation or the 2018 Further Consultation raised issues with this observation. Furthermore, the decline in numbers of analogue retail LLs in-situ (albeit slow) and the fact that no new orders have been placed since 2016 indicate that the product migration from analogue retail LLs is continuing.

Comparison to TDM LLs

- 4.75 Analogue and low bandwidth TDM LL offer broadly equivalent functionality as they are using the same technology. Therefore, many of the TDM LL characteristics outlined in Table 2 above are also exhibited by analogue LL. For example, analogue LL can transmit digital information while TDM can transmit analogue signals. Analogue LL can support bandwidth of up to 56 Kb/s which is very close to the lower end of bandwidth range provided by TDM LL (64 Kb/s).
- 4.76 Thus, ComReg's view is that due to the low speed and legacy nature of the technological standards, analogue LLs share many of the characteristics of TDM based retail LLs.

²¹⁷ In 2018 over 99.6% of wired Ethernet retail LLs were above 2MB/s.

²¹⁸ The 2014 Market Research, slide 88.

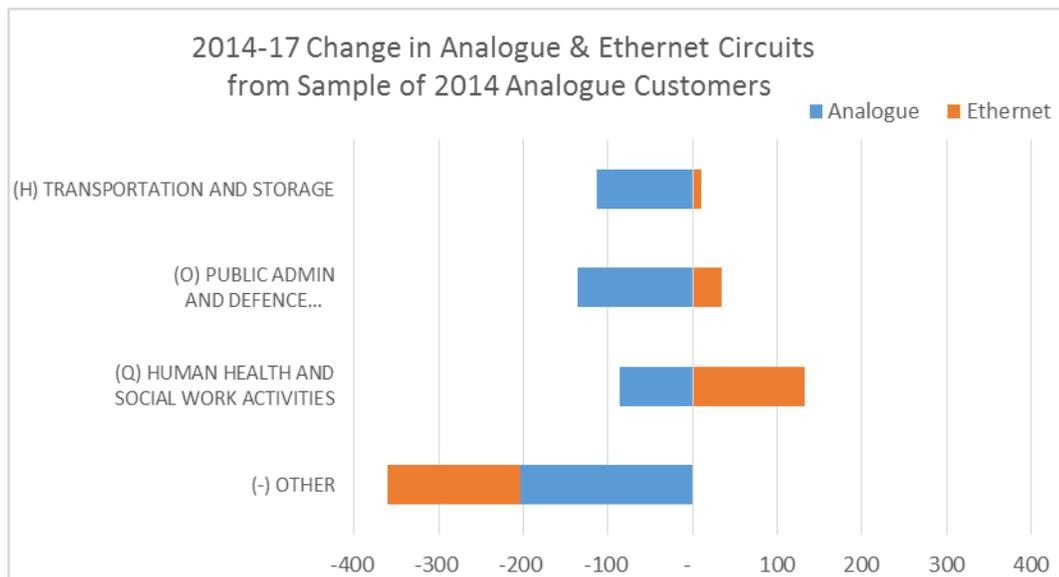
Pricing

4.77 In the absence of available retail pricing information, ComReg has relied on Oxera’s analysis of Eircom’s wholesale prices for analogue and TDM LLs²¹⁹. In the 2016 Consultation, Oxera’s analysis highlighted that the price of analogue LL is similar to the price of TDM End User link supporting 64kb/s bandwidth.²²⁰ This continues to be the case.

Intended Use

4.78 Figure 32 above indicates that analogue LLs are used, in some cases, in a similar way to other LL services, with 82% of analogue LL purchasers using their service for accessing emails and some other data services, 60% for voice services and 49% for remote access to the business network²²¹.

Figure 35: Migration from Analogue to Ethernet by NACE Code



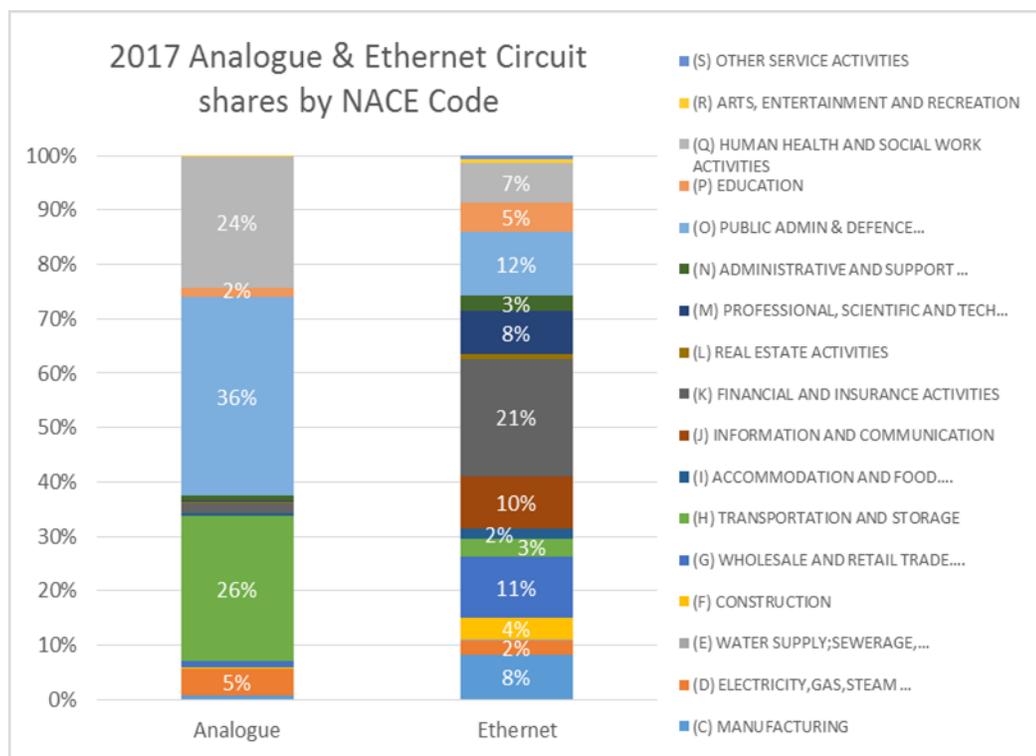
²¹⁹ 2016 Oxera Report, Section 3.2.2.

²²⁰ 2016 Oxera Report, Table 3.6.

²²¹ The 2014 Market Research, slide 85. ComReg notes that the base number for analogue LL purchasers is relatively comparable to purchasers of other LL services and hence, some of the reported results are not statistically significant.

4.79 Figure 35, above, shows the change in retail analogue and Ethernet circuit numbers between 2014 and 2017, taken from a sample of customers in 2014 who all consumed some Analogue circuits²²². This shows that for customers from three business categories (H, O and Q)²²³ there was a net increase in the Ethernet LL circuits while there was a net decrease in Analogue LL circuits between 2014 and 2017. The remainder of the business categories within this sample, saw a net decrease in both Ethernet and Analogue LLs for the years examined. While the overall net decline in the number of analogue circuits is greater than the small overall net increase in Ethernet circuits, there appears to be some switching from analogue to wired Ethernet, in the three business categories identified above.

Figure 36: Profile of Businesses Consuming Analogue and Ethernet Circuits in 2017



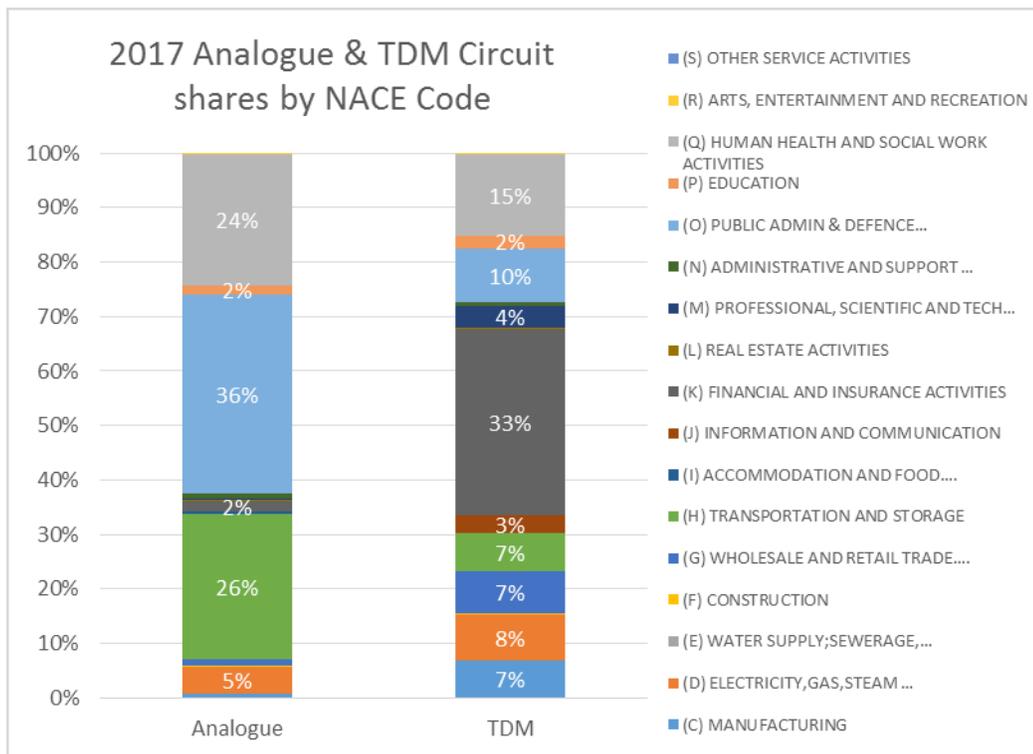
²²² This sample was taken from data collected through the Statutory Information Requests to SPs for the years 2014 to 2017. The sample is based on all 2014 analogue retail customers identified by their NACE. The sample represents 77% of all the 2014 analogue customers and 97% of the TDM circuits consumed in 2014.

²²³ (H) Transportation and Storage; (O) Public Administration and Defence; Compulsory Social Security; and (Q) Human Health and Social Work Activities represented 81% of 2014 analogue circuits consumed in the sample.

4.80 Figure 36 shows the profile of businesses that purchase analogue LLs. Similar to TDM, analogue LLs are predominantly used by utilities (D – 5%), transport (H - 26%) and government institutions (O and Q – 62%) for activities that do not require high bandwidth services such as remote network monitoring, critical system control and secure transactional applications. This is in contrast to Ethernet based retail LLs which are typically of higher bandwidths and used for data services, alongside e-mail and VPN's.

Comparison to TDM LLs

Figure 37: Profile of Businesses Consuming Analogue and TDM Circuits in 2017



4.81 Figure 37, above compares the business categories that consume analogue and TDM LLs from the sample of customers with NACE categories identified. While there is a greater variety of customer categories consuming TDM LLs, we can see an overlap between the 4 categories (D, H, O and Q) that dominate analogue LLs (91%), in the customers of TDM LLs (40%). These customers typically utilise LLs for activities that do not require high bandwidth services such as remote network monitoring, critical system control and secure transactional applications. This is in contrast to Ethernet based retail LLs which are typically of higher bandwidths and used for data services, alongside e-mail and VPN's.

Conclusion on Demand Side Substitution

- 4.82 Similarly to TDM LLs, the users of analogue LLs are generally migrating towards MI based LL services or exiting the retail LL markets. As highlighted in Figure 20 above the number of analogue LLs has decreased from an average of 4,474 in 2008 to 1,548 at the end of 2018.
- 4.83 Thus, such End Users using legacy applications that do not require high bandwidth, may consider that analogue based retail LLs are sufficient to meet their demands, and may not consider switching to an Ethernet based service over a wired medium, even in the context of a price rise in the analogue service.
- 4.84 On the other hand, analogue and TDM LLs have sufficiently similar product characteristics and are used in a similar way by End Users. While there is no evidence of substantial switching between TDM and analogue LLs, as both products are in continuous decline, ComReg considers that these analogue LL services are likely to exhibit similar asymmetric substitution patterns, as TDM LL services i.e. both TDM and analogue LL users are migrating to varying degrees towards MI based LLs, but not vice versa.

Supply Side Substitution

- 4.85 ComReg notes that retail analogue LL SPs also tend to supply retail wired Ethernet and TDM LL services. Thus, the competitive constraint arising from providers of analogue LLs is already considered in the demand side substitution analysis above.

Conclusion

- 4.86 Having considered relevant demand side factors including functionality, pricing and consumer usage, as well as relevant supply side factors, ComReg's position is that analogue LLs are not in the same product market as wired Ethernet LLs but do fall within the same relevant retail product market as TDM LLs.

Is an xWDM LL an effective substitute for either a wired Ethernet, a TDM or an Analogue LL?

Introduction

- 4.87 xWDM is a transmission technology originally used by network operators to provide optical fibre links with very high capacity within their networks. It is now increasingly being used by businesses that have very high bandwidth requirements, particularly for data centre and data storage network applications.
- 4.88 In both the 2016 Consultation and the 2018 Further Consultation, ComReg set out the preliminary view that xWDM based retail LLs are an effective substitute for an Ethernet based retail LL. No Respondent to either of the Consultations disagreed with this observation.

- 4.89 In paragraphs 4.90 to 4.100 Below, ComReg outlines the rationale for deciding that xWDM and other very high bandwidth retail LL services may represent an effective retail substitute for wired Ethernet based LLs and therefore not a substitute for retail TDM or analogue LLs.

Demand Side Substitution

Product Characteristics

Comparison to Wired Ethernet LLs

- 4.90 xWDM equipment typically supports a wide range of service connection interfaces and protocols including Ethernet, SDH and other modern interfaces such as those associated with data storage applications, e.g. Fibre Channel²²⁴. Therefore, the qualitative aspects of Ethernet and other very high bandwidth LL services such as xWDM are very similar. The introduction of very high bandwidth Ethernet services that are capable of delivering symmetric speeds of up to 100 Gb/s has further reduced the gap between maximum bandwidth that these LL services can deliver while xWDM systems can deliver multiple wavelengths on a single fibre.
- 4.91 The 2014 Market Research indicated that purchasers of very high bandwidth LLs (such as xWDM LLs) tended to value product attributes in a similar manner to purchasers of Ethernet based retail LLs. In particular, service availability, bandwidth, symmetry and contention were mentioned by the majority of Respondents purchasing very high bandwidth LLs as important or very important service characteristics²²⁵. Furthermore, Figure 20, above, shows the number of xWDM based retail LLs has continued to increase since then, alongside Ethernet based retail LLs. As such, ComReg is of the view that the observations detailed above remain valid.

Pricing

- 4.92 Retail pricing information on xWDM is difficult to ascertain with any degree of certainty and/or reliability due to the factors outlined in paragraphs 3.104 to 3.106 above. However, Eircom's wholesale price of its 10 Gb/s WSEA logical circuit is likely priced in a manner similar to that observed for alternative xWDM interfaces.²²⁶

²²⁴ <https://www.perle.com/products/sfp-to-sfp-media-converter.shtml>.

²²⁵ The 2014 Market Research, slide 88. For example, 93% of respondents purchasing very high bandwidth LL noted that bandwidth is important or very important service characteristic compared to 75% of Ethernet LL users.

²²⁶ Eircom LLRO Network Price List V12.

Intended Use

- 4.93 Figure 20 above illustrated that there are relatively few xWDM or other very high bandwidth MI LL sold at the retail level. At the end of 2017 there were 243 such LLs up from 199 in 2014. Figure 32 above indicates that high bandwidth retail LLs are used in a similar way to other similar LL services, with 90% of purchasers using their service for accessing emails and internet, 67% for data services such as cloud computing and 59% for connectivity between business premises.
- 4.94 As noted in paragraph 4.87 above, some End Users such as data centres require specialist high bandwidth applications for connecting storage area networks. In such instances, these End Users typically purchase xWDM or other high bandwidth LL products. Hence, the intended use of xWDM is broadly similar to that of high bandwidth Ethernet retail LLs²²⁷.
- 4.95 Furthermore, as the demand for higher bandwidth services increases into the future, the substitutability of xWDM and similar very high bandwidth products with high bandwidth Ethernet services will likely converge.

Conclusion on Demand Side Substitution

- 4.96 Very high bandwidth LL such as xWDM and Ethernet LL over 1 Gb/s have sufficiently similar product characteristics, pricing and are used in a similar way by End Users. The introduction of very high bandwidth Ethernet services that are capable of delivering symmetric speeds of up to 100 Gb/s has further reduced the differences between Ethernet and other very high bandwidth LL such as xWDM based LLs.
- 4.97 Following on from the above, xWDM or other high bandwidth LL products are not considered a substitute to TDM or analogue LLs.

Supply Side Substitution

Comparison to Wired Ethernet LLs

- 4.98 ComReg notes that all SPs providing very high bandwidth MI LL services such as xWDM are also supplying Ethernet services. Thus, any competitive constraint that may arise from providers of xWDM and other very high bandwidth retail LL services is already considered in the demand side substitution analysis above.

²²⁷ There is also a substantial number of international circuits delivered into data centres. These high bandwidth circuits are either directly connected to customer equipment in the data centre or connected to privately owned retail networks which are therefore, treated as international circuits and are excluded from our circuit count.

Comparison to TDM or Analogue LLs

- 4.99 Those providers of xWDM and other very high bandwidth retail LL services who also provide TDM or analogue LLs offer no additional constraint as they are already accounted for in the demand side substitution. Those providers who do not offer TDM or analogue LLs have to rely on wholesale products from Eircom and absent wholesale regulation, Eircom may be reluctant to offer a service especially when they are the only available network and competing at the retail level. Building a network for TDM or analogue LLs is not a viable option given the legacy nature of the technology involved and the requirement for a copper network.

Conclusion

- 4.100 Having considered the relevant demand side factors including functionality, pricing and consumer usage, as well as relevant supply side factors, ComReg's view is that xWDM and other modern interface LL services are in the same relevant retail product market as wired Ethernet LLs. As a result xWDM and other very high bandwidth LL services are not in the same relevant retail product market as the TDM and analogue LLs.

Is an Ethernet P2P Wireless LL an effective substitute for either a wired Ethernet, an xWDM, a TDM or an Analogue LL?

Introduction

- 4.101 P2P radio links are used mainly by fixed and mobile operators, broadcasters and utilities to provide transmission capacity and networks,²²⁸ as well as provide redundancy and back up for other networks.
- 4.102 Between 2009 and 2017 there has been a 26% increase in the number of P2P radio links licences issued by ComReg. It must be noted that most (24%) of this growth occurred between 2009 and 2014 and the number of licences issued has been relatively constant since then.

²²⁸ In providing transmission capacity, radio rather than cable is often the preferred solution where constraints such as costs, local topography and the need for access to remote rural locations are fundamental considerations. In such scenarios, radio links provide operators with the ability to roll-out rapidly and the capability to install transmission paths as and when required.

- 4.103 In the 2016 Consultation, ComReg set out the preliminary view that P2P radio links using Ethernet technology were part of the same retail market as wired Ethernet LLs, collectively known as the retail MI LL market. The implications for the WHQA markets was that ubiquitous access to wireless LLs across the country was a contributory factor to the then view that there was a single national MI WHQA Markets from a geographic perspective.
- 4.104 A number of Respondents (AirSpeed, ALTO, enet and Vodafone) to the 2016 Consultation rejected the assertion that wireless LLs were an effective substitute to wired LLs in the retail MI LL market, from an end-user perspective. They stated that many retail customers explicitly request fibre based MI services, therefore ruling out wireless LLs.
- 4.105 Following the collection and analysis of additional information, in light of these Respondents' views to the 2016 Consultation, ComReg revised its preliminary views in the 2018 Further Consultation, by excluding wireless LLs from the retail MI LL market. The additional information gathered included interviews with 17 large multi-site customers that confirmed the above Respondents' views, that most of them would not consider wireless LLs as an effective substitute to wired LLs where both were available. ComReg then proceeded to analyse market data, based on the 2016 SIRs to SPs, which provided more conclusive evidence to support this view.
- 4.106 Four Respondent's (BT, Eircom, enet and Vodafone) to the 2018 Further Consultation expressed views on this topic. Three (BT, enet and Vodafone) were in support of the exclusion of wireless LLs from the relevant retail MI LL market. One (Eircom) disagreed with ComReg's analysis that formed the basis for the change in preliminary conclusions. Respondents' views are set out in detail in Annex A.1.2, along with ComReg's consideration of them.
- 4.107 In paragraphs 4.108 to 4.142 below ComReg outlines the rationale for deciding that Ethernet P2P radio links based LL services are not an effective substitute for retail wired Ethernet, xWDM, TDM or Analogue based LLs, collectively referred to as wired LLs.

Demand Side Substitution

Product Characteristics

- 4.108 P2P radio links offer dedicated capacity over particular microwave frequencies that allow for the transmission of data in a symmetrical fashion. P2P radio links must be licenced by ComReg to gain access to the associated radio spectrum. In Ireland there is spectrum available in 20 different frequency bands²²⁹, from 1.3 GHz to 80 GHz, for the deployment of P2P radio links by operators.²³⁰
- 4.109 One of the issues with P2P radio links in other countries is the fact that congestion can limit the availability of P2P wireless links in densely populated areas. This arises from the fact that the same frequency (with the same polarisation) cannot be used by two links in the same geographic area due to spectrum interference problems. As such, this may limit the competitive constraint that P2P wireless links can place on wired retail LLs. Another is geographic distance. With large geographies multi-hop links would be required to connect distant locations due to the distance limitations of P2P microwave radio compared to that which can be easily achieved with fibre optic cable transmission systems.
- 4.110 In relation to congestion, in April 2014, ComReg closed the 13 GHz and 15 GHz spectrum bands to new radio link applications in the congestion areas covering certain parts of Greater Dublin because of the exhaustion of all available channels within the congested area.²³¹ In addition to this, increasing congestion in higher frequency bands in this same area has resulted in ComReg introducing higher fees for the affected bands (18 GHz and 23 GHz)²³².
- 4.111 Outside of this small, albeit relatively densely populated area, there are no issues surrounding spectrum congestion in Ireland. The number of P2P radio links do not appear to be weighted towards a particular geographic area such as rural areas.²³³

²²⁹ See ComReg Document 09/89R2 for more details on the spectrum bands available for fixed link operation - https://www.comreg.ie/media/dlm_uploads/2017/06/ComReg-0989R2.pdf.

²³⁰ The regulations governing the issue of Point to Point Radio Link licences are The Wireless Telegraphy (Radio Link licence) Regulations, 2009 (S.I. no. 370 of 2009).

²³¹ See Information notice 14/32. <http://www.comreg.ie/fileupload/publications/ComReg1432.pdf>.

²³² https://www.comreg.ie/media/dlm_uploads/2017/06/ComReg-0989R2.pdf.

²³³ See Zone A and Zone B split

Table 4: Multi-site customers' interview responses on wireless LLs product characteristics of wireless²³⁴

Interviewees' views	Interviewees no.	Interviewees %
No major prolonged service issues	10	62.5%
Experienced LoS issues	3	18.8%
Installation of antennae was not easily facilitated	2	12.5%
Service disruptions due to adverse weather conditions	2	12.5%
Negative opinion based on legacy issues	1	6.3%
Concerned about security of unlicensed wireless P2P links	1	6.3%
Bandwidth is not easily scalable	1	6.3%

4.112 A number of Respondents (ALTO, enet and Vodafone) to the 2016 Consultation disagreed with ComReg's preliminary position²³⁵, that the technical characteristics of wireless LLs were equivalent to those of wired LLs, with the exception of higher bandwidths (> 300 Mb/s)²³⁶. From a technical perspective ComReg maintained the same preliminary position in the 2018 Further Consultation, rejecting the criticisms outlined by the above, which were not supported by any material evidence. In addition to this, the 2017 interviews with multi-site customers, expressed satisfaction with the quality of wireless LLs, as outlined in Table 4, above.

²³⁴ 16 out of the 17 multi-site customers interviewed in 2017 responded to this question and multiple responses were received.

²³⁵ Technical limitations such as Line of Sight issues and licenced spectrum availability were raised.

²³⁶ This exception is currently estimated to be above 1 Gb/s.

- 4.113 Despite this, ComReg notes that among retail customers there is a perceived difference in quality in favour of wired over wireless LLs. 12 out of 17 multi-site customers interviewed in 2017 expressed their preference for using wired LLs as primary data connectivity services due to perceived better service availability and bandwidth scalability in comparison to wireless LLs. This is further supported by the analysis of multi-site customers purchasing patterns presented under the heading 'Intended Use'²³⁷.

Pricing

- 4.114 As is the case with wired based retail LLs, retail pricing is difficult to discern due to the fact that in many cases, retail prices are based on PoA and the actual price of the connection is based on a number of factors such as access costs²³⁸ but also the fact that the services provided over the access are the most relevant factors for pricing of services.²³⁹
- 4.115 However, in ComReg's view pricing of P2P radio based retail LLs appears to be similar to wired LLs. ComReg's analysis highlights that there are no substantial differences between average revenues per LL earned by SPs of wired and wireless LL, over a similar bandwidth range²⁴⁰.

Intended Use

- 4.116 As P2P radio link based retail LLs are used to provide uncontended, symmetric, high quality access similar to wired based retail LLs, for some retail customers there does not appear to be any significant discernible difference in their intended use. For other retail customers in both the public and private sector there is a distinct preference for wired over wireless LLs.
- 4.117 A comparison between wireless Ethernet LLs (wireless MI LLs) and wired Ethernet and xWDM LLs (wired MI LLs), is examined at paragraphs 4.119 to 4.121, below. This includes a review of the procurement criteria used by the HEAnet and the preferences of multi-site customers as indicated by their purchasing patterns. After this, a comparison between wireless Ethernet LLs and TDM and analogue LLs is examined in paragraphs 4.130 to 4.132, below.

²³⁷ Paragraphs 4.122 to 4.129 in this Decision.

²³⁸ In the case of P2P Wireless Links it is the cost of high sites, spectrum licenses, etc.

²³⁹ See paragraphs 3.104 to 3.108 above.

²⁴⁰ For bandwidths less than 1000 Mb/s examining those with circuits priced as physical only, there was less than a 10% difference in average revenues between wired and wireless MI LLs.

Comparison to Wired Ethernet and xWDM LLs

Public Sector

- 4.118 Public Undertakings such as State bodies, courts, hospitals, and schools are large purchasers of P2P radio link based retail LLs. It is noteworthy to consider the experience of one of the largest purchasers of retail LLs in the State – HEAnet.
- 4.119 HEAnet manages the ICT needs of the Irish public education sector including primary, secondary and 3rd level institutions connectivity requirements.²⁴¹ In relation to secondary schools, HEAnet organises a tender for the delivery of a minimum of 100Mb/s symmetric connections for approximately 800 schools, and 20% of them have a minimum requirement of 200Mb/s.²⁴² The HEAnet have established a tender framework panel for providers of LLs to secondary schools, which was technology neutral. The following SPs are on this panel [§< ██████████], [§< ██████████], [§< ██████████], [§< ██████████] and [§< ██████████] and all have the same SLAs.²⁴³
- 4.120 Significantly, when the HEAnet's issues a mini-tender using the panel the competition award criteria tenders contains two categories, 1) product access technology – 15% and 2) costs – 85%. Product access technology is fully awarded to LL offers based on fibre services and is zero for all other LL media including wireless services. This means that non-fibre tenders needs to be over 21% cheaper than any rival fibre based LL service to reach a higher score in the tender evaluation.
- 4.121 HEAnet notes that its procurement policy follows the instruction of the schools, on whose behalf HEAnet operate. The schools perceive wireless as a good option for resilience purposes but as an inferior medium for delivery of a primary LL service²⁴⁴.

²⁴¹ See <http://www.heanet.ie/schools> for more details.

²⁴² The specification for the contracts were similar to those of other End Users of retail LLs including high quality SLA's and penalties for non-performance in relation to provisioning and service assurance.

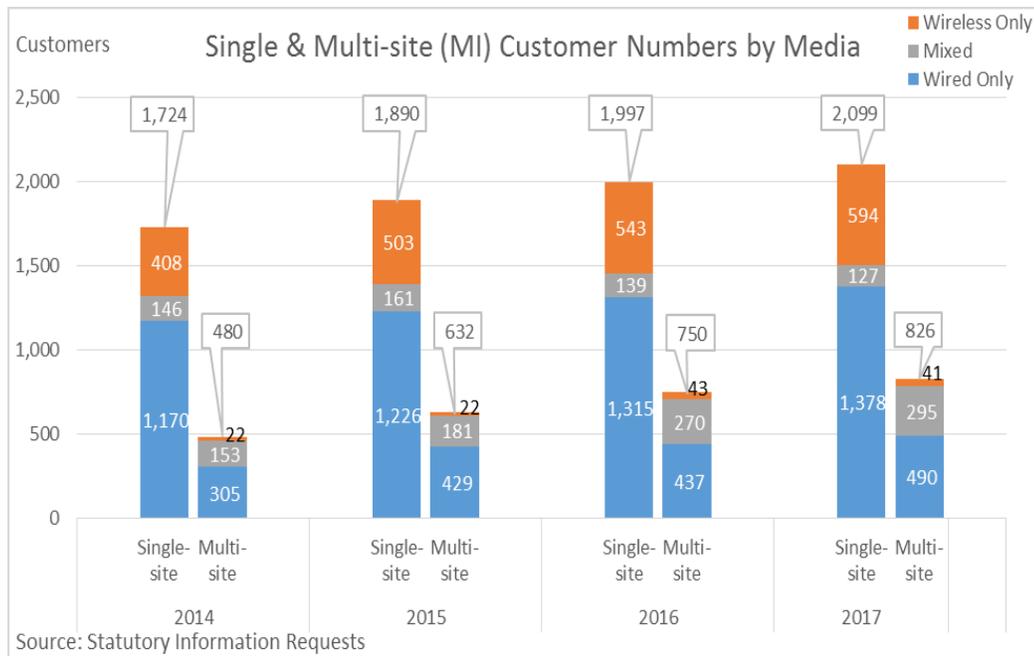
²⁴³ SPs were allowed to bid for groups of schools in order to exploit economies of scale and density in the tender process.

²⁴⁴ Meeting with HEAnet September 2018.

Multi-site Customers

4.122 The subsection on Customer Profiles in Section 3.5²⁴⁵, above, highlighted that the majority (over 80% in 2017) of retail LL circuits are consumed by multi-site customers, even though they account for a minority of the total number of customers (less than 30% in 2017). This subsection will analyse the media consumption patterns of multi-site customers focusing on MI circuits, which are the technology that dominate the sales of wireless circuits.

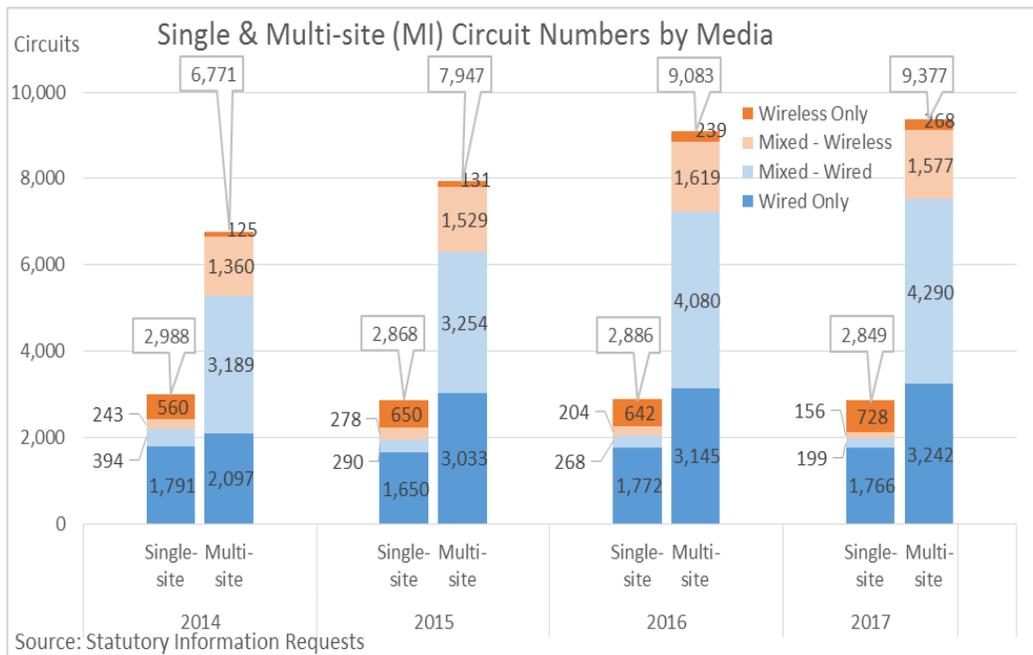
Figure 38: Single and Multi-site (MI) Customer Numbers by Media



4.123 Figure 38 above shows the trends for the subset of single-site and multi-site customers consuming MI (Ethernet, xWDM and other high bandwidth technology) circuits are similar to the trends including all wired technology. Multi-site customers represent 28% of all customers consuming MI in 2017. The majority of these multi-site customers purchase only wired MI LL circuits, while only 5% on average purchase solely wireless MI LLs between 2014 and 2017.

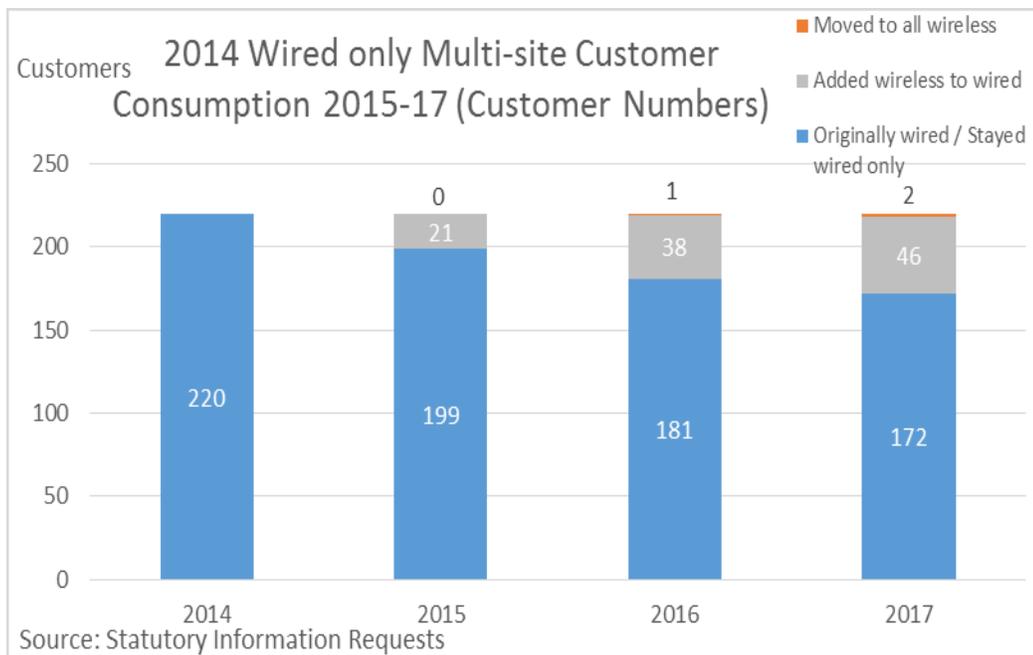
²⁴⁵ See paragraphs 3.78 to 3.79 of this Decision.

Figure 39: Single and Multi-site (MI) Circuit Numbers by Media



4.124 Figure 39, above, shows that multi-site retail LL customers’ purchase the majority of wired MI LLs circuits (77% in 2017). Those multi-site customers purchasing wireless only LLs accounted for between just 2-3% of all MI circuits purchased by multi-site customers, between 2014 and 2017. Further to this, Figure 39 shows that the vast majority of MI LLs purchased by multi-site customers were wired, being 78% to 80% from 2014 to 2017.

Figure 40: Switching pattern of wired MI only multi-site customers from 2014 to 2017

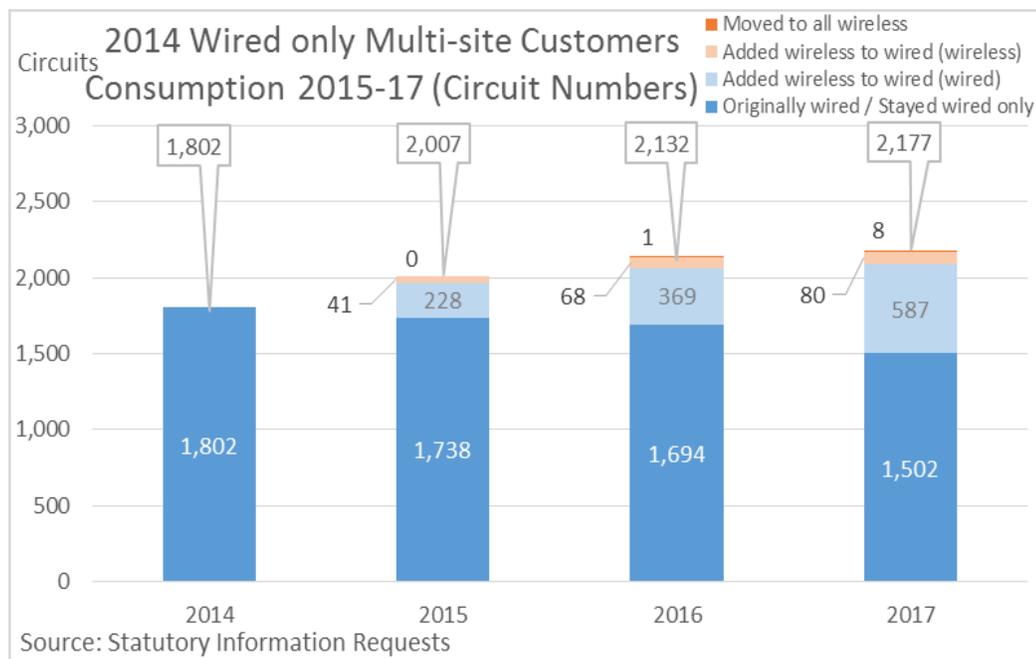


4.125 Figure 40 above, tracks the purchasing decisions of 220 multi-site customers who consumed wired MI (Ethernet and/or xWDM) LLs in 2014 and that also consumed either wired or wireless MI LLs in each of the subsequent 3 years, 2015 to 2017. These customers who purchased only wired LLs in 2014 are divided into three categories in the subsequent 3 years:

- (a) Multi-site customers that continued to purchase only wired MI LLs (in blue);
- (b) Multi-site customers that added wireless MI LLs to their purchase of wired MI LLs (purchasing both wired and wireless LLs, in grey); and
- (c) Multi-site customers that migrated to purchasing wireless MI LLs only (in orange).

4.126 This shows that the majority (78%) of these customers continued to purchase only wired MI LLs by 2017. Those customers deciding to add wireless to their existing purchases of wired MI LLs, represented 21% by 2017. Finally, over this period only 1% of these customers switched their wired MI LLs entirely to wireless MI LLs by 2017. This indicates a reluctance by the significant majority of multisite customers to see wireless Ethernet LLs as an entire substitute for wired Ethernet or xWDM LLs, however, it suggests that some such customers do purchase wireless MI LLs.

Figure 41: Switching pattern of multi-site customers from 2014 to 2017 – MI Circuits



4.127 Figure 41 above shows the number and growth of LLs purchased by the sample of multi-site customers identified in Figure 40. This follows the same categories used in Figure 40, while breaking out the 'Added wireless to wired' (grey) category to separate out the number of wired (light blue) and wireless (light orange) MI LLs purchased by these multi-site customers.

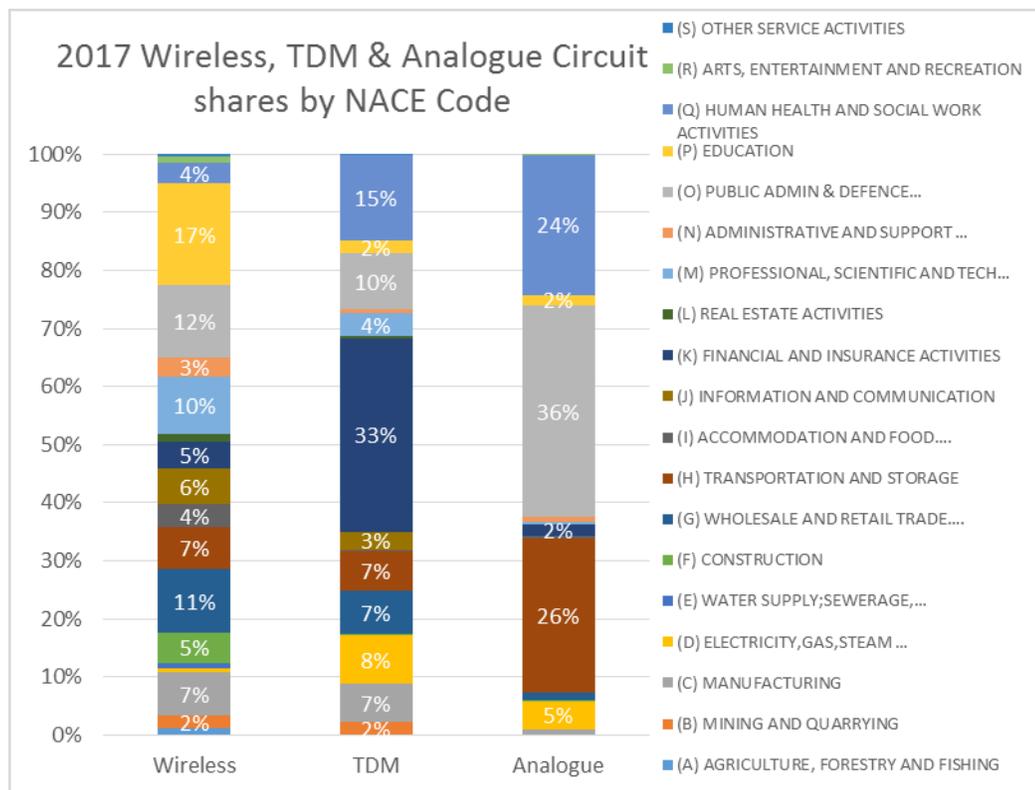
- 4.128 This shows that by 2017 the wired only customers (blue) accounted for 69% of MI LLs consumed by this group of multi-site customers. Those that added wireless to their wired MI LLs consumed over 30% of the group's LLs in 2017, of which 27% (light blue) was wired MI LLs. Finally by 2017 less than 0.5% (orange) of MI LLs consumed were by customers consuming only wireless MI LLs. Overall, the vast majority (96%) of MI LLs purchased after 3 years were wired Ethernet and/or xWDM LLs ('Stayed wired only' and 'Added wireless to wired (wired)').
- 4.129 The above analysis supports the view that the majority of multi-site customers are unlikely to see wireless Ethernet LLs as a substitute for wired Ethernet or xWDM LLs due to a perceived difference in quality between both types of media.

Comparison to TDM or Analogue LLs

- 4.130 Many of the main differences identified in the assessment of TDM and analogue as a substitute of wired Ethernet LLs, apply in a comparison between wireless Ethernet LLs with TDM and Analogue LLs. These included the disparity in bandwidth associated / used with each technology. In 2017 the majority of TDM and analogue LLs were under 2MB/s while the average bandwidth for wireless Ethernet LLs was 95Mb/s. The former is more likely to be used for low bandwidth services such as remote network monitoring, critical system control and secure transactional applications. The latter is more likely to be used for networking, cloud and other such services requiring higher bandwidths speeds²⁴⁶.

²⁴⁶ As a backup or redundancy for those customers who have a preference for wired MI LLs to be their primary service.

Figure 42: Profile of Businesses Consuming Wireless, TDM and Analogue Circuits in 2017



4.131 Figure 42 compares the profile of businesses that purchase wireless Ethernet, TDM and analogue LLs. This shows that the consumption of TDM and analogue LLs are concentrated in a smaller set of business categories than the consumption of wireless Ethernet LLs. The higher concentration of both TDM and Analogue circuits within certain business categories is likely to be a result of the overall decline in the consumption of these technologies. Some business categories are going to migrate away from these legacy technologies at a slower pace than others, in part due to the switching costs involved, and this results in higher concentrations seen in Figure 42.

4.132 Overall, wireless Ethernet LLs are unlikely to be seen as a substitute to TDM and Analogue LLs when the same technology over a wired medium (wired Ethernet LLs) is already determined to be part of a different market (a declining market with legacy technology)²⁴⁷. In addition to this, the perceived quality concerns that multi-site consumers have with wireless Ethernet LLs²⁴⁸ would be another reason for the lack of substitutability with TDM and Analogue LLs.

²⁴⁷ See paragraphs 4.41 to 4.86 of this Decision.

²⁴⁸ See paragraphs 4.118 to 4.129 of this Decision.

Conclusion on Demand Side Substitution

- 4.133 Although the product characteristics of wireless Ethernet LLs demonstrate only limited differences from wired LLs (such as distance, line-of-sight and congestion issues, which may limit their ability to provide equivalent service quality levels to those wired LLs), the overwhelming majority of retail end-users do not consider them to be a substitute for wired LLs .
- 4.134 In particular, the intended use of wireless Ethernet LLs is different to those of wired LLs. When compared to wired Ethernet and xWDM and other high speed LLs, the largest consumer group, multi-site customers, show a distinct preference for the latter. This is most explicitly evident in the HEAnet's 21% premium scoring for tender submissions for fibre over other medium for LLs.²⁴⁹ When compared to TDM and Analogue LLs, the typical bandwidth differences and the legacy nature of the technology undermine substitutability with wireless Ethernet LLs.
- 4.135 The above evidence would suggest that a HM of either wired Ethernet, xWDM and other high speed LL services or of TDM and Analogue LL services is likely to be able to sustain a profitable SSNIP in the range of 5-10% (up to 20% in the case of retail customers like the HEAnet), above the competitive level without a substantial number of customers switching to wireless LL services.

Supply Side Substitution

Comparison to Wired Ethernet or xWDM LLs

- 4.136 Those providers of wireless Ethernet LLs who also provide wired Ethernet or xWDM and other high speed LL services provide no additional constraint as they are already accounted for in the demand side substitution. Those that are wireless only LLs providers have two options when providing wired Ethernet or xWDM and other high speed LL services, namely either 1) purchase wholesale access to another SPs network or 2) build a network capable of offering the service.
- 4.137 Option 1 would represent a weaker form of competitive constraint as it involves no additional infrastructure/network, especially from wholesale providers who are mostly retail competitors. Eircom is the SP that a wireless only LL provider would be most dependant on and absent wholesale regulation, Eircom may be reluctant to offer a service especially when they are the only available network and competing at the retail level.

²⁴⁹ Based on meeting with HEANnet; October 2018

- 4.138 Option 2 would involve significant levels of upfront capital investment which may be sunk and would require a significant lead in timeframe for build. This would in all likelihood take much longer than the time constraints associated in responding to tenders issued by most retail customers, thereby undermining any supply side constraint
- 4.139 Overall, supply side substitution does not represent an effective constraint on a HM supplier of Ethernet LL services over a wired medium sustaining a SSNIP in the range of 5-10% above the competitive level without a wireless only SPs entering the provision of wired Ethernet or xWDM and other high speed LL services.

Comparison to TDM or Analogue LLs

- 4.140 Those providers of wireless Ethernet LLs who also provide TDM or analogue LLs offer no additional constraint as they are already accounted for in the demand side substitution. Those providers who do not offer TDM or analogue LLs have to rely on wholesale products from Eircom and absent wholesale regulation, Eircom may be reluctant to offer a service especially when they are the only available network and competing at the retail level. Building a network for TDM or analogue LLs is not a viable option given the legacy nature of the technology involved and the requirement for a copper network.
- 4.141 Overall, supply side substitution does not represent an effective constraint on a HM supplier of wired Ethernet LL services sustaining a SSNIP in the range of 5-10% above the competitive level without wireless only SPs providing wired LL services.

Conclusion

- 4.142 The above analysis supports the change in ComReg's preliminary view from the inclusion of wireless LLs in the retail MI product market in the 2016 Consultation to its exclusion from the retail MI product market in the 2018 Further Consultation.
- 4.143 The main objection to this revision in preliminary views came from Eircom in their submission to the 2018 Further Consultation, outlined in A.1.3. One of the key concerns that Eircom had with the revised SSNIP analysis was that it was based on a small sample size (responses to interviews with just 17 retail multi-site customers).
- 4.144 While ComReg considers these interviews an insightful source of data, it is the analysis of market wide data (SIR responses from SPs) that has provided the primary evidence in the assessment of wireless Ethernet LLs as a substitute to the various wired LLs. ComReg has expanded the analysis carried out in the 2018 Further Consultation from the analysis of a single year of data (Q2 2016) to the analysis of 2014 to 2017.

- 4.145 Having considered relevant demand side factors including functionality, pricing and consumer usage, as well as relevant supply side factors, ComReg's position is that wireless Ethernet LLs are not likely to be an effective substitute for either wired Ethernet and xWDM LLs or TDM and Analogue LLs.

Is Business Broadband an effective substitute for either a wired Ethernet, an xWDM, a TDM or an Analogue LL?

Introduction

- 4.146 Broadband services are used by business customers for connections to the internet, e-mail, cloud storage and other data services. Broadband services are generally asymmetric (i.e. lower upload than download speeds) and contended services with speeds that are often lower than that found with wired Ethernet retail LL services. Furthermore, the SLAs that are provided by SPs for Broadband are generally of a lower standard than for wired Ethernet retail LL services.
- 4.147 In Ireland, retail broadband services to businesses are provided over various technologies and platforms:
- (a) Copper based broadband ('xDSL');
 - (b) Broadband provided over Fibre to the cabinet or home/building (referred to collectively as **FTTx**);
 - (c) Broadband provided over a Cable modem;
 - (d) Mobile broadband provided over a 3G/4G mobile network;
 - (e) Fixed Wireless Access ('**FWA**') networks; and
 - (f) Satellite.
- 4.148 In the 2016 Consultation, ComReg set out the preliminary view that Business Broadband was not part of any of the retail LL markets. One Respondent (enet) agreed with ComReg's preliminary position while two other Respondents (Verizon and Eircom), citing the advancements in broadband technology and its lower price, disagreed with ComReg's preliminary position.
- 4.149 After consideration of the above submissions, ComReg maintained its preliminary view that Business Broadband was not part of any of the retail wired LL markets in the 2018 Further Consultation.
- 4.150 Two Respondent's (BT and Vodafone) to the 2018 Further Consultation expressed views on this topic. Both were in support of the exclusion of business Broadband from any of the retail wired LL markets.

- 4.151 In paragraphs 4.152 to 4.178, below, ComReg presents information and evidence to support its view that Business Broadband products are not an effective substitute for any of the retail wired LL markets.

Demand Side Substitution

Product Characteristics

- 4.152 As highlighted in Table 2 above, NGA broadband²⁵⁰ services running a download speed of up to 1Gbs and an upload bandwidth of up to 100 Mb/s could potentially be considered as broadly similar in bandwidth terms to some wired Ethernet LL services. However, broadband services typically do not offer bandwidth guarantees, with service speeds provided on an up-to basis and are typically below this headline speed. See paragraphs 3.45 to 3.55, above, for an overview of the NGA and DOCSIS networks that are used to provide business broadband as well as retail LLs.
- 4.153 The 2017 Market Research indicated that the average download speed cited by surveyed business broadband purchasers, that were aware of their service download speed, was 47 Mb/s²⁵¹. This compares to 321 Mb/s average download speed by purchasers of LLs in 2017²⁵². This suggests that bandwidth provided by broadband services is sufficiently different to the identified bandwidth requirements of the majority of businesses currently purchasing retail LLs, in particular wired Ethernet and xWDM and other high speed LLs.
- 4.154 Moreover, there are also a number of differences of other service features of Business Broadband compared to LLs. These include differences in terms of contention, latency and jitter, the level of security, resilience options, SLAs and synchronisation support. Where these features are valued by potential customers, it is unlikely that broadband service will be a close substitute to any of the wired LLs. For some lower bandwidth wired Ethernet and TDM LL services, NGA and cable broadband may be comparable in terms of speed and higher than the bandwidth of analogue LLs, but specific quality issues are likely to be important for a sizeable portion of customers.

²⁵⁰ FTTC, FTTH and cable broadband.

²⁵¹ 2017 WLA/WCA Market Research: Appendix 5 of ComReg Document 18/94, Slide 19.

²⁵² See Figure 29, average excludes 100Gb/s lines.

- 4.155 For example, Eircom's standard regulated wholesale LL service offers 99.95% service availability or 4 hours of service downtime per year. This compares to 99.5% or up to 1.8 days annual service downtime for its regulated standard wholesale FTTC broadband service²⁵³. This is a material difference for businesses who consider connectivity as a critical input for their day to day operations.
- 4.156 Also, from inspecting the different products descriptions, other SPs were not offering higher specification SLA's for their broadband products, including those provided over LLU or their own network inputs.

Table 5: Product characteristics considered as 'very important' when selecting service provider

	Broadband (%)	Ranking	Leased lines (%)	Ranking
Availability	73%	1	82%	1
Resilience	51%	4	61%	2
Contention	39%	5	53%	3
Download speed	59%	2	53%	3
Upload speed	54%	3	47%	4
Latency	39%	5	46%	5
Jitter	38%	6	44%	6
Symmetry	39%	5	37%	7

- 4.157 As part of ComReg's 2014 Market Research, survey Respondents purchasing broadband and LL services were asked to rank product characteristics of these services in terms of their importance when selecting a SP²⁵⁴. Table 5 above illustrates that the top three attributes (considered as 'very important') for LL users are service availability, resilience and contention; while for broadband users the top three attributes are service availability, download speed and upload speed.

²⁵³ Eircom is obliged not to discriminate between its wholesale offering to other SPs and that which it provides to its own retail arm.

²⁵⁴ The 2014 Market Research, Slides 33 and 87.

- 4.158 This suggests that purchasers of LLs are likely to place a higher value on service quality aspects that are important for multi-site connectivity, VoIP and data services uses compared to purchasers of broadband services. Thus, it is likely that LL users would not consider broadband services as an effective alternative, because these services have inferior service quality characteristics compared to LLs.
- 4.159 The 2014 Market Research also indicated that LL purchasers are more likely to have high quality SLAs when compared to broadband purchasers. For example, 40% of broadband purchasers surveyed indicated that they definitely had a SLA, with 17% of those having a bespoke SLA²⁵⁵. In comparison, 83% of LL purchasers surveyed had an SLA, with 38% of those having a bespoke SLA²⁵⁶.
- 4.160 Substantial differences between broadband and LL services also exist in terms of SLA content. For example, 78% of retail LL customers had a specifically required target date for delivery of a new service (compared with 49% for broadband customers) and 43% of retail LL customers had compensation mechanisms for breaches of the agreement compared to 19% for broadband customers²⁵⁷.
- 4.161 Thus, it is ComReg's view that while NGA broadband could potentially be regarded as broadly similar in terms of bandwidth to a lower bandwidth wired Ethernet and TDM LL services, there are discernible differences in other product characteristics such as service availability, the quality of contention, resilience and symmetrical bandwidth.

Pricing

- 4.162 The marketing of business broadband helps provide an understanding of how SPs position broadband services relative to wired Ethernet LL services and hence, whether they may be targeting different markets/customer segments when offering broadband and wired LL services.

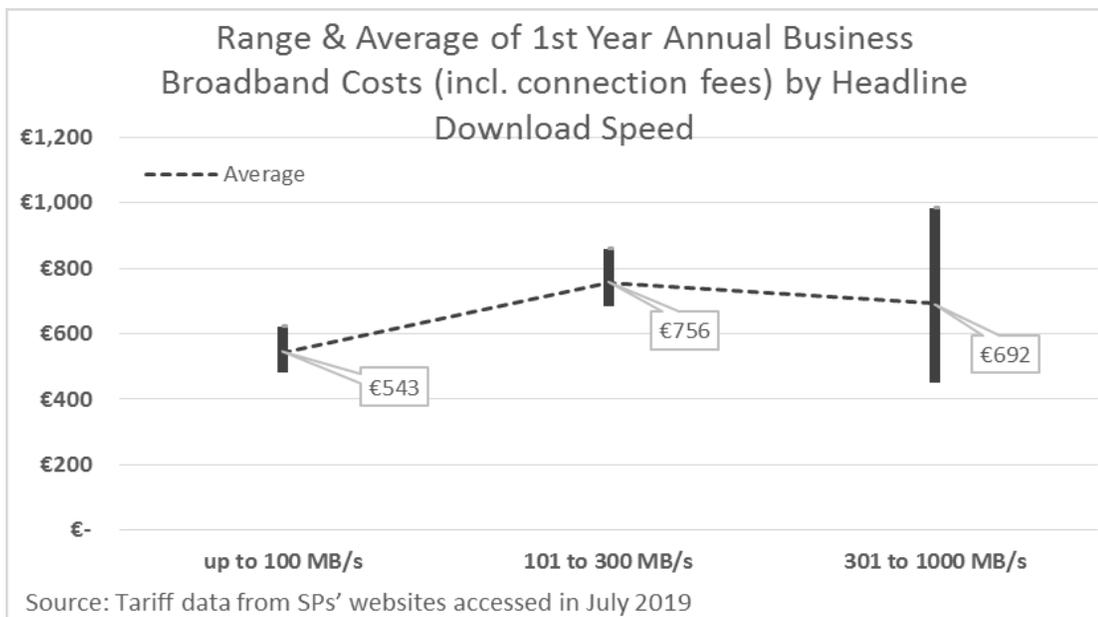
²⁵⁵ The 2014 Market Research, Slides 35 and 36.

²⁵⁶ The 2014 Market Research, Slides 92 and 93.

²⁵⁷ The 2014 Market Research, Slides 37 and 94.

4.163 In this regard, ComReg notes that SPs do not usually market business broadband as an alternative to a retail LL. A common marketing approach for SPs providing both broadband and LLs²⁵⁸ is to match the typical End User types to these services. Businesses are often distinguished as small or large or by the number of employees with varied ranges of requirements so different data services are offered to these businesses²⁵⁹. In general, smaller firms with less business critical services or multi-site home-worker connectivity are offered asymmetric broadband whereas larger businesses running business-critical services are offered more expensive LLs. Thus, SPs’ marketing suggests that broadband and wired Ethernet LL services are aimed at separate groups of end-users who demand different service characteristics.

Figure 43: Average Annual Business Broadband Costs by Headline Download Speed



²⁵⁸ Such SPs include Eircom, BT Ireland, Virgin Media, Vodafone, Magnet and other SPs.

²⁵⁹ See <https://business.eir.ie/>, <https://www.virginmedia.ie/business/> and <https://www.magnetnetworks.com/>. Information from these websites retrieved on 9th July 2019.

- 4.164 In addition to looking at SPs' marketing of broadband and LL products, ComReg also researched publicly available retail prices of these services. ComReg analysed broadband tariffs offered by three SPs and identified 13 tariff plans or bundles that included a broadband service aimed at business broadband users. The 13 examined tariffs offered speeds ranging from 100Mb/s to 1,000Mb/s, with most offering an unlimited download allowance. Figure 43 above shows the average annual cost for these 13 tariffs categorised by advertised download speed. Figure 43 also shows the range of the monthly costs for business broadband tariffs, for each headline speed.
- 4.165 In general, it can be observed that broadband services with higher speeds are associated with higher prices for a given SP. However, for each broadband speed, there is an overlap with the price range associated with other similar headline download speeds. ComReg notes that typically, the annual average price of asymmetric broadband rarely exceeds €900. In contrast, the lowest cost for a 10 MB/s Ethernet LL in Table 3, above, is €4,410 thus, suggesting limited overlap between prices of broadband and wired LL services.
- 4.166 It is also important to note that purchasers of wired Ethernet LL services considering migrating to broadband services would face similar switching barriers to that which exist when switching between LL with different interfaces. As highlighted in paragraph 4.60 above, such costs include:
- (a) changes required to customer premises equipment;
 - (b) the potential for service disruption; and
 - (c) parallel operation whilst the new service is tested.
- 4.167 The impact of switching costs will vary by type of LL purchaser. For businesses purchasing numerous wired Ethernet LL services or using specialised applications that require low latency/jitter and/or uncontended service the switching costs to Business Broadband are likely to be substantial.

Intended Use

- 4.168 As part of the 2017 Market Research, survey Respondents were asked to indicate what they are using their broadband and/or LL services for. Table 6 below indicates that broadband and LLs appear to be used for different applications by consumers. In particular, broadband is mostly used for email and internet access with 98% of Respondents purchasing broadband using their service for this purpose²⁶⁰. Retail LLs, on the contrary, are often used for multiple purposes, including email and Internet, disaster recovery, data services and connectivity between premises.

Table 6: Use of primary data connectivity service

	Broadband (%)	Ranking	Leased lines (%)	Ranking
Email and internet	98%	1	80%	1
Data services	29%	2	39%	3
Connectivity between premises	20%	3	22%	5
Employee remote access	16%	4	34%	4
Disaster recovery services	16%	5	50%	2
Voice - VoIP	11%	6	8%	5
Other	3%	7	20%	6

- 4.169 The profile of businesses purchasing broadband and LLs also indicates that these services are used for different purposes. Figure 44, below, indicates that the tendency to purchase LLs increases with the size of the business. For example, 67% of surveyed micro businesses (businesses with 1 to 10 employees) purchase broadband via a landline, but only 9% purchase LLs²⁶¹. In contrast, 51% of large businesses (businesses with over 250 employees) purchase broadband via landline and 75% purchase LLs²⁶².

²⁶⁰ The 2017 Market Research, Slide 28.

²⁶¹ The 2014 Market Research, Slide 13.

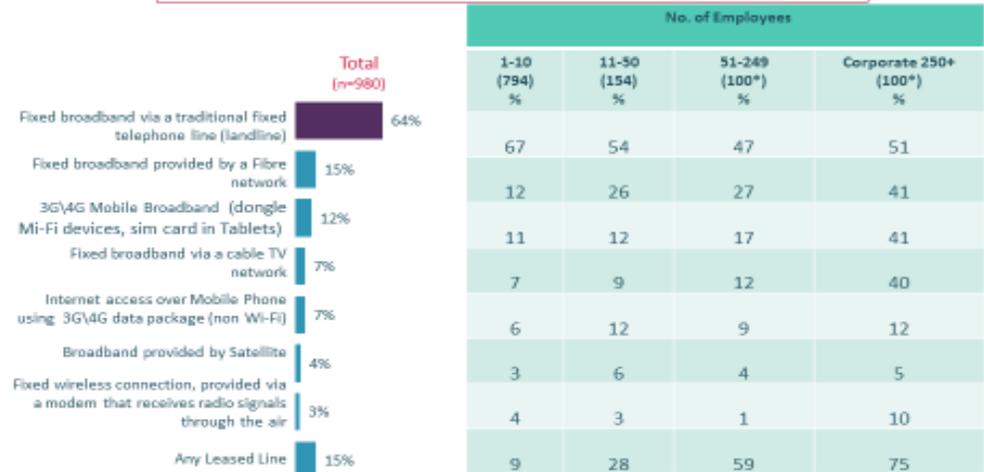
²⁶² The 2014 Market Research, Slide 13.

Figure 44: Access Type by Company Size

Access Type by Company Size (Multiple Responses)

(Base: All Respondents Who Use Data Connectivity Services, N= 980)

Q.8 Can I ask you, in your business which of the following means of accessing services are used?



* = base expressed in unweighted terms throughout the presentation
 64% of Irish business connects to broadband via a landline. Use of this broadband access means is highest for the Micro business sector (1-10 Employees) at 67%.



4.170 As such, it can be seen that there is a distinct demand for LL, including wired LL services, and business broadband services

Conclusion to Demand Side Substitution

4.171 Overall, in terms of product characteristics there are discernible differences between NGA broadband and wired LL services, such as service availability, the quality of SLAs, fault repair, contention, etc. The gap in pricing of broadband and wired LL services, indicates limited overlap between both types of products. In addition to this market research suggests that the users of both product types use them for different applications and that there is a different profile of businesses consuming each product.

4.172 This evidence would suggest that a HM of both Ethernet, xWDM and other high speed LL services or a HM of TDM or Analogue LL services is likely to be able to sustain a profitable SSNIP in the range of 5-10% above the competitive level.

Supply-Side Substitution

Comparison to Wired Ethernet or xWDM LLs

- 4.173 Those providers of Broadband who also supply wired Ethernet or xWDM and other high speed LL services provide no additional constraint as they are already accounted for in the demand side substitution. Those Broadband only providers have two options when providing wired Ethernet LLs either 1) purchase wholesale access to another SPs network or 2) build a network capable of offering the service. Neither of these options are realistic options, for the same reasons outlined for the lack of supply side substitution of Ethernet P2P Wireless, in paragraphs 4.136 to 4.139 above.
- 4.174 Overall, supply side substitution by a business broadband provider is not likely to prevent a HM supplier of Ethernet LL services over a wired medium from profitably sustaining a SSNIP.

Comparison to TDM or Analogue LLs

- 4.175 Those providers of Business Broadband who also provide TDM or analogue LLs offer no additional constraint as they are already accounted for in the demand side substitution. Those providers who do not offer TDM or analogue LLs have to rely on wholesale products from Eircom and absent wholesale regulation, Eircom may be reluctant to offer a service especially when they are the only available network and competing at the retail level. Building a network for TDM or analogue LLs is not a viable option given the legacy nature of the technology involved and the requirement for a copper network.
- 4.176 Overall, supply side substitution does not represent an effective constraint on a HM supplier of TDM and Analogue LL services sustaining a SSNIP in the range of 5-10% above the competitive level without Business Broadband only SPs entering the provision TDM and Analogue LL services.

Conclusion

- 4.177 Having considered relevant demand side factors including functionality, pricing and consumer usage, as well as relevant supply side factors, ComReg's view is that broadband services are not likely to be a sufficiently effective substitute for wired LLs. Broadband is therefore excluded from any potential retail LL market.

- 4.178 ComReg acknowledges that for many SMEs the parameters of service offered by broadband services are likely to be sufficient to meet their business requirements and that bandwidths supported by NGA broadband can match and exceed the bandwidths of lower bandwidth LLs. However, there remains a sufficient difference in other product characteristics that appear to be important to purchasers of LL (such as symmetrical up/down speed, high service availability, resilience and low latency/jitter etc.). These characteristics are sufficiently important to LL users such that they are unlikely to switching in sufficient numbers to business broadband services in the event of a price increase.

Is 'Ethernet in the First Mile' (EFM) an effective substitute for either a wired Ethernet, an xWDM, a TDM or an Analogue LL?

Introduction

- 4.179 EFM is a set of specifications that allow SPs to run Ethernet over multiple bonded copper pairs in the access segment to connect the "first mile" from the End User's premises to the nearest node. In Ireland, SPs lease Eircom's copper local loops to connect customer premises to the nearest local serving Exchange via a product known as Local Loop Unbundling ('LLU'). From Exchange locations connectivity can then be provided in a similar manner to LLs, using the SPs' backhaul and core transmission networks. EFM is currently supplied by BT, Magnet and Digiweb using Eircom's LLU products²⁶³ and the number of circuits are negligible²⁶⁴ with respect to the retail LL markets.
- 4.180 In the 2016 Consultation, ComReg set out the preliminary view that EFM was part of the Ethernet, xWDM and other high speed LL product market but not part of the TDM and Analogue LL product markets. There were no comments from Respondents to the 2016 Consultation on this preliminary view. The 2018 Further Consultation maintained the same preliminary view as that in the 2016 Consultation and again ComReg received no comments on this from Respondents to the 2018 Further Consultation.
- 4.181 In paragraphs 4.182 to 4.195, below, ComReg presents information and evidence to support its view that EFM is a substitute for the focal product of Ethernet over a wired medium.

²⁶³ Eircom is obliged to provide unbundled local loops on regulated terms as a remedy for its SMP in the Wholesale Local Access (WLA) market as per ComReg Decision D18/94.

²⁶⁴ Less than 200 Circuits.

Demand Side Substitution

Product Characteristics

- 4.182 EFM exhibits characteristics that are similar to characteristics of certain wired Ethernet LL services as highlighted in Table 2 above and thus, are comparable to lower bandwidth wired Ethernet LL services.
- 4.183 EFM and wired Ethernet LL services have an Ethernet interface which further increases similarity between these two services. Symmetrical upload and download speeds (up to 20 Mb/s), low or absent contention along with good quality resilience and low jitter are all supported by the EFM platform. Moreover, higher quality SLAs than those typically available from a Business Broadband perspective are also available for EFM based products. While, synchronisation is generally not supported by EFM, it is technically feasible to support this aspect of the service over EFM.²⁶⁵
- 4.184 The legacy applications and equipment associated with TDM and Analogue LLs means that there would be switching costs that would be a barrier to moving to an Ethernet based service such as EFM.

Pricing

- 4.185 There is no publicly available retail pricing information on EFM services. However, ComReg is aware that pricing of EFM is consistent with SPs' marketing which positions EFM as an alternative to a wired Ethernet LL services thus, suggesting that there is potentially more of a degree of overlap between prices of EFM and low bandwidth LL services, than in comparison to prices of business broadband services.

Intended Use

- 4.186 The marketing of EFM packages helps provide an understanding of how SPs position these services relative to LLs and hence, whether they may be targeting different markets/customer segments when offering EFM and wired Ethernet LL services.
- 4.187 In this regard, ComReg notes that SPs' marketing of EFM suggests that it is likely to be seen as a lower cost wired Ethernet LL service. For instance, BT notes that:

²⁶⁵ See <https://www.btireland.com/content/dam/btireland/documents/general/Data-sheet-Ethernet-First-Mile.pdf> for details.

“BT can now give you greater connectivity and resiliency options while increasing its affordability for more sites than previously possible.”²⁶⁶.

4.188 BT also notes that:

“A key advantage is that with EFM, you can now aggregate multiple ethernet-based services with a single access connection at sites that previously could only be reached via legacy access technologies.”²⁶⁷

4.189 BT differentiates the service only in terms of the access platform utilised for service delivery.

“EFM gives you symmetric and reliable high-speed access but unlike our fibre Etherways, EFM uses existing copper lines to connect you via our existing BT footprint to our backbone Ethernet core”²⁶⁸.

4.190 Thus, EFM LL marketing seems to suggest that this service is positioned as a substitute for certain wired Ethernet LL services.

Conclusion to Demand Side Substitution

4.191 EFM and low bandwidth wired Ethernet LL services up to 20MB/s have sufficiently similar product characteristics, pricing and are used in a similar way by End Users. However, it should be noted that there are less than 200 such circuits in place as of the end of 2018²⁶⁹.

²⁶⁶ See <https://www.btireland.com/content/dam/btireland/documents/general/Data-sheet-Ethernet-First-Mile.pdf>. Information from this website retrieved on 4th July 2019. Other SP providing retail EFM services market the product in the same way.

²⁶⁷ *Ibid.*

²⁶⁸ *Ibid.*

²⁶⁹ As discussed in Section 5 below, given that there are so few circuits left, ComReg does not intend to impose any obligation on an SMP operator to provide EFM in any market that is subject to ex-ante regulation.

Supply-Side Substitution

- 4.192 ComReg notes that supply side substitution appears technically possible, in that a LLU operator which is not currently providing EFM-based Ethernet services (which, as noted in paragraphs 4.182 to 4.184 above, EFM exhibits characteristics that are similar to characteristics of LL services) could begin to do so relatively quickly and easily. Supply side substitution could potentially broaden the relevant markets only in instances where the constraint arising from the supply side substitution provides an additional constraint that was not already considered as part of demand side substitution analysis i.e., SPs that are already providing services considered to be part of the relevant markets cannot provide an additional supply side substitution constraint.
- 4.193 In this regard, ComReg notes that three largest purchasers of LLU products are BT, Digiweb and Magnet. The supply-side substitution from these operators would not be relevant as these operators supply both retail LL and EFM services. Therefore, any competitive constraint arising from these operators' presence in the provision of wired LL services is already taken into account. The remaining LLU operators (3PlayPlus and Colt) have negligible footprints at Eircom's Exchanges and thus, are unlikely to provide a services of a sufficient scale to provide a competitive constraint.
- 4.194 As such, only those SPs that are currently involved in the supply of retail LLs are also in a position to provide EFM based services.

Conclusion

- 4.195 EFM, as noted in paragraphs 4.182 to 4.183 above, exhibits characteristics that are similar to the characteristics of wired Ethernet LL services and from the end-user perspective has the same interface as an Ethernet based LL. Pricing and marketing evidence would suggest that EFM is likely to be considered similar to lower priced and low bandwidth wired Ethernet LL services.²⁷⁰

²⁷⁰ Due to the fact that there are less than 200 such circuits in place, ComReg does not intend to impose an obligation to provide EFM services in any regulated markets.

Is dark fibre an effective substitute for either a wired Ethernet, an xWDM, an EFM, a TDM or an Analogue LL?

Introduction

- 4.196 Dark fibre refers to rental of fibre optic cables (or pairs of fibre within a cable) owned by a network operator. This is a passive, physical infrastructure product that requires the End User to provide the electronic equipment (switches, multiplexers, repeaters etc.) necessary to transmit data over the fibre cable. In contrast, LL are considered to be 'active' products since they are provided to end-users with the electronics and management to enable an end-to-end connection between locations.
- 4.197 In the 2016 Consultation, ComReg set out the preliminary view that dark fibre was not part of any of the retail LL markets. Two Respondents (BT and Eircom) noted ComReg's preliminary position and commented on the impact of dark fibre at the wholesale level.
- 4.198 ComReg maintained its preliminary view that dark fibre was not part of any of the wired LL markets in the 2018 Further Consultation. Two Respondent's (BT and Vodafone) to the 2018 Further Consultation expressed views on this topic. Both were in support of the exclusion of dark fibre from any of the retail wired LL markets.
- 4.199 In paragraphs 4.200 to 4.207, below, ComReg presents information and evidence to support its view that dark fibre is not an effective substitute for any of the wired LL markets.

Demand Side Substitution

Product Characteristics

- 4.200 ComReg notes that dark fibre is available at both the retail and wholesale level in Ireland. There are several providers supplying these services in Ireland²⁷¹. Dark fibre, by its nature, has the ability to provide wired Ethernet or xWDM LL services - whether retail or wholesale - of any bandwidth and interface. However, to enable these wired Ethernet or xWDM LL services, end-users need to provide additional inputs, such as terminal equipment and switching locations.

²⁷¹ Aurora, Digiweb, Eircom, enet, ESB, EU networks and Vodafone.

- 4.202 ComReg also notes that dark fibre requires additional operational resources, in commissioning, acceptance testing, and administering a physical infrastructure. As the service is generally provided as unmanaged (i.e. supplier of dark fibre services is not responsible for fault repairs and other maintenance services for any connected active equipment), the end-user must also place additional resources into monitoring and fault reporting of the link.
- 4.203 The legacy equipment associated with TDM and Analogue LLs means that it would be difficult to acquire this technology and apply it to dark fibre. Therefore dark fibre would not be considered an alternative to TDM and Analogue LLs.

Intended use

- 4.204 Substantial additional costs as well as operational skills are required for retail end-users for managing their own networks based on purchased dark fibre inputs. These factors are likely to render dark fibre services unattractive for the significant majority of end-users purchasing wired LL services.
- 4.205 ComReg has also analysed the profile of end-users that currently purchase dark fibre services. The analysis indicates that these services would appear to be suitable for very large, sophisticated users such as large multinational cloud service providers and Government Networks ('GN') given that it requires additional inputs (e.g. terminal equipment) and management. This evidence further suggests that only a niche customer segment requiring very high bandwidth and very large capacities would consider dark fibre services as a credible alternative to wired Ethernet, xWDM or other high speed LL services.

Supply Side Substitution

- 4.206 ComReg notes that some of the SPs²⁷² supplying dark fibre services are also active in the provision of retail LL services. Thus, the competitive constraint arising from these operators is already accounted for in ComReg's analysis.

Conclusion

- 4.207 For the above reasons, ComReg's view is that dark fibre services are not likely to be an effective substitute for wired LL services. ComReg notes that the inclusion, or otherwise, of dark fibre services is not likely to impact upon ComReg's assessment of competition in the WHQA markets given the relatively small demand for dark fibre services at the retail level.

²⁷² Digiweb, Eircom, EU Networks and Vodafone.

Conclusion to the Product Market Assessment

4.208 As noted in paragraph 4.1 above, ComReg is not required to conclude on the precise scope of the retail market, but has carried out this analysis in order to inform the subsequent analysis of the WHQA market(s). ComReg has focused on the extent to which different retail LL services can be considered to be effective substitutes for other retail LL, broadband and dark fibre services. The evaluation of substitutability has included the consideration of product and functional characteristics, pricing, and customer usage as well as relevant supply side considerations, summarised in Table 7 and Table 8 below.

Table 7: Summary of the Modern Interface (MI) Market Assessment

Market Assessment		Leased Lines					Business Broadband		Dark Fibre
		Wired Ethernet	TDM	Analogue	xWDM etc.	P2P	P2P	TDM	
Demand Side Substitution	• Product Characteristics	Focal Product	✓	✗	✓	✓	✗	✓	✗
	• Pricing		✗	✗	✓	✓	✗	✓	
	• Intended Use		✗	✗	✓	✗	✗	✓	✗
Supply Side Substitution			✗	✗	✗	✗	✗	✗	✗
Conclusion on Substitution			✗	✗	✓	✗	✗	✓	✗

Table 8: Summary of Market Assessment with TDM focal Product

Market Assessment		TDM	Analogue	P2P	Business Broadband	Dark Fibre
Demand Side Substitution	• Product Characteristics	Focal Product	✓	✓	✗	✗
	• Pricing		✓	✓	✗	
	• Intended Use		✓	✗	✗	✗
Supply Side Substitution			✗	✗	✗	✗
Conclusion on Substitution			✓	✗	✗	✗

- 4.209 ComReg's conclusions on its product market assessment of the retail LL markets can be summarised as follows:
- (a) A Traditional Interface ('**TI**') retail LL product market (the '**TI Retail LL Product Market**') composed of TDM and analogue LLs. See Table 8 for a summary of the results of the SSNIP analysis that used TDM LLs as the focal product, and
 - (b) A Modern Interface ('**MI**') retail LL product market (the '**MI Retail LL Product Market**') composed of wired Ethernet, EFM, xWDM and other modern interface LLs. See Table 7 for a summary of the results of the SSNIP analysis that used wired Ethernet LLs as the focal product.
- 4.210 Asymmetric business broadband is not considered a substitute for a retail LL due to the likely lack of effective supply and demand side substitutability between the products. Although a certain cohort of End Users may consider business broadband a substitute, it is not sufficient to act as a significant competitive constraint on the retail (or wholesale) LL markets.
- 4.211 Furthermore, passive infrastructure, such as Dark Fibre, is not considered to be an effective substitute for a retail LL due to the investment and expertise needed to provide retail LL using such passive infrastructure.
- 4.212 The above conclusions on the TI Retail LL Product Market and the MI Retail LL Product Market, are consistent with the preliminary views outlined in the 2018 Further Consultation.
- 4.213 In the following Section ComReg examines whether any potential bandwidth breaks exist within the Retail LL Product Markets.

4.5 Bandwidth Breaks in the Retail LL Product Markets

Introduction

- 4.214 The Retail LL Product Markets have LLs which are sold over a range of bandwidths, with these ranging from less than a megabit to multiple gigabits. In this Section ComReg examines whether the TI Retail LL Product Market and the MI Retail LL Product Market should be segmented according to bandwidths, namely whether a 'bandwidth break' exists. A bandwidth break would constitute a separate product market either side of the break within the products using the same set of technology, whether TI or MI. For example, hypothetically, a MI Retail Product Market consisting of speeds up to and including 1Gbps, with another Retail MI Product Market consisting of speeds above 1Gbps.
- 4.215 Due to the bundling of other services with retail LLs it is not feasible to calculate the pure price for the retail LL itself. Instead, it is necessary to substitute the analysis of retail LL prices with that of Eircom's regulated wholesale price to determine whether retail product bandwidth breaks exist. ComReg recognised that Eircom's wholesale prices are not the same as retail prices, but given they are cost based, they are a suitable proxy.
- 4.216 In the 2016 Consultation, ComReg set out the preliminary view that a bandwidth break existed in the TI Retail LL Product Market at 2 Mb/s, dividing this into two sub product markets; the Low Bandwidth ('**LB**') TI Retail LL Product Market with speeds ≤ 2 Mb/s and the High Bandwidth ('**HB**') TI Retail LL Product Market with speeds over 2 Mb/s. The 2016 Consultation did not identify any bandwidth break in the MI Retail Product Market. ComReg did not receive any comments on this preliminary view in Respondents' submission to the 2016 Consultation.
- 4.217 The 2018 Further Consultation maintained the same preliminary view as that in the 2016 Consultation and again ComReg received no comments on this in Respondents' submissions to the 2018 Further Consultation.

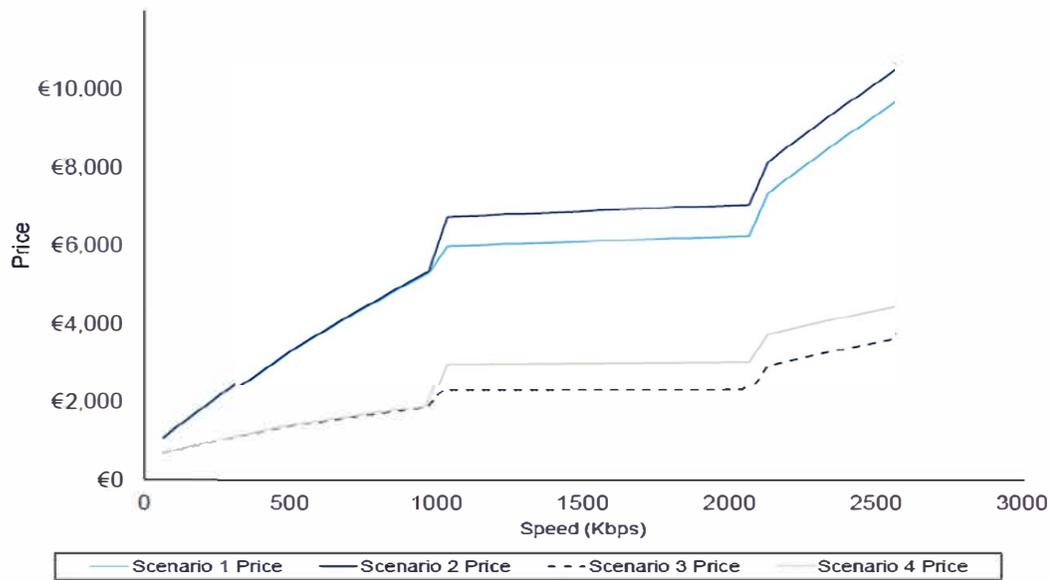
- 4.218 The 2016 Consultation included Appendix 1, the 2016 Oxera Report 'WHQA market definition and analysis in Ireland', which formed the basis for the analysis of bandwidth breaks in the WHQA and retail LL markets. Further to this, Oxera have provided ComReg with an updated analysis (the '**Updated Oxera Report**'), which further examines the question as to whether bandwidth breaks exist within the MI WHQA Markets.²⁷³ The Updated Oxera Report is Annex 5 to this Decision.
- 4.219 The 2016 Oxera Report remains the basis for the examination of the TI Retail product market²⁷⁴ and the Updated Oxera Report updates the analysis of any bandwidth breaks in the MI Retail Product Market.
- 4.220 This sub-Section sets out:
- (a) An assessment as to whether any bandwidth breaks exist within the Retail TI LL Product Market (discussed in paragraphs 4.221 to 4.226); and
 - (b) An assessment as to whether any bandwidth breaks exist within the Retail MI LL Product Market (discussed in paragraphs 4.227 to 4.229).

Traditional Interface LLs

- 4.221 The 2016 Oxera Report includes a wholesale price analysis for TDM and analogue circuits which identified a bandwidth break at bandwidths up to and including 2 Mb/s and above 2Mb/s.

²⁷³ See Section 5 below for more details

²⁷⁴ ComReg considers that there have no any significant changes to Eircom's regulated TI wholesale prices that would alter Oxera's bandwidth break analysis.

Figure 45: TDM Bandwidth Price Analysis (up to 2Mb/s)²⁷⁵

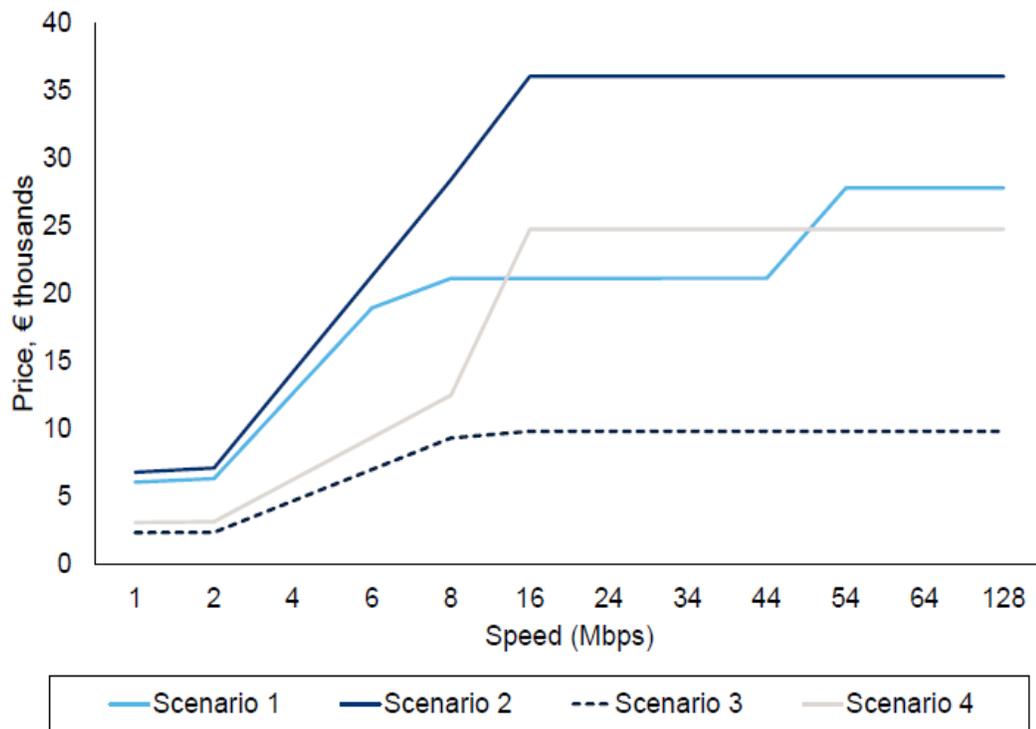
Source: Oxera analysis of eircom wholesale leased line pricing.

- 4.222 Figure 45 above plots a range of price scenarios based on different configurations of TI wholesale inputs²⁷⁶ that are faced by a wholesale SP, purchasing a single LL segment from Eircom. This shows a slight break²⁷⁷ at a bandwidth of 1Mb/s but a more significant break at 2Mb/s. This is confirmed more clearly in Figure 46, below.

²⁷⁵ Replicating Figure 3.1 from the 2016 Oxera Report.

²⁷⁶ The different configurations include End User links, main link access, main link distance, and a transport links. See Table 3.6 and Appendix A2.2 of the 2016 Oxera Report for details.

²⁷⁷ A 6% increase in price per unit of bandwidth.

Figure 46: TDM bandwidth price analysis (above 1Mb/s)²⁷⁸

Source: Oxera analysis of eircom wholesale leased line pricing.

4.223 The 2016 Oxera Report discussed the chart in Figure 46 above and stated that:

“... bandwidths above 2Mbps confirms a significant pricing break in this region Price increases rapidly above 2Mbps, and it is never cost-effective for 1Mbps users to avail [of] services above 2Mbps. In addition, a 4Mbps user would always be better off using 2Mbps service increments rather than 1Mbps.”²⁷⁹

4.224 ComReg considers that the conditions of competition between TDM LLs above 2Mb/s and those at and below 2 Mb/s are sufficiently heterogeneous as to be considered to fall within separate product markets. It is ComReg’s view that such break in pricing is also likely to exist at the retail level, given that SPs will pass through at least some of the wholesale price differences to their retail customers.

²⁷⁸ Replicating Figure 3.2 from the 2016 Oxera Report.

²⁷⁹ Page 40 of the 2016 Oxera Report.

4.226 Moreover, it should also be noted at the end of 2018 there were only 67 retail HB TDM LLs²⁸⁰ in situ as the majority of retail customers have already migrated to MI based Ethernet (and other) LL services. This represents 2.5% of all retail TI LLs. ComReg notes that the identification of TI TDM based LLs above 2 Mb/s (referred to as '**High Bandwidth TI LLs**') as falling within a separate market to retail TI (TDM and analogue) LLs at and below 2 Mb/s (referred to as '**Low Bandwidth TI LLs**') is not likely to impact upon ComReg's overall assessment of competition in the relevant WHQA markets given the relatively small amount of these High Bandwidth TI LLs sold at the retail level.

Modern Interface LLs

4.227 The Updated Oxera Report updated and confirmed the conclusions of the 2016 Oxera Report with regard to the lack of any bandwidth breaks in the MI WHQA Markets. The Updated Oxera Report analysed 2015 and 2016 data on wholesale traded MI circuits as opposed to analysing the building up of prices using Eircom regulated rates that was adopted in the 2016 Oxera Report.

4.228 When Oxera examined MI wholesale prices, in terms of average revenues over a range of bandwidth intervals, there was a positive relationship without any break in average revenues. Oxera also examined MI wholesale prices, in terms of average revenues per Mb/s over another range of bandwidth intervals, there was a negative relationship without any break in average revenues per Mb/s.

4.229 It is ComReg's view that it is also unlikely for there to be a break in pricing at the retail level, given that SPs will pass through at least some of the wholesale price differences to their retail customers.

Conclusion to the Bandwidth Breaks in the Retail LL Products Markets

4.230 Overall, ComReg has concluded that the TI Retail LL Product Market has a bandwidth break up to and including 2 Mb/s and that there is no bandwidth break for the MI Retail LL Product Markets. This means that ComReg identified three Retail LL Product Markets:

- (a) Low Bandwidth ('**LB**') Retail TI LLs, which are composed of analogue and TDM LLs up to and including 2Mb/s;
- (b) High Bandwidth ('**HB**') Retail TI LLs, which are composed TDM LLs over 2Mb/s; and

²⁸⁰ See Figure 49, below.

(c) Modern Interface ('MI') Retail LLs, which are composed of wired Ethernet LLs, EFM, xWDM LLs and other modern interface LLs.

4.231 The above product markets, together the '**Retail LL Product Markets**' are consistent with the preliminary views with that outlined in the 2018 Further Consultation.

4.6 Geographic Market Assessment

Introduction

- 4.232 In this Section ComReg assesses geographic scope of the Retail LL Product Markets as identified and summarised at paragraph 4.230 above.
- 4.233 As was the case with the assessment of the Retail LL Product Markets, ComReg is not required to define the geographic boundaries of these markets. However, it is nevertheless useful to examine their likely geographic scope, since it is likely to be of relevance to the consideration of the geographic scope of the upstream wholesale markets. Furthermore, indirect constraints might arise in these markets having regard to the strength of competition occurring in certain geographic areas at the retail level.
- 4.234 This subsection includes:
- (a) an outline of the framework for assessing retail geographic markets (discussed in paragraphs 4.235 to 4.239 below);
 - (b) a geographic assessment of Low Bandwidth Traditional Interface LL market (discussed in paragraphs 4.240 to 4.246 below);
 - (c) a geographic assessment of High Bandwidth Traditional Interface LL market (discussed in paragraphs 4.247 to 4.251 below); and
 - (d) a geographic assessment of Modern Interface LL market (discussed in paragraphs 4.252 to 4.261 below).

Framework for assessing retail geographic markets

- 4.235 In general, the process of defining the geographic boundaries of markets involves identifying any geographic areas where a distinct break in competitive conditions can be observed. This approach places weight on the underlying structural and behavioural factors that are relevant in determining the competitiveness of a market.

4.236 As was the case with the assessment of the retail product markets, ComReg is not required to define the geographic boundaries of these markets. However, it is nevertheless useful to examine their likely geographic scope, since it is likely to be of relevance to the consideration of the geographic scope of the upstream wholesale markets. Furthermore, indirect constraints might arise in these markets having regard to the strength of competition occurring in certain geographic areas at the retail level. ComReg's approach follows the approach adopted by the European Commission in the 2014 Recommendation²⁸¹.

4.237 The European Commission's Notice on Market Definition stated that the relevant geographic market is:

*"...an area in which the Undertakings concerned are involved in the supply and demand of the relevant products or services, in which area the conditions of competition are similar or sufficiently homogeneous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different."*²⁸²

4.238 The European Commission also notes in its SMP Guidelines that:

*"According to established case-law, the relevant geographic market comprises an area in which the Undertakings concerned are involved in the supply and demand of the relevant products or services, in which the conditions of competition are sufficiently homogeneous, and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are significantly different. Areas in which the conditions of competition are heterogeneous do not constitute a uniform market."*²⁸³

4.239 This is not intended as an SMP assessment, which is addressed later in this Decision, but as an overview of the geographic features of the retail market, which may require further assessment when defining geographic market boundaries at the wholesale level.

²⁸¹ See Section 5, page 52 of the 2014 Recommendation.

²⁸² European Commission Notice on Market Definition, paragraph 8.

²⁸³ European Commission SMP Guidelines (2018/C 159/01), paragraph 48.

Low Bandwidth Traditional Interface LLs

Introduction

- 4.240 Low bandwidth Traditional Interface accounts for the vast majority (97.5%) of all Traditional Interface (analogue and TDM LLs) circuits sold in 2018. The trend over the past 4 to 5 years shows that these products are in continual decline as shown in Figure 47. Consumers of these products are either migrating to other LL technologies or exiting from retail LL markets.
- 4.241 This subsection will consider whether the conditions of competition are sufficiently homogeneous or are noticeably heterogeneous across the country to define either a national or subnational Low Bandwidth Traditional Interface LL market(s). This will be examined by looking at both the geographic demand and supply side substitution of this product.

Demand side substitution

- 4.242 The customer profile of TDM and analogue customers as seen in Figure 26 and Figure 10 are predominated by government institutions, utility operators, transport companies and financial institutions which typically have a dispersed presence around the country. Such purchasers - in general - tender for such services on a nationwide basis and require a single vendor to meet their total connectivity needs.
- 4.243 There is unlikely to be any incentive for these TDM and analogue customers to relocate in order to avail of more competitive rates.

Supply-side substitution

- 4.244 With some exceptions²⁸⁴, TI based retail LLs are mainly provided by Eircom over its ubiquitous copper network. SPs can in theory, provide retail TI LLs through the use of LLU from Eircom, but this has not been done by any SP to date and is unlikely to be done in future as the market is in decline.
- 4.245 In relation to the retail market, Eircom and BT have a combined market share of [redacted]²⁸⁵. As such, ComReg is of the view that due to Eircom's national ubiquitous copper network, the geographic scope of the TI retail markets are national in scope.

²⁸⁴ Such as higher bandwidth TDM which can utilise fibre and a trivial amount on wireless technologies.

²⁸⁵ ([redacted]) and ([redacted])

Conclusion

- 4.246 Having considered the conditions of competition in both demand and supply and demand of Low Bandwidth Traditional Interface LL, ComReg is of the view that they are sufficiently homogeneous across the country to define this product as national in scope.

High Bandwidth Traditional Interface LLs

Introduction

- 4.247 High bandwidth Traditional Interface accounts for a very small amount (2.5%) of all Traditional Interface circuits sold in 2018, and is less than 100 circuits. The trend over the past 4 to 5 years shows that these products are in continual decline as set out in Figure 49. Like consumers of the LB TI products, these customers are either migrating to other LL technologies or exiting from LL markets.
- 4.248 This sub-Section will consider whether the conditions of competition are sufficiently homogeneous or are noticeably heterogeneous across the country to define either a national or subnational High Bandwidth Traditional Interface LL market(s). This will be examined by looking at both the geographic demand and supply side substitution of this product.

Demand side substitution

- 4.249 Due to the small number of declining circuits and customers in this product market there is unlikely to be any incentive for these TDM customers to relocate in order to avail of more competitive rates.

Supply-side substitution

- 4.250 As with the LB TI LL products, HB TI LLs are mainly provided by Eircom over its ubiquitous copper network. With such a small and declining market, any SP not already in this market is unlikely to enter it, given the legacy nature of the technology. Those SPs who currently provide this product are unlikely to make any investments to expand their provision of the product from one geographic part of the State to another.

Conclusion

- 4.251 Having considered the conditions of competition in both demand and supply and demand of High Bandwidth Traditional Interface LL, ComReg is of the view that they are sufficiently homogeneous across the country to define this product as national in scope.

Modern Interface LLs

Introduction

- 4.252 The Modern Interface LL circuits account for the majority of all LL products sold in the State, accounting for 77% of wired LL circuits, see Figure 22. Over the past 4 to 5 years there has been growing or steady demand for these products (mostly wired Ethernet LLs)²⁸⁶. Some of the consumers of both TI products are migrating to MI products and these are expected to dominate the retail LL markets for the period of this market review.
- 4.253 This subsection will consider whether the conditions of competition are sufficiently homogeneous or are noticeably heterogeneous across the country to define either a national or subnational Modern Interface LL market(s). This will be examined by looking at both the geographic demand and supply side substitution of this product.

Demand side substitution

- 4.254 As noted in paragraph 3.73 in relation to the discussion on multi-site retail demand, purchasers of retail MI LLs require connectivity to disparate locations in various geographic regions. Such purchasers - in general - tender for such services on a nationwide basis and require a single vendor to meet their total connectivity needs.
- 4.255 It should also be noted that retail purchasers of MI LLs typically tender for the whole contract and all geographic locations and do not price separately for each individual connection.
- 4.256 Furthermore, ComReg is of the view that although the presence of electronic communications infrastructure can be an important factor in the location decisions of some retail demand, it is not likely that a significant portion of retail demand would switch their premises location to avail of better prices for retail MI LLs.
- 4.257 As such, even in the absence of regulation at the wholesale level, retail purchasers of retail MI LLs are unlikely to geographically relocate in order to avail of more competitive retail MI LLs in another location.

Supply-side substitution

- 4.258 In contrast to the Retail TI product markets, there are multiple transmission media capable of supporting MI interfaces including, fibre, Hybrid Fibre Cable ('HFC') and copper.

²⁸⁶ The trends in xWDM and EFM circuit numbers may vary year on year but due to the low absolute number of circuits involved they do not alter the general trend of MI circuits.

SPs that utilise these media have concentrated their network roll out in geographic areas where demand is likely to be highest. The presence of Alternative Networks ('**ANs**') has increased particularly in areas of high business activity, such as Business Parks. In these areas Civil Engineering Infrastructure ('**CEI**') such as duct networks may be more accessible and demand for retail LL services is more concentrated. This potentially indicates that there may be certain geographic areas within which the barriers for entering and/or expanding in the MI retail market may be lower.

- 4.259 It should be noted that as part of the market definition assessment of the WHQA markets in Section 5, ComReg has undertaken a detailed analysis to ascertain whether there are differences in the conditions of competition between different areas based on differences in the condition of supply and demand. In this regard, ComReg finds that there are sub-National Geographic markets at the wholesale level due to the differences in the conditions of supply and demand. However, it is this demand behaviour at the retail level that underpins the need for a precise and granular geographic market definition and competition assessment at the wholesale level to allow regulation to ensure that the retail market is effectively competitive at a National level.
- 4.260 As such, ComReg is of the preliminary view that the geographic scope of the retail MI LL market is National and wholesale geographic considerations are analysed at the wholesale level in the next chapter.

Conclusion

- 4.261 Having considered the conditions of competition in both demand and supply of Modern Interface LL, ComReg is of the view that they are sufficiently homogeneous across the country to define this product as national in scope.

Conclusion on Geographic Market Definition

- 4.262 In paragraphs 4.240 to 4.261 above ComReg has considered the geographic features of the Relevant Retail Product Markets in order to inform the subsequent analysis of the WHQA markets. ComReg's assessment indicates that:
- (a) there is no apparent evidence of retail TI LL or MI LL service functionality or price/marketing differentiation on a geographic basis;
 - (b) both TI LLs and MI LL retail services are offered by several SPs on a nationwide basis; and

- (c) some differences in competitive conditions can be observed within Ireland with respect to MI LLs, in particular, the presence of SPs on-net infrastructure is higher in urban Business Parks and Data Centres, thus potentially indicating a greater intensity of competition in the supply of retail MI LL services in these areas. While the observed differences in the number of competitors and market shares shows there are geographic differences at the wholesale level, they are not sufficient in and of themselves to identify clear and stable subnational geographic boundaries.

4.263 ComReg considers that all the Retail LL Product Markets are likely to be national in scope.

4.7 Trends and Market Shares of the Relevant Retail LL Markets

4.264 This subsection provides an update to Figure 4 and Figure 5 in Section 3.4 for each of Relevant Retail LL Markets identified in Section 4.6 above.

Figure 47: Number of LB TI Retail LL Circuits by SP [x REDACTED]

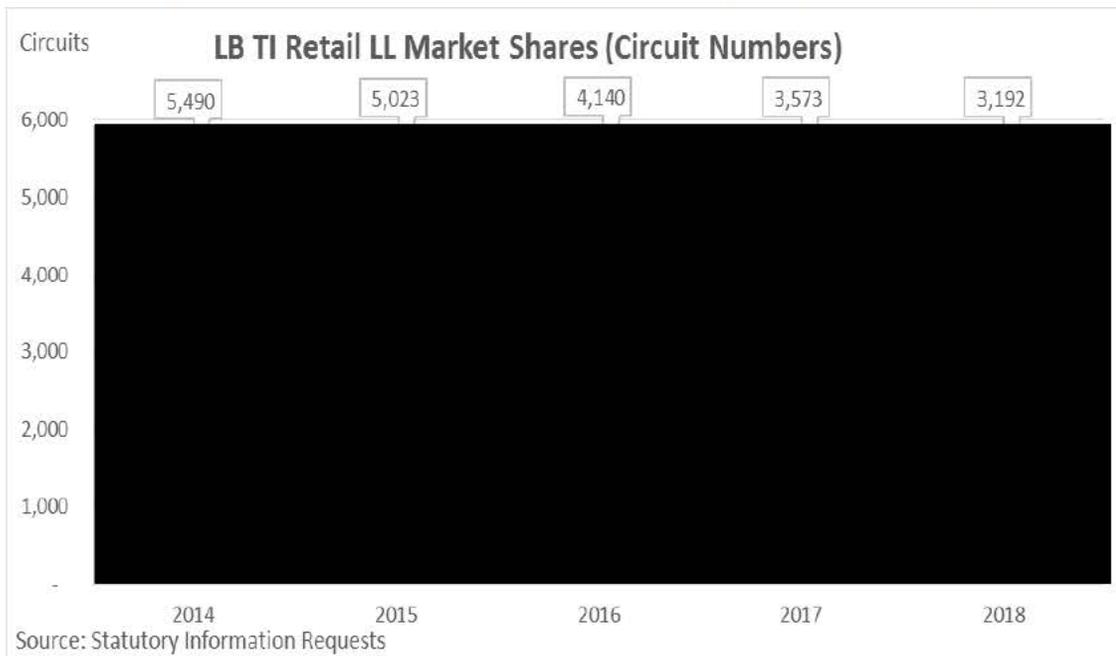
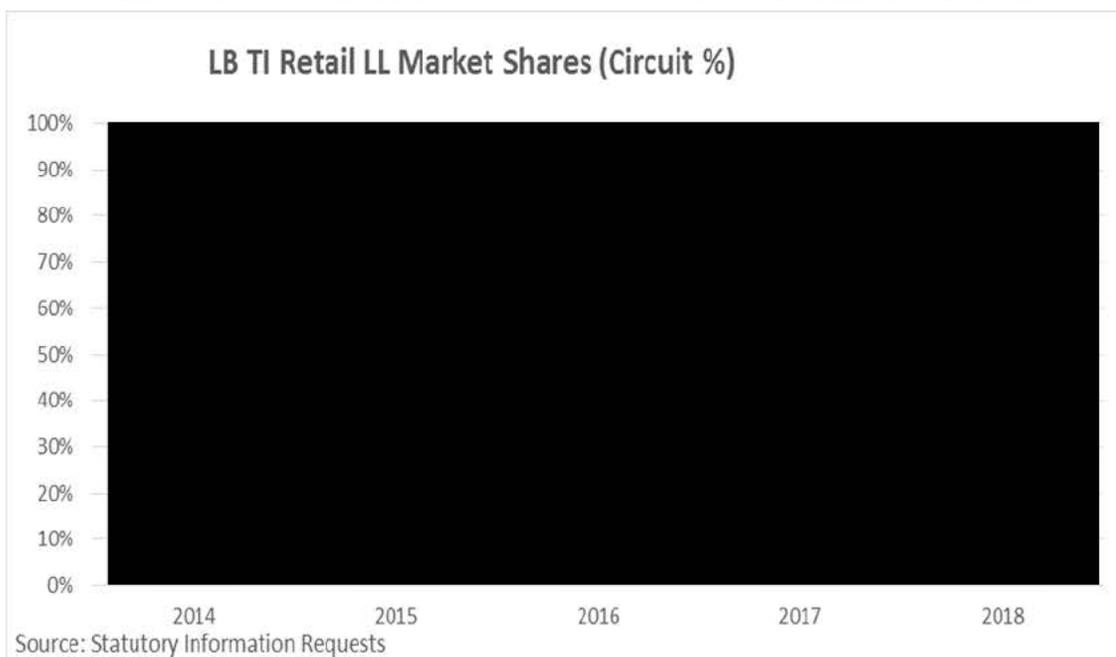
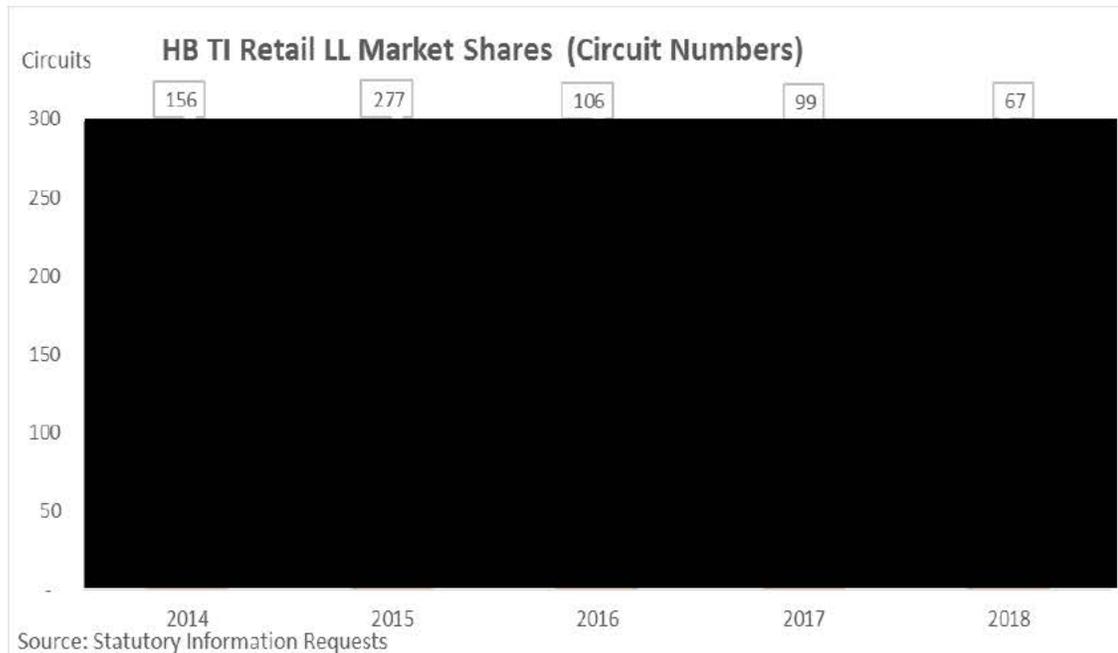


Figure 48: Market Shares of LB TI Retail LL Circuits by SP [x REDACTED]



- 4.265 Figure 47, above, shows that the LB TI Retail LL Market is in continuous decline. Between 2014 and 2018 the total number of circuits went from 5,490 in 2014 to 3,192 in 2018, a decline of 2,298 circuits or 42% over 4 years. The market shares shown in Figure 48, above, show that Eircom is the largest SP in this market with a market share from [%< ██████████]²⁸⁷ over this period. BT is the next largest SP with a market share from [%< ██████████]²⁸⁸ between 2014 and 2018. The remaining SPs collectively account from 14% and 9% over these 4 years.

Figure 49: Number of HB TI Retail LL Circuits by SP [%< REDACTED]



²⁸⁷ Between 60% and 70%.

²⁸⁸ Between 20% and 30%.

Figure 50: Market Shares of HB TI Retail LL Circuits by SP [REDACTED]



4.266 Figure 50, above, shows that the much smaller HB TI Retail LL Market is also in continuous decline, 2015 was an exception to this. Between 2014 and 2018 the total number of circuits went from 156 in 2014 to 67 in 2018, a decline of 89 circuits or 57% over 4 years. The market shares shown in Figure 51, above, show that BT is the largest SP in this market with a market share from [REDACTED]²⁸⁹ over this period. Verizon and Eircom are the next largest SPs with market shares from [REDACTED]^{290 291} between 2014 and 2018. The remaining SPs collectively account from 38% to 15% over these 4 years.

²⁸⁹ Between 30% and 60%.

²⁹⁰ Verizon is between 10% to 20%.

²⁹¹ Eircom is between 0% to 10%.

Figure 51: Number of MI Retail LL Circuits by SP [§ REDACTED]

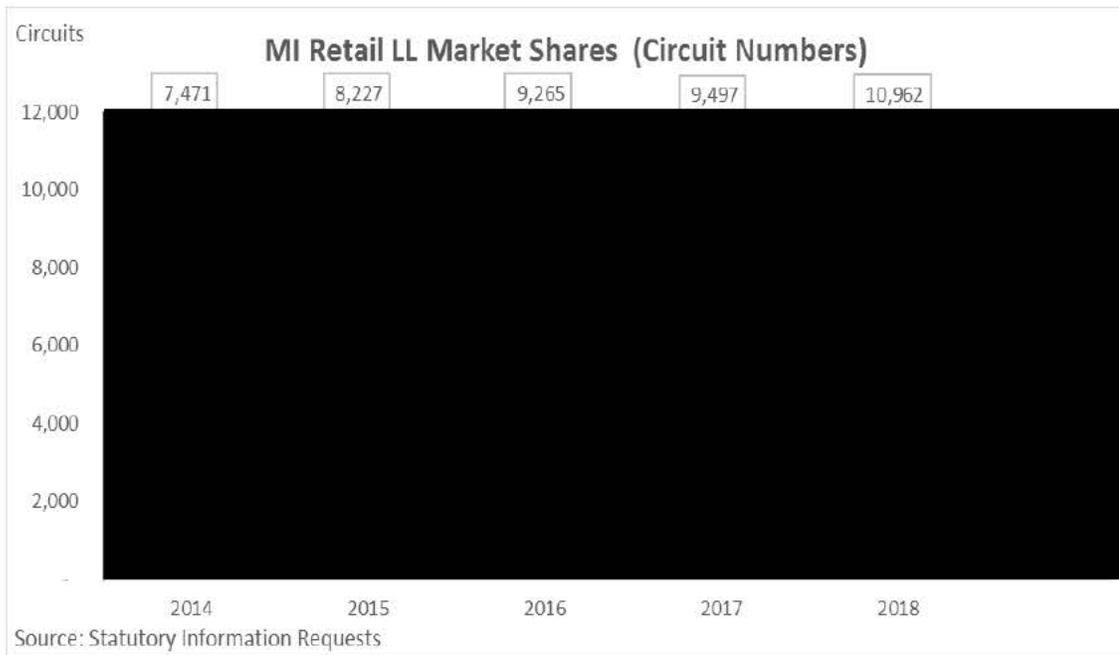
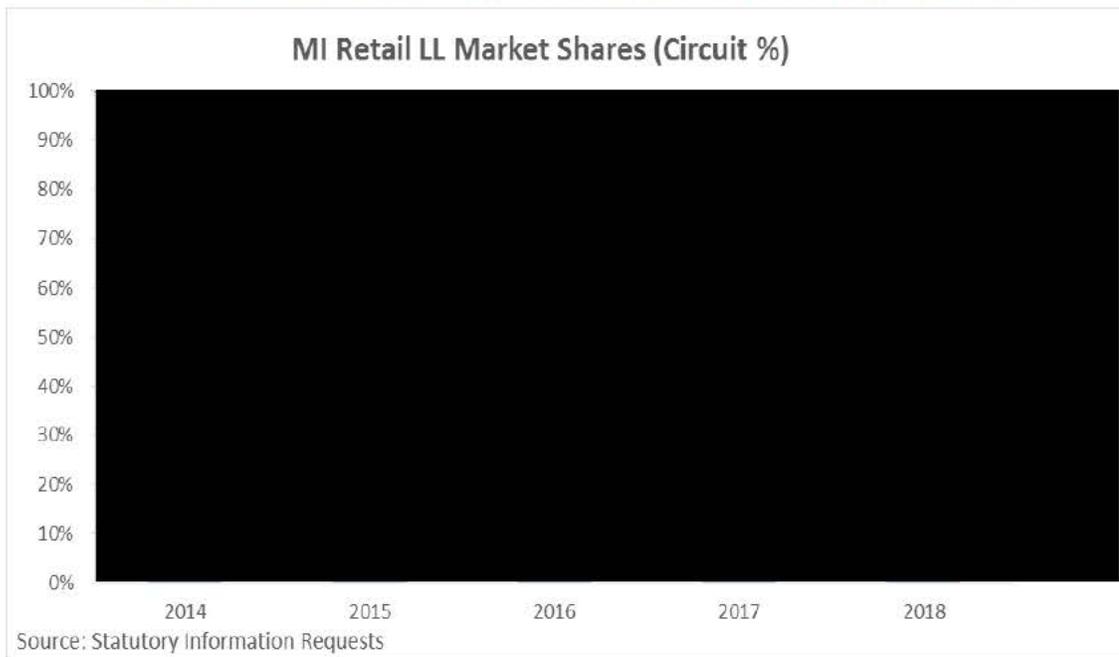


Figure 52: Market Shares of MI Retail LL Circuits by SP [§ REDACTED]



4.267 Figure 51, above, shows that the MI Retail LL Market, the largest retail LL market, is growing year on year. Between 2014 and 2018 the total number of circuits went from 7,471 in 2014 to 10,962 in 2018, an increase of 3,491 circuits or 47% over 4 years. The market shares shown in Figure 52, above, show that Eircom is the largest SP in this market with a market share from [3< ██████████]²⁹² over this period. BT is the next largest SPs with a market share of [3< ██████████]²⁹³ between 2014 and 2018. Vodafone, AirSpeed, Virgin Media and Verizon have all had market shares between [3< ██████████]²⁹⁴ between 2014 and 2018. The remaining SPs collectively accounted for 25% to 21% over these 4 years.

²⁹² Between 20% and 30%.

²⁹³ Between 20% and 30%.

²⁹⁴ Between 0% and 10%.

4.8 ComReg's Position

4.268 Having considered Respondents' views to the 2018 Further Consultation outlined in Annex A1.3²⁹⁵ below, along with our extended analysis of developments in the retail market more generally, ComReg has decided to maintain the views of the Retail HQA Market(s) as set out in the 2018 Further Consultation.

4.269 Overall ComReg's position is that:

- (a) The appropriate starting focal point at the retail level for the assessment of potential product substitutes for retail LLs are LL services provided over an Ethernet Interface and over a wired medium (whether on a standalone basis or in a bundle with other services);
- (b) There are likely to be three distinct retail LL product markets which can be summarised as follows:
 - (i) Low Bandwidth Traditional Interface ('**TI**') Retail Market consisting of all wired retail LLs carried over analogue, digital and TDM interfaces with bandwidths of $\leq 2\text{Mb/s}$ (the 'Retail Low Bandwidth ('**LB**') TI HQA Market');
 - (ii) High Bandwidth TI Retail Market which consists of all wired retail LLs provided over a TDM Interface with bandwidths of $> 2\text{Mb/s}$ (the 'Retail High Bandwidth ('**HB**') TI HQA Market'); and
 - (iii) Modern Interface ('**MI**') Retail Market consisting of all wired retail LLs carried over modern interfaces such as Ethernet, EFM, xWDM and other modern interfaces (the '**Retail MI HQA Market**');
- (c) The above product markets (together referred to as the '**Relevant Retail LL Markets**') do not include wireless LLs due to the lack of effective demand supply and demand side substitutability between wired and wireless LLs;
- (d) Asymmetric business broadband is not considered a substitute for a retail LL due to the lack of effective supply and demand side substitutability between the products;
- (e) Passive infrastructure, such as Dark Fibre, is not considered to be an effective substitute for a retail LL due to the investment and expertise needed to provide retail LL using such passive infrastructure; and

²⁹⁵ Paragraphs A1.28 to A1.64

- (f) The geographic scope of the Relevant Retail LL Markets is National, but there are likely to be subnational geographic markets for the provision of MI WHQA products, with this assessed in the context of the MI WHQA Markets definition in Section 5.7 below.

5 Definition of the Relevant WHQA Markets

5.1 Overview

- 5.1 In this Section, ComReg sets out its position in relation to the definition of the relevant WHQA markets. In doing so, ComReg has regard to the preliminary position set out in the 2016 Consultation and the further preliminary position detailed in the 2018 Further Consultation, as well as all relevant aspect of the 2016 Submissions and the 2018 Submissions.
- 5.2 ComReg has identified six WHQA markets which are closely related to the Relevant Retail LL Markets, namely:
- (a) a national Low Bandwidth ('**LB**') Traditional Interface ('**TI**') WHQA Market consisting of wired analogue, digital and TDM wholesale LLs with bandwidths $\leq 2\text{Mb/s}$;
 - (b) a national High Bandwidth ('**HB**') TI WHQA Market consisting of wired analogue, digital and TDM wholesale LLs with bandwidths $> 2\text{Mb/s}$; and
 - (c) four sub-National geographic Modern Interface ('**MI**') WHQA Markets consisting of all wired retail LLs carried over modern interfaces such as Ethernet, EFM, xWDM and other modern interfaces.
- 5.3 The above four sub-geographic MI WHQA Markets are identified as follows:
- (a) the **Area 1 MI WHQA Market** which is sub-national in its geographic scope, and equates to a unique and separately distinguishable set of 1,582²⁹⁶ identified WPZs²⁹⁷ which exhibit sufficiently different conditions of competition relative to the other markets identified below;

²⁹⁶ Corresponding to 4,950 MI WHQA connected premises and representing 58.4% of all MI WHQA connected premises.

²⁹⁷ See footnote 12 above.

- (b) the **Area 2 MI WHQA Market** which is sub-national in its geographic scope, and equates to a unique and separately distinguishable set of 1,998²⁹⁸ identified WPZs which exhibit sufficiently different conditions of competition relative to the other markets identified below;
 - (c) the **Area 3 MI WHQA Market** which is sub-national in its geographic scope, and equates to a unique and separately distinguishable set of 1,153²⁹⁹ identified WPZs which exhibit sufficiently different conditions of competition relative to the other markets identified below; and
 - (d) the **Area 4 MI WHQA Market** which is sub-national in its geographic scope, and equates to a unique and separately distinguishable set of 2,486³⁰⁰ identified WPZs which exhibit sufficiently different conditions of competition relative to the other markets identified below.
- 5.4 The LB TI WHQA Market and HB TI WHQA Market are referred to together in this Decision as the '**TI WHQA Markets**'.
- 5.5 The Area 1 to Area 4 MI WHQA Markets are referred to together in this Decision as the '**MI WHQA Markets**'. As noted later in Section 9 below, for the purpose of considering competition problems and the imposition of remedies, as appropriate:
- (a) the Area 1 MI WHQA Market and Area 3 MI WHQA Market are collectively referred to in this Decision as the '**Zone A MI WHQA Markets**'; and
 - (b) the Area 2 MI WHQA Market and Area 4 MI WHQA Market are collectively referred to in this Decision as the '**Zone B MI WHQA Markets**'.
- 5.6 ComReg has set out a revised boundary between the MI WHQA Markets and the Trunk Market which is now delineated by reference to competing SPs' interconnection and/or proximity to Eircom Aggregation Nodes. In effect, this extends the Trunk Boundary to 93 Aggregation Nodes where three (including Eircom) or more SPs are present and active in the provision of MI WHQA LLs³⁰¹.

²⁹⁸ Corresponding to 3,523 MI WHQA connected premises and representing 41.6% of all MI WHQA connected premises.

²⁹⁹ Area 3 does not contain any MI WHQA Connected Premises.

³⁰⁰ Area 4 does not contain any MI WHQA Connected Premises.

³⁰¹ This is presented in Section 5.8 of this Section as the analysis is based on similar principles employed in the geographic assessment of the MI WHQA Markets.

- 5.7 This is in contrast to the current position under the 2008 Decision where wholesale leased lines services provided between 20 designated urban centres are considered to be Trunk segments.³⁰²
- 5.8 The above TI WHQA Markets and MI WHQA Markets (together the ‘**Relevant WHQA Markets**’) make a distinction between different types of media used to provide WHQA LLs, whereby WHQA LLs provided over wireless P2P radio links do not form part of the relevant markets, whereas wired media form part of the same relevant markets
- 5.9 Asymmetric wholesale broadband access is not considered a substitute for a WHQA LLs due to the likely lack of effective supply and demand side substitutability between these products. Likewise, passive infrastructure such as Dark Fibre is not considered to be part of any of the Relevant WHQA Markets for the same reasons³⁰³.
- 5.10 The Section discusses and assesses the following:
- (a) the regulatory and legal framework for the market definition assessment (discussed in Section 5.2 below);
 - (b) the WHQA product market definitions (discussed in Sections 5.3 to 5.6 below); and
 - (c) the geographic scope of the Relevant WHQA Markets (discussed in Section 5.7 below).

5.2 Regulatory Framework for the Definition of Wholesale Markets

- 5.11 As noted in Section 2 above³⁰⁴, the European Commission’s 2014 Recommendation has established that the WHQA market is susceptible to *ex ante* regulation and, in doing so, refers to the WHQA market as:

“Wholesale high-quality access provided at a fixed location”

³⁰² Please also see the 2012 Pricing Decision on Urban Centres

³⁰³ However, dark fibre and other passive infrastructure inputs (including, as noted below, LLU) can be used in the provision of downstream LL services.

³⁰⁴ See paragraph paragraph 2.18 above.

- 5.12 The European Commission's Notice on Market Definition defines a relevant market as follows:
- (a) a relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer by reason of the products' characteristics, their prices and their intended use; and
 - (b) a relevant geographic market comprises the area in which the firms concerned are involved in the supply of products or services and in which the conditions of competition are sufficiently homogeneous.³⁰⁵
- 5.13 The European Commission's SMP Guidelines state that;
- “Market definition is not a mechanical or abstract process but requires an analysis of any available evidence of past market behaviour and an overall understanding of the mechanics of a given sector. In particular, a dynamic rather than a static approach is required when carrying out a prospective, or forward-looking, market analysis.”*³⁰⁶
- 5.14 In defining the Relevant WHQA Markets, ComReg begins by identifying the appropriate wholesale focal product. From here, ComReg examines whether this focal product is in a market of its own, or whether a broader market should be defined to take into account direct supply-side or demand-side substitutes. ComReg then assesses the degree, if any, to which indirect constraints arising from downstream retail markets might effectively constrain behaviour in the Relevant WHQA Markets. Finally, ComReg assesses the geographic scope of the identified WHQA markets.

³⁰⁵ Commission Notice on the definition of relevant market for the purposes of Community competition law Official Journal C 372 , 09/12/1997 P. 0005 – 0013.

³⁰⁶ Paragraph 35 of the SMP Guidelines

- 5.15 In line with the MGA³⁰⁷, ComReg's assessment starts from the assumption that regulation is not present in the market under consideration. However, regulation in other related markets, or through other aspects of the regulatory framework, is assumed to be present. This is to avoid drawing conclusions regarding the competitive structure of a particular market which may be influenced by, or indeed premised on, existing regulation on that market. Considering how the Relevant WHQA Markets may function absent regulation helps to ensure that regulation is only applied (or withdrawn) in those circumstances where it is truly justified and proportionate.
- 5.16 As noted in the SMP Guidelines, market definition is not an end in itself, but is undertaken to provide the context for the subsequent competition/SMP analysis.³⁰⁸ It allows ComReg to consider the competitive constraints imposed by demand and supply side substitutes (and consequently the buyers and suppliers of those substitute products/services) on a forward-looking basis, taking into account expected or foreseeable technological or economic developments over a reasonable time horizon linked to this market review³⁰⁹.
- 5.17 The remainder of this Section addresses the product and geographic market assessments.

5.3 Assessment of the Relevant WHQA Markets

Overview

- 5.18 As set out in Sections 2, 3 and 4 of this Decision, WHQA is predominantly used to provide downstream retail LL services, with such LLs also being used by SPs for network completion purposes, where appropriate. As such, ComReg takes the retail markets identified in Section 4 as the starting point for the wholesale assessment and definition of relevant markets.
- 5.19 In assessing the scope of the relevant WHQA product markets, ComReg has identified two broad wholesale product markets, a TI WHQA market consisting of Analogue and Digital LLs along with PPCs carried over a TDM interface, as well as a separate MI WHQA Markets consisting of wholesale LLs provided over Ethernet and other modern interfaces such as xWDM.

³⁰⁷ See paragraph 2.22 above.

³⁰⁸ See paragraph 34 of the SMP Guidelines.

³⁰⁹ See recital 27 of the Framework Directive, which is transposed into Irish law by the Framework Regulations.

- 5.20 Furthermore, ComReg's position is that there is a break in the chain of substitution for TI WHQA LLs at 2 Mb/s, with circuits of bandwidths above this being in a separate TI WHQA product market. Consequently, there are two TI WHQA product markets, namely a LB TI WHQA product market and a HB TI WHQA product market.
- 5.21 In considering carrying out the WHQA product market assessments, ComReg considers the following issues:
- (a) how SPs wholesale LL supply to their own retail functions, referred to as self-supply, should be treated (discussed in paragraphs 5.22 to 5.31 below);
 - (b) what the WHQA focal product should be, being the product against which alternative potential substitutes will be assessed (discussed in paragraphs 5.32 to 5.40 below);
 - (c) an assessment of the MI WHQA product market (discussed in paragraph 5.41 to 5.171 below);
 - (d) an assessment of the TI WHQA product markets (discussed in paragraphs 5.172 to 5.216 below).
 - (e) an assessment of the MI WHQA geographic market (discussed in paragraphs 5.216 to 5.338 below);
 - (f) an assessment of the TI WHQA geographic markets (discussed in paragraphs 5.340 to 5.353 below); and
 - (g) the trunk terminating boundaries of the Relevant Markets (discussed in paragraphs 5.356 to 5.379 below).

Treatment of Self Supply including Mobile Network Operators' (MNO) backhaul

Preliminary View set out in the 2018 Further Consultation

- 5.22 In the 2016 Consultation and reiterated in the 2018 Further Consultation, ComReg set out its position in relation to the treatment of self-supplied WHQA services. In particular, ComReg stated that:

“ComReg treats self-supply of SPs' wholesale LLs to its retail businesses as being part of the WHQA market due to the fact that such supply is typically readily divertible to the wholesale merchant market.”

There are, however, exceptions to this. Self-supply by SPs to their own mobile arms are not considered to be part of the relevant WHQA markets as there is no feasible scenario in which the mobile arms of the SPs would purchase these services from another SP (i.e. its internal sales are captive).”³¹⁰

5.23 ComReg went on to state that:

“Eircom provides WHQA to its own retail divisions (self-supply), as well as to third party SPs (external merchant market supply) using its copper and fibre network inputs. For the purpose of this market definition exercise, ComReg considers that Eircom’s self-supply of WHQA falls within the market regardless of whether it is used to supply other LL SPs, or by Eircom to its own retail arm... Eircom’s existing WHQA products are available on a national basis and are purchased by a number of SPs. Its self-supply to its retail arm could be converted relatively easily to external merchant market supply in the short term without incurring significant additional costs. Similarly, ComReg considers that the retail self-supply of other SPs active in the merchant wholesale market should also fall within the relevant WHQA markets.”³¹¹

³¹⁰ Paragraph 5.21 of the 2016 Consultation and Paragraph 4.119 of the 2018 Further Consultation.

³¹¹ Paragraph 5.22 of the 2016 Consultation.

In relation to Eircom's supply of WHQA products to its mobile arm Eircom Group Mobile³¹²... ComReg considers that such supply is likely to be captive³¹³. ComReg notes that in the event of a price change in the WHQA market, Eircom is unlikely to stop supplying its own internal demand. Eircom's subsidiaries are also unlikely to purchase WHQA products from alternative SPs irrespective of the price (typically an internal transfer charge) charged for these products by the upstream arm.³¹⁴ Thus, ComReg is of preliminary view that Eircom's self-supply to its mobile arm...is outside the scope of the relevant WHQA product market as such supply is unlikely to be converted to external merchant market supply.³¹⁵ Similarly, other MNOs' internal supply of leased line connectivity to their own downstream mobile operations is excluded from the relevant WHQA product market as such supply is also considered to be captive."³¹⁶

- 5.24 ComReg reiterated this point in the 2018 Further Consultation where it was stated in response to a 2016 Submission from BT that self-supplied backhaul should be included due to the network sharing agreements ('**NSA(s)**'). At the time ComReg pointed out such NSAs were no longer actively seeking WHQA inputs as these arrangements were being unwound.³¹⁷

³¹² Eircom Group Mobile covers Meteor and Eircom Mobile brands.

³¹³ The inclusion of captive sales into the relevant market may depend on whether the internal traffic would be made available in the merchant sales in case of an increase or decrease of market prices (*i.e.* whether the captive sales would be sufficiently quickly switched to the merchant market in response to a change in the competitive conditions).

³¹⁴ Save for circumstances where Eircom cannot supply it themselves.

³¹⁵ ComReg notes that at the time of the 2016 Consultation, there were a number of network sharing agreements in place between MNOs; namely Tetra and Mosaic. However, these agreements are no longer active.

³¹⁶ Such as Three or Vodafone.

³¹⁷ Paragraph 4.114 of the 2018 Further Consultation.

Respondents' Views on Treatment of Self Supply including Mobile Network Operator s(MNO) backhaul

5.25 As set out in Annex 1³¹⁸, two of the seven Respondents raised issues concerning the treatment of MNO backhaul in the 2018 Consultation, namely BT and Zayo. The remaining Respondents did not comment.

5.26 Zayo stated that:

“There seems no doubt that the leased lines eircom provides to its own MNO are the same as those being provided to other MNOs. Certainly, ComReg has not in any way suggested that they are different. It therefore seems clear that self-provision of leased lines services to eircom’s own mobile arm must be included in the relevant market definition.”³¹⁹

5.27 Zayo goes on to state that:

“ComReg’s proposal to exclude the circuits supplied by eircom to its own mobile business is artificially reducing the overall market size and also eircom’s share of that market. This results in an overall underestimation of eircom’s market power...”³²⁰

5.28 BT set out its contention that ComReg’s proposed treatment of self-supplied WHQA for MNO backhaul is incorrect. However, these contentions are based on a misunderstanding either how ComReg treats self-supply or of what ComReg considers to be non-contestable.

5.29 BT’s comments on the issue of the treatment of MNO backhaul are detailed in A.1.4.3³²¹. However, the points raised can be summarised as follows:

- (a) That ComReg has excluded WHQA for the provision of MNO backhaul from the relevant market³²²;

³¹⁸ See Section A.1.4.3 below.

³¹⁹ Zayo Submission, paragraph 3.1.12.

³²⁰ Zayo Submission, paragraph 3.1.13.

³²¹ See paragraphs A1.83 to A1.100

³²² BT Submission Part 2, Paragraphs 44-54.

- (b) That the sales to a downstream retail arm of an SP are equivalent to the supply of a SP's inputs for its own network. As such, the MNO base station site (to which the backhaul is connected) is exactly the same as a retail customer³²³;
- (c) That there are important network sharing arrangements for MNO backhaul that are still active;³²⁴ and
- (d) ComReg should have defined a separate MNO backhaul market.³²⁵

ComReg's Assessment of Respondents' Views on Treatment of Self Supply including Mobile Network Operator s(MNO) backhaul

5.30 ComReg has considered Zayo's and BT's views summarised above and would note the following:

- (a) ComReg does not intend to generally exclude MNO backhaul from its assessment of the relevant WHQA Markets. Where SPs actively engage in the Relevant WHQA Markets for the purposes of MNO backhaul, these services are always included in the assessment of the market.

³²³ BT Submission Part 2 Paragraphs 55-69

³²⁴ Paragraphs 72-80 BT Submission Part 2. ComReg notes that these NSAs have now ceased, except for a number of legacy circuits still in-situ.

³²⁵ Paragraphs 84-90 BT Submission Part 2

- (b) ComReg notes that there is no retail demand for MNO backhaul.³²⁶ WHQA LLs supplied for the purposes of MNO backhaul or any other network demand (self-supplied or otherwise) cannot be switched to supply the retail market. As such, MNO backhaul is treated that same as all other WHQA services used as network inputs, whether these are for core network, backhaul or any other relevant network service. If a SP self-supplies network inputs or backhaul for fixed services based on its own WHQA inputs, such inputs are not considered contestable – and are not therefore capable of being competed for by other SPs. As such, ComReg is treating WHQA for MNO backhaul in the same manner as self-supplied backhaul for fixed services. However, if an SP purchases such WHQA inputs from the wholesale market for the purpose of its network inputs, such WHQA services are considered to fall within a relevant WHQA market. If such inputs are self-supplied, they are outside of it.³²⁷
- (c) ComReg does not consider that there is a separate MNO backhaul market. All SPs supply of WHQA to MNOs are treated as part of the relevant WHQA markets.

ComReg's Position on Treatment of Self Supply including Mobile Network Operator s(MNO) backhaul

5.31 ComReg's assessment has properly accounted for all relevant circumstances where self-supply of WHQA products should form part of the relevant markets. In particular, where wholesale supply of WHQA to a downstream retail arm can readily be switched from the retail to the wholesale market is considered to form part of the relevant WHQA markets. Where WHQA services are self-supplied for use as own network inputs, including by SPs with an integrated MNO for the purposes of the self-supply of MNO backhaul, these services are excluded from the relevant WHQA markets as they are not considered to be contestable.

³²⁶ MNO backhaul is used to support MNO based retail and wholesale services, just as any other type of backhaul.

5.4 Identifying the Focal Product

- 5.32 The first step in defining a relevant WHQA product market involves identifying the relevant focal product. In the 2016 Consultation³²⁸ and reiterated in the 2018 Further Consultation,³²⁹ ComReg set out its views that Eircom's Ethernet based WHQA LLs are an appropriate focal product. Neither the 2016 Respondents nor the Respondents to the 2018 Further Consultation disagreed with the approach. Below, ComReg sets out in detail its reason for considering this to remain the case.
- 5.33 As highlighted in Figure 53 below, Eircom is the largest supplier of WHQA LL products to third parties via its TDM, NGN and xWDM networks with an overall general³³⁰ market share of [3%< ██████████]³³¹. Thus, ComReg considers that Eircom's WHQA LL products are likely to represent a suitable starting point for the product market definition exercise.

³²⁸ Paragraphs 5.25 to 5.32 of the 2016 Consultation

³²⁹ Section 4.21 of the 2018 Further Consultation

³³⁰ Across **all** wholesale LLs rather than in the sense of any defined market.

³³¹ Between 40% and 50%.

Figure 53: General WHQA market shares in presence of regulation [REDACTED]³³²



Eircom’s WHQA Products

5.34 Eircom offers a wide range of TI WHQA LL and MI WHQA LL products, services and facilities in accordance with its existing SMP regulatory obligations. These products are detailed in its Leased Line Reference Offer (‘LLRO’) as published on Eircom’s wholesale website³³³.

5.35 In summary, the WHQA LL products currently provided by Eircom include:

³³² Market shares in this figure are calculated based on the supply of WHQA using own network inputs only. In other words, resold wholesale LL are not included in WHQA market shares estimation. Based on information provided through the Statutory Information requests

³³³ Available at http://www.openeir.ie/Reference_Offers/.

- (a) **End-to-end services:** these link two End User sites, where either end could be a business consumer End User premises or SP network site. These are comprised of local access connections either directly connected at the same local serving node or exchange or two geographically separated local ends connected across the core network of a SP. These can also consist solely of core capacity in the circumstances where both ends are network nodes connected with high bandwidth services. Thus an end-to-end leased line can range in scale from an analogue line connecting two business premises to a multiple 100 Gb/s service connecting data centres or network nodes. The demand for end-to-end WHQA products has been low in recent years as the majority of Access Seekers are now purchasing Partial Private Circuit ('PPC') based interconnection products (see below).
- (b) **Interconnection based or PPC type LL terminating segments:** these segments most commonly link an End User's premises to the network node of the SP purchasing the terminating segment, enabling the purchasing SP to assemble an end-to-end LL service using a combination of wholesale LL inputs and its own network. Terminating segments can also be used to link together nodes in the purchasing SP's network. Terminating segments consist of access and any (necessary) backhaul segments (and associated facilities) as discussed below:

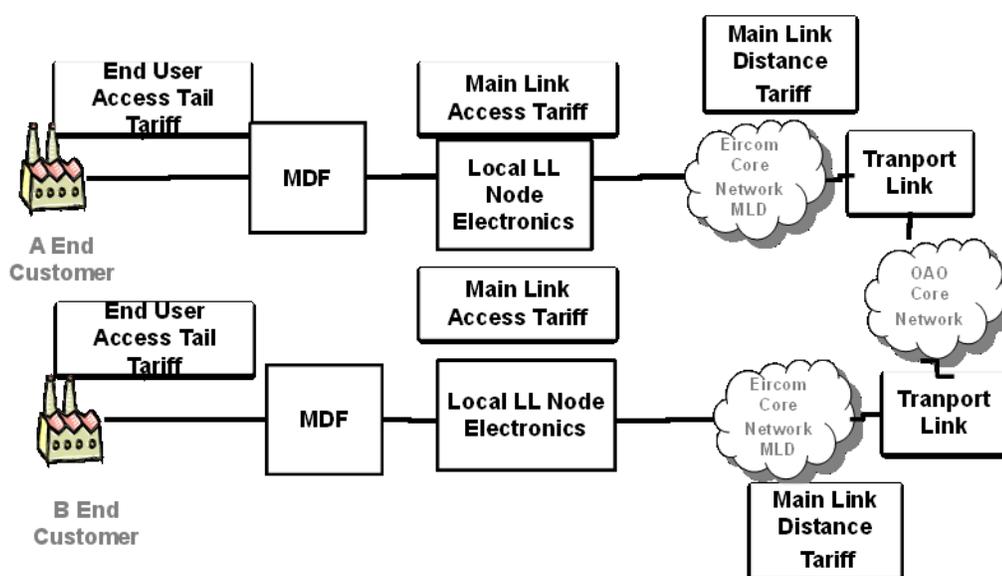
5.36 A typical TDM PPC product is illustrated in the stylised Figure 54 below. A PPC from an Access Seeker³³⁴ to an end customer has three segments:

- (a) **Access segment** – End-user link is a dedicated link between the third party customer premise and Eircom LE generally using Eircom's copper or fibre access network. End-user links' prices vary by bandwidth. Additional charges exist for distances beyond a certain length (1.5 km for circuits less than or equal to 2Mb/s, 0.5km for circuits above 2 Mb/s). Pricing also varies by handover type (e.g. in-building handover or customer site handover). Additional charges for diversity can also apply.
- (b) **Core segment** – Main link provides dedicated transmission capacity between Eircom's Local Exchange and the Access Seeker's POP with Eircom's network. There are two tariffs associated with this component:

³³⁴ Access Seekers are referred to throughout this Decision as those Undertakings that purchase, or could potentially purchase, WHQA services.

- (i) A Main link access tariff is a charge for accessing the TDM core network from the access link. Prices vary by bandwidth and also depend on whether traffic is local (same node) or to a different exchange or handover point.
 - (ii) Main link distance tariff is a charge that applies for traffic conveyance across the core network. There are fixed and variable (distance) based charges at each bandwidth interval.
- (c) **Interconnection segment** – Transport Link is the physical interconnection to the Access Seeker at the point of Interconnect. There are fixed and variable (distance) based charges at each bandwidth. Charges for different types of handover (in-span, in building, customer site) also apply.

Figure 54: Eircom's PPC Product

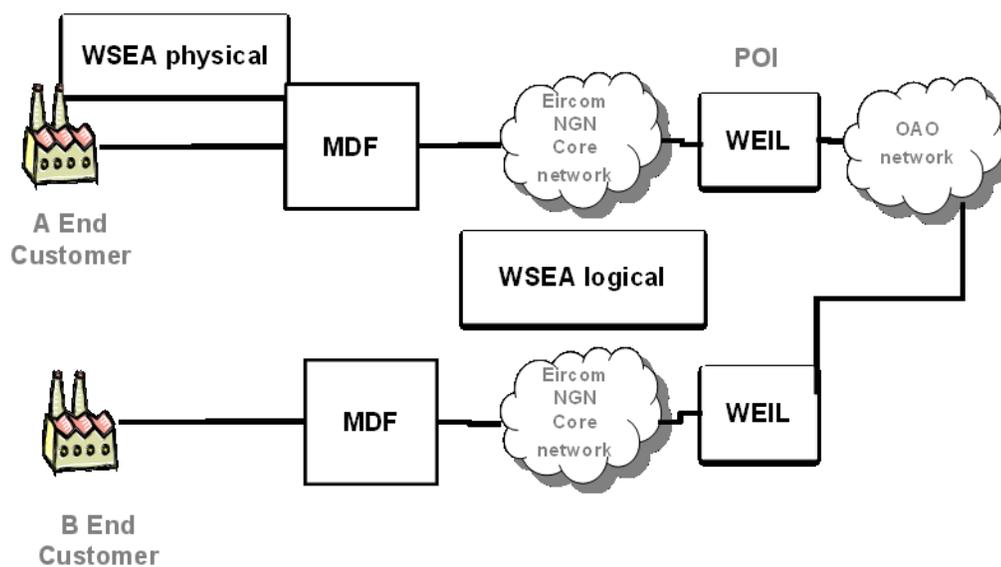


5.37 Eircom's MI based Ethernet WHQA LL product is stylised in Figure 55 below and it also has access, core and interconnection segments, although it is structured differently. The relevant segments are:

- (a) Wholesale Symmetrical Ethernet access ('**WSEA**') – is the physical fibre link and port extending from the third party customer premise to Eircom's NGN Local Exchange. Prices vary by capacity (1Gb/s or 10Gb/s), distance and the density (urban, provincial or rural) of the area;
- (b) WSEA logical - is the configuration of the conveyance across the NGN core network. Prices vary by bandwidth, class-of-service, and whether conveyance is local, within the same region or to another region; and

- (c) Wholesale Ethernet Interconnection Link ('WEIL') - is the interconnection link between Access Seeker and Eircom at a central interconnection point. Prices vary by capacity (1 Gb/s or 10 Gb/s), by area density of the WEIL link, and by the type of handover - i.e. whether the connection to Eircom is in the Access Seeker's site (customer site handover) or within Eircom's exchange (in-building handover).³³⁵

Figure 55: Eircom's Ethernet Product



- 5.38 Figure 56 below indicates that at the end of Q4 2018 the majority of Eircom's sales of WHQA LL products were Ethernet based LL [\approx XXXXXXXXXX] circuits, followed by TI based LLs³³⁶ [\approx XXXXXXXXXX] circuits and xWDM MI based LLs [\approx XXXXXXXXXX] circuits). Consistent with the general trend of migration towards MI based LLs at a retail level, the number of TI based WHQA LLs is in decline as wholesale customers migrate to MI based WHQA LLs. Thus, in ComReg's view, Eircom's Ethernet WHQA LL products represent a suitable starting point for the product market definition exercise.

³³⁵ An additional type of handover called Edge node handover is also possible. This requires greater investment from the Access Seeker in return for lower incremental costs of interconnection.

³³⁶ These mainly consist of TDM LLs.

Figure 56: Eircom's WHQA products by technology [REDACTED]



Overall Position on the WHQA Focal Product

5.39 Since wholesale Ethernet LLs form the majority of active demand for WHQA LL products, ComReg's position is that Ethernet wholesale LLs are the focal product for the purpose of the WHQA product markets assessment.

5.40 ComReg refers to LLs delivered over an Ethernet interface (and any effective substitutes) 'Modern Interface' ('MI') WHQA LLs.

5.5 MI WHQA LL Product Market Assessment

5.41 Below ComReg considers the strength of any direct and indirect constraints present in the MI WHQA product market(s) with a view to considering whether the MI WHQA product market should be broadened to include other potentially effective substitute products. In particular, ComReg considers the following:

- (a) Demand-side substitution – including whether a bandwidth break exists for the provision of MI WHQA and whether WHQA provided over wireless networks are part of the relevant market (discussed in paragraphs 5.43 to 5.145 below);
- (b) Supply-side substitution, including the self-supply of vertically integrated service providers (discussed in paragraphs 5.146 to 5.163 below).

- (c) Whether indirect constraints are a relevant consideration (discussed in paragraphs 5.164 to 5.168); and
- (d) ComReg's overall conclusions on the assessment are set out in paragraphs 5.169 to 5.171.

5.42 ComReg's overall conclusion is that the MI WHQA product market is comprised of wholesale wired Ethernet, EFM, xWDM and other modern interface MI WHQA LLs. In the case of the MI WHQA product market, Eircom's self-supply is included in the market as well as WHQA products provided over alternative networks. Self-supply by alternative networks is also included in the WHQA product markets where such SPs are active in the merchant market in supplying MI WHQA products to Access Seekers.³³⁷

Demand-Side Substitution – MI WHQA LLs

- 5.43 As outlined in Section 4 above³³⁸, analysis of customer behaviour in response to price increases is a useful framework by which to define the relevant product market.
- 5.44 The demand-side substitution analysis is undertaken from the perspective of the Access Seeker and assesses their response to a SSNIP in the price of WHQA. If a sufficient number of Access Seekers switch to an alternative WHQA product in response to a SSNIP in the price of the focal product (i.e. Ethernet interface wholesale LLs), hence rendering that price increase unprofitable, then the alternative WHQA product should be included in the relevant WHQA product market.

Do WHQA Ethernet LLs provided over alternative networks fall within the WHQA product market?

- 5.45 No Respondents to the 2018 Further Consultation (or the 2016 Consultation) commented on the fact that ComReg considered that all alternative WHQA Ethernet SPs are in the same market.

³³⁷ With the exception of self-supplied network inputs such as for backhaul.

³³⁸ See paragraph 4.28 above.

Product Characteristics and Pricing

- 5.46 Table 9 below illustrates the merchant activity of all SPs in the Irish market. It details to and from whom each SP is purchasing and selling WHQA Ethernet products. It shows that there are a number of SPs providing WHQA Ethernet based LLs including BT, enet, Colt and other suppliers. From a functional perspective ComReg considers that WHQA Ethernet products offered over alternative wired networks are likely to be sufficiently similar to WHQA Ethernet products offered by a HM to make them effective demand-side substitutes. This is because Ethernet LLs are delivered using the same technology over fibre (or in some cases copper) networks. Thus, in response to a SSNIP by a HM of Ethernet WHQA products, an Access Seeker could acquire WHQA Ethernet products provided over alternative SPs' wired networks, where such networks are present.
- 5.47 Information about wholesale prices of WHQA products provided over alternative wired networks is generally not publicly available as these products are sold on a price on application (**'PoA'**) basis. However, ComReg considers that pricing of WHQA products provided over alternative wired networks are likely to be similar to the pricing of Eircom's Ethernet WHQA products as SPs of WHQA services are actively competing against each other. Pricing information submitted by some WHQA SPs in response to ComReg's Qualitative Questionnaire also support this view.³³⁹

³³⁹ [3< [REDACTED]] Issued in April 2015. There is no evidence to suggest this is still not the case.

Table 9: List of Interconnected SPs X[REDACTED]

	Airspeed	BT	Colt	Digiweb	Eircom	enet	ESB	EU Netw's	Host Ireland	Magnet	Three	Virgin Media	Verizon	Vodafone
Airspeed														
AT&T														
BT														
Colt														
Digiweb														
Eircom														
enet														
ESB														
EU Networks														
Fulnett/Strencom														
Host Ireland														
Magnet														
Three														
Virgin Media														
Verizon														
Vodafone														

Note: This table indicates the relationship between Access Seekers and WHQA SPs. Access Seekers are displayed on the vertical axis while suppliers of Ethernet WHQA products are displayed on horizontal axis. Green colour indicates that Access Seeker is purchasing products from a given WHQA SP. White colour indicates that Access Seeker is not purchasing products from a given WHQA SP. Black colour indicates instances where the relationship is not applicable.

Intended use

5.48 At the wholesale level, the demand for Ethernet WHQA LLs is primarily derived from an Access Seeker’s demand for inputs used in the provision of retail LL services and for network completion/extension, where appropriate. As highlighted in Section 4 above, retail LL are often used for multiple purposes, including email and Internet, data services, connectivity between premises and VoIP services. ComReg considers that intended use of LL provided over Eircom’s network at the retail level is similar to that of an Ethernet LL service provided over an alternative wired network as product characteristics and functionality are relatively similar.

Substitution

- 5.49 Substitution between WHQA providers largely occurs when SPs offering retail LLs are preparing their bid responses to End Users' tenders. In general, changing WHQA supplier can involve switching costs such as the overhaul of Customer Premises Equipment ('CPE') and/or connecting to the SP's network. Thus, in areas where multiple competing WHQA infrastructures are available, Access Seekers that do not have their own infrastructure can purchase Ethernet WHQA LLs from several other SPs.
- 5.50 Furthermore, there are numerous competing MI WHQA providers in many areas of the State, and so, it is ComReg's position that Access Seekers have the ability to purchase MI WHQA throughout those areas of the State where there is competing SP WHQA infrastructure.
- 5.51 Table 9 above indicates that Access Seekers are typically purchasing WHQA Ethernet LL products from multiple SPs. It demonstrates that WHQA products provided over alternative wired infrastructure are likely to be considered by Access Seekers to be as effective demand side substitutes for Eircom's products. In this regard, ComReg notes that Eircom itself is also purchasing WHQA from four other SPs including [REDACTED].³⁴⁰

Conclusion on provision of Ethernet services over alternative wired infrastructure

- 5.52 ComReg's position is that owners of alternative wired WHQA infrastructure such as BT, Colt, Digiweb, enet, EU Networks, Magnet, Virgin Media and Verizon offer WHQA Ethernet products that are likely to be considered by Access Seekers to be substitutable for the identified focal product³⁴¹. As noted in paragraph 5.31 above, self-supply of SPs providing WHQA is also considered to fall within the relevant WHQA product markets, where these SPs are also active in the merchant market (save for where it involves non-contestable WHQA products that are self-supplied for own network inputs).

³⁴⁰ Predominantly in relation to MI WHQA.

³⁴¹ Please note that listed SPs are not intended as an exhaustive list of all active suppliers of wired LL in Ireland at present, but are rather included as examples of the principal suppliers.

Do WHQA Ethernet LL products provided over wireless networks fall within the WHQA product market?

5.53 In this Section ComReg sets out its reasoning why MI WHQA over wireless P2P radio links are not considered to be an effective substitute for MI WHQA LLs provided over wired media.

5.54 In the 2016 Consultation ComReg set out its preliminary view that retail LLs provided over a wireless P2P radio links were likely to be a substitute for wired Ethernet retail LLs. This was due to the fact that based on the then available evidence it appeared that:

“.....a sufficient number of Access Seekers purchasing wired WHQA products are likely to switch to wholesale wireless LLs in response to a 5-10% increase in the price of wired WHQA products given that the demand for WHQA products is primarily derived from an Access Seeker’s demand for inputs for the provision of retail LL services, such to make a price increase unprofitable.”³⁴²

5.55 However, in response to the 2016 Submissions received to the 2016 Consultation, ComReg set out in the 2018 Further Consultation, that in view of the likelihood of insufficient retail demand-side substitution, it did not consider P2P radio links to be an effective substitute for wired Ethernet (and other) WHQA LLs. In particular, ComReg noted:

³⁴² Paragraph 4.67 of the 2018 Further Consultation.

“ComReg is of further preliminary view that a sufficient number of Access Seekers purchasing wired WHQA products are unlikely to switch to wholesale wireless LLs in response to a 5-10% increase in the price of wired WHQA products, as a sufficient number of end-users would not view retail wireless LLs as an effective substitute to wired LLs. Wireless LLs are also unlikely to be a sufficiently effective substitute to wired WHQA products for Access Seekers that use WHQA products for own network inputs due to capacity constraints of wireless LLs. Furthermore, ComReg considers that P2P wireless technologies cannot provide sufficient capacities to meet the requirement for significant backhaul requirements from areas in which Eircom is the sole fixed SP with any infrastructure.”³⁴³

- 5.56 Furthermore, as detailed above in Section 4³⁴⁴, the evidence indicates that wireless MI HQA is not an effective substitute for wired MI HQA.
- 5.57 3 of the 7 Respondents to the 2018 Further Consultation commented on the exclusion of P2P radio links from the MI WHQA Markets. Of these, 2 (BT and enet) agreed that they should be excluded as they are not comparable to MI WHQA over wired media due to poorer quality³⁴⁵, and that retail end-users have a preference for wired connections.³⁴⁶ On the other hand Eircom was of the view that they should be included in the MI WHQA Market.³⁴⁷ In Section A.1.4.2 of Annex 1 of this Decision, ComReg considers Respondents’ views on whether wireless MI WHQA LLs are an effective substitute for wired MI WHQA LLs. Much of Eircom’s comments in relation to wireless LLs was focussed on the retail market assessment, and ComReg’s assessment of Eircom’s views in this regard have been considered in Section 4³⁴⁸ of this Decision, as well as in Section A.1.3.3 of Annex 1.

³⁴³ Paragraph 4.84 of the 2018 Further Consultation.

³⁴⁴ See paragraphs 4.61 to 4.83 of this Decision.

³⁴⁵ BT Submission Part 1, page 5; enet Submission, page 8

³⁴⁶ Vodafone Submission, page 8

³⁴⁷ Eircom Submission page 10

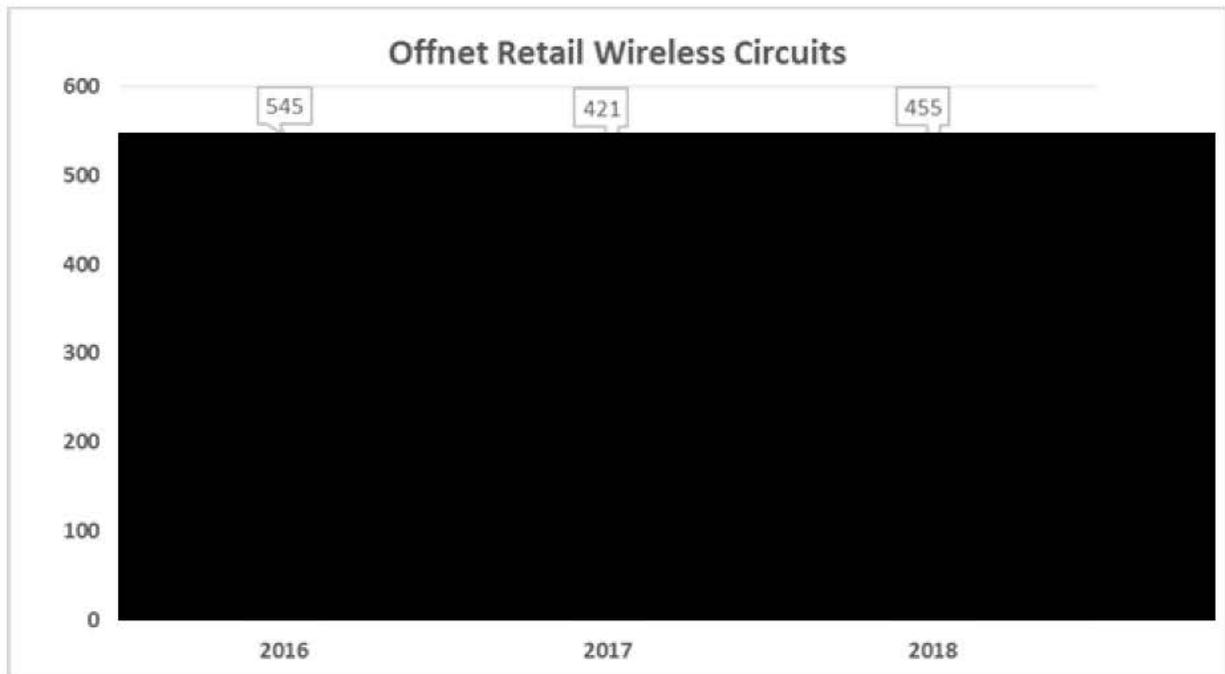
³⁴⁸ See paragraphs 4.101 to 4.145

- 5.58 It should be noted that (with the exception of P2P radio links used for some backhaul purposes such as MNO backhaul), P2P radio links are used primarily by retail end-users. As such, the rationale for excluding them from the MI WHQA markets is largely related to the considerations at the retail level as set out in detail in paragraphs 4.101 to 4.136 above.
- 5.59 In particular, with the exception of the public sector, retail end-users don't consider that wireless P2P radio links are a substitute for wired services. Furthermore, HEAnet who provide connectivity for educational institutions put a 15% premium on wired solutions over wireless ones. They are also of the view that wireless is sufficient for back-up and resilience purposes but not as a primary link.³⁴⁹
- 5.60 For the majority of retail end-users, P2P wireless radio links are not considered a substitute with only 5% of multi-site customers exclusively using wireless connectivity.³⁵⁰ As set out in Figure 57 below, the number of wireless P2P sold at the wholesale level is approximately 10-12% of the number of wired services sold at the wholesale level to service retail demand.

³⁴⁹ See paragraph 4.120 above

³⁵⁰ See Paragraph 4.123 above.

Figure 57 Number of off-net Wireless Circuits [Redacted]



- 5.61 Furthermore, from a purely wholesale perspective, SPs (with the exception of Eircom) do not consider P2P wireless radio links as an effective substitute for MI WHQA provided over a wired medium. This is evidenced by the fact that only 1 wireless P2P radio link was being purchased as a network input in 2018.³⁵¹ As such, ComReg is satisfied that the analysis it has undertaken is sufficient to ascertain that P2P radio links are not part of the MI WHQA Markets.

Do wholesale broadband products fall within the same market as wholesale LLs?

- 5.62 It should be noted that no Respondent to the 2018 Further Consultation commented in relation to this matter. However, in response to the 2016 Consultation, Eircom expressed the view that broadband services could be considered a substitute in some circumstances. Three of the other 12 Submissions to the 2016 Consultation shared ComReg's view that broadband services do not fall within that same market as WHQA LLs.³⁵²

³⁵¹ ComReg SIRs

³⁵² Paragraph 4.34 of the 2018 Further Consultation.

- 5.63 In Section 4 above ComReg set out its view that, with the exception of EFM products, broadband services are not likely to be a sufficiently effective substitutes for either retail TI based LLs or MI based LLs as there are significant differences in terms of product characteristics, pricing as well as intended use of these services by End Users.³⁵³
- 5.64 ComReg considers that these differences equally apply at the wholesale level. For example, Oxera's analysis³⁵⁴ of Eircom's WHQA and wholesale broadband products set out in Figure 58 below illustrates that there are differences in the price as well as the use of these services. However, such price differences have not resulted in migrations from LL to broadband products at the retail level, even with increased availability of higher bandwidth broadband services³⁵⁵.
- 5.65 While ComReg notes that Eircom's VDSL Ethernet Access ('VEA') service³⁵⁶ provides higher service levels (e.g. separate VPN per connection) compared to other Bitstream or VULA services, it cannot match all of service characteristics supported by LL products such as bandwidth guarantee (irrespective of local access distance) and service availability. Such differences in product characteristics are likely to be reflected in the existing price gap between VEA and LL products.

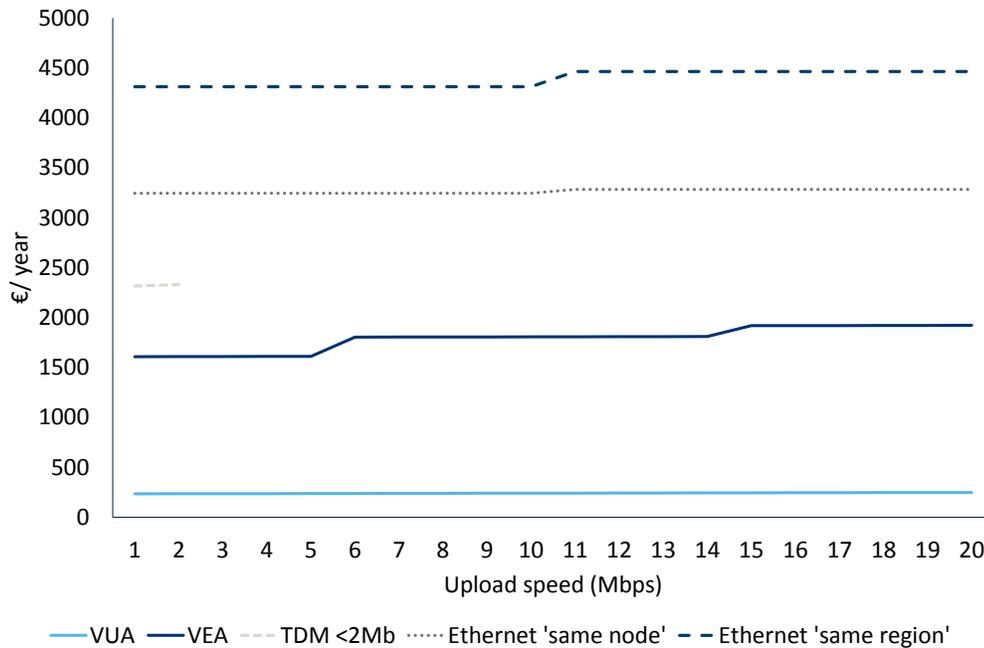
³⁵³ See paragraphs 4.146 to 4.178 above.

³⁵⁴ See the Section 2.3 of the 2016 Oxera Report.

³⁵⁵ Figure 58: Comparison of wholesale broadband and LL services below illustrates modest growth in business FTTC, FTTH and Cable broadband subscriptions over the relevant period.

³⁵⁶ VEA offers Ethernet services over an NGA connection to allow Access Seekers to access a customer premise from Eircom's regional Aggregation Nodes in a similar fashion to Bitstream services though with an individual VPN per connection. This service has not as yet gained significant volumes.

Figure 58: Comparison of wholesale broadband and LL services



Source: Oxera analysis of Eircom’s wholesale leased line and broadband products’ pricing. See Figure 6.1 of the 2016 Oxera Report.

Conclusion on whether wholesale broadband products fall within the same market as wholesale LLs

- 5.66 On the basis of analysis presented in Section 4 and paragraphs 5.62 to 5.65 above, ComReg’s position is that wholesale broadband products do not fall within the same market as WHQA LLs delivered over wired Ethernet LLs.
- 5.67 In relation to EFM services, as noted in Section 4 above³⁵⁷, these services are likely to be considered by End Users as a sufficiently close substitute to wired Ethernet LLs. Magnet and Digiweb are providing EFM services and therefore EFM is likely to be a part of the relevant WHQA market (where these products are available). However, it should be noted that there are less than 200 such circuits in place as of the end of 2018. Moreover, given that there are so few circuits left, ComReg does not intend to impose any obligation on an SMP operator to provide EFM based MI WHQA services.

³⁵⁷ See paragraphs 4.179 to 4.195 of this Decision.

Do dark fibre products fall within the same WHQA market as wholesale Ethernet LLs?

- 5.68 In response to the 2016 Consultation, three of the twelve 2016 Respondents expressed views on whether Dark Fibre is in the same market as Ethernet WHQA services.³⁵⁸ These contended that some SPs may, in some cases, consider Dark Fibre as a substitute for Ethernet LLs.³⁵⁹ In response to the 2018 Further Consultation, only BT expressed the view that Dark Fibre was a substitute.³⁶⁰
- 5.69 In Section 4 above ComReg set out its position that Dark Fibre services are unlikely to be an effective substitute for either a retail TI LL or a retail MI LL.³⁶¹
- 5.70 The 2016 Oxera Report indicated³⁶² that there are substantial fixed costs associated with using Dark Fibre to provide an active LL product as an Access Seeker purchasing Dark Fibre service would need a network of switched electronic (e.g. Ethernet equipment) in locations appropriate for aggregating customer traffic. Additional ongoing costs of network operations (e.g. maintenance, fault monitoring and repair, vendor support) would also be associated with moving to an active product delivery.
- 5.71 ComReg notes that Dark Fibre is purchased by several retail LL SPs, typically for providing backbone connectivity. However, for the year end 2018 the volume of Dark Fibre services sold at the wholesale level was in the low hundreds. Therefore, ComReg considers that it is unlikely that a sufficient number of wholesale LL purchasers would switch to using Dark Fibre services in response to a SSNIP in Ethernet and EFM WHQA products, such that it could constrain a HM supplier of Ethernet MI WHQA services. As such, Dark Fibre is not considered part of the relevant WHQA markets.

³⁵⁸ ALTO, BT and Eircom.

³⁵⁹ See paragraphs 4.86 to 4.99 of the 2018 Further Consultation.

³⁶⁰ BT Submission Part 1, page 5

³⁶¹ See paragraphs 4.196 to 4.207 of this Decision.

³⁶² 2016 Oxera Report, Section 7.

Do TDM WHQA products fall within the same WHQA market as Ethernet wholesale LL?

- 5.72 In the 2016 Consultation and reiterated in the 2018 Further Consultation, ComReg set out its view that TDM based TI WHQA LL products are in a separate market to MI WHQA LL products.³⁶³ No Respondents to the 2018 Further Consultation disagreed with this position. Below, ComReg sets out its reasoning for this being the case.
- 5.73 As noted in paragraph 5.7 above, in addition to providing Ethernet WHQA LL products, Eircom also provides TI (analogue and TDM based) WHQA products. In Section 4³⁶⁴ in the context of retail market assessment, ComReg set out its position that MI and TI LLs constitute separate retail product markets. Nevertheless, ComReg considers whether, in response to a SSNIP in Ethernet and EFM based WHQA LLs a sufficient number of purchasers of this product would be likely to switch to TDM based WHQA such that it would make the SSNIP in wholesale Ethernet and EFM LLs unprofitable.

Product Characteristics

- 5.74 As highlighted in Section 4 above, qualitative differences between Ethernet/EFM LLs and TDM LLs have largely eroded since the 2008 Decision. While Ethernet/EFM services cannot exactly match all of the characteristics of a TDM LL such as latency, jitter or synchronisation, these differences appear to be becoming of minor importance to the majority of End Users.³⁶⁵
- 5.75 However, there are End Users for whom the time synchronisation and low latency of TDM LL is important and their equipment is configured for TDM interfaces. As noted in Section 4, utility operators such as CIE and the ESB use Low Bandwidth TDM LLs for remote monitoring of their networks. Such End Users could be using legacy applications that do not require high bandwidth LLs, but are not suited to Ethernet interfaces. Thus, in order to serve these retail customers, WHQA Access Seekers need to either purchase wholesale TDM WHQA products or else have the capability to offer them themselves.

³⁶³ Paragraphs 5.33 to 5.146 of the 2016 Consultation and Paragraph 4.120 of the 2018 Further Consultation

³⁶⁴ See paragraph 4.233 above.

³⁶⁵ See paragraphs 4.185 above.

Pricing

- 5.76 The existing price differential between wholesale Ethernet and TDM LLs are was highlighted in Section 4 above.³⁶⁶ The analysis in the 2016 Oxera Report indicates³⁶⁷ that Eircom's wholesale TDM products are priced higher relative to the price of wholesale Ethernet services, thus indicating that a 5% to 10% price increase in the price of Ethernet wholesale LLs was unlikely to lead to a significant migration by purchasers from Ethernet to TDM based wholesale LLs. This remains the case as at the end of 2018.

Intended Use

- 5.77 In Section 4 above, ComReg noted that the purchasers of LLs at the retail level tend to have similar uses for TDM and Ethernet LLs. However, End Users that require higher bandwidths for data networking purposes tend to purchase Ethernet as opposed to TDM based LL.³⁶⁸

Substitution – Demand Side

- 5.78 Figure 56 above³⁶⁹ indicates that demand for TDM WHQA LL products continues to decline with the majority of new orders accounted for by Ethernet WHQA LL products. While wholesale TI LLs are still being ordered by WHQA Access Seekers³⁷⁰, the general migration to Ethernet and/or other MI based LL services at the retail level would also suggest that there is an asymmetric substitution between these services at the wholesale level in that there are significantly more WHQA seekers switching from TDM to Ethernet based LL than WHQA seekers switching from Ethernet to TDM based LL. As also earlier noted, the order flow for new TDM LLs is trivial whereas the number of ceases in the same period was greater.
- 5.79 Switching costs noted in paragraph 4.221 above would also be likely to limit the substitutability between WHQA TDM and Ethernet LL products as Access Seekers would have to overhaul CPE (although these costs may be more easily overcome at the time when contract renewal and installation of new LL service occurs).

³⁶⁶ See paragraph 5.70 to 5.86

³⁶⁷ 2016 Oxera Report, Section 3.1.3.

³⁶⁸ See paragraphs 5.69 to 5.72 above.

³⁶⁹ See paragraph 5.38 above.

³⁷⁰ Eircom had [3< [REDACTED]] new wholesale TI LL order in 2018.

Substitution – Supply Side

- 5.80 In relation to supply side substitution, changing from Ethernet to TDM supply is also likely to require significant upfront investment³⁷¹. ComReg is not aware of any SP that is planning to begin providing TDM LL services over the lifetime of this market review. This is likely to be due to the fact that the demand for such services at both the wholesale and retail level is in decline. Thus, the supply-side substitution between Ethernet/EFM and TDM WHQA products is also likely to be limited. ComReg understands that TDM equipment is approaching obsolescence and is no longer supported by equipment manufacturers. As such, any investment in switching to supply TDM based LLs is likely to be stranded, thereby also undermining the likelihood of supply side substitution.

Overall Conclusion on whether TDM WHQA LLs fall within the same product market as Ethernet WHQA LLs

- 5.81 ComReg's position is that Wholesale TDM products are not likely to be sufficiently effective substitutes for Ethernet and EFM based WHQA LLs. While a comparison of service characteristics, End User applications and service attribute importance is similar across TDM and Ethernet services, a number of factors outlined in paragraphs 5.74 to 5.80 suggest that these services are not effective substitutes at the wholesale level.
- 5.82 We consider in paragraphs 5.172 to 5.209 below whether TDM LLs constitutes a separate product market in and of itself or whether a broader product market definition is warranted.

Do xWDM and other very high bandwidth WHQA products fall within the same WHQA market as Ethernet WHQA LLs?

- 5.83 ComReg considers below whether LLs provided over xWDM and other high bandwidth technologies are an effective substitute for Ethernet and EFM LLs. In paragraphs 5.72 to 5.82 ComReg set out position that TDM based WHQA LLs did not fall within the same product market as WHQA LLs provided over Ethernet, EFM and xWDM WHQA LLs.

³⁷¹ 2016 Oxera Report, Section 3.1.4.

- 5.84 In relation to xWDM and other high bandwidth interfaced LL services, ComReg notes that at the retail level these services were considered to be effective substitutes for Ethernet LLs due to similarity of product characteristics, pricing and the intended use of these services³⁷².
- 5.85 ComReg is of the view that there is also likely to be effective substitutability between Ethernet and very high bandwidth WHQA LLs based on xWDM (and other) interfaces at the wholesale level. The introduction of 10 Gb/s wholesale Ethernet products³⁷³ by Eircom has reduced the bandwidth gap between Ethernet very high bandwidth LL products. As the demand for higher bandwidth services increases in the future, the substitutability of xWDM (and similar very high bandwidth interfaced LL products) with high bandwidth Ethernet services will likely strengthen further. Moreover, as noted in Section 4 above, the inclusion, or otherwise, of xWDM and other very high bandwidth xWDM and other interface LL services in the same market as Ethernet and EFM services is not likely to impact upon ComReg's overall assessment of competition in the market (given the relatively small take-up³⁷⁴ of these services).

Overall conclusions on whether xWDM (and other high bandwidth interface) WHQA LLs are an effective substitute for Ethernet WHQA LLs

- 5.86 Taking the above into account, ComReg's position is that xWDM (and other high bandwidth interfaces) WHQA LLs fall within the same market as Ethernet and EFM WHQA LLs.
- 5.87 ComReg refers to Ethernet, EFM and xWDM WHQA LLs collectively as Modern Interface ('MI') WHQA LLs.
- 5.88 ComReg considers below whether a 'chain of substitution' exists for all MI WHQA LL bandwidths. i.e., do all bandwidths for MI WHQA LLs fall within the same product market or is there a break in the chain of substitution whereby it is appropriate to delineate the MI WHQA product market according to certain bandwidths.

³⁷² See paragraphs 5.83 to 5.88 above.

³⁷³ See "[eircom Network Price List](#)",

³⁷⁴ At the end of 2018 there were approx. 200 such LLs.

Chain of substitution analysis for MI WHQA LLs

Overview

- 5.89 This Section sets out ComReg’s position on whether or not a chain of substitution exists for MI WHQA LLs of all bandwidths. ComReg considers this issue in some detail as both BT and Zayo disagreed with ComReg’s preliminary views in the 2016 Consultation³⁷⁵ and the 2018 Further Consultation that there is a single market for all MI WHQA services at all bandwidths, i.e. that there is no break in the chain of substitution for MI WHQA products.
- 5.90 A chain of substitution³⁷⁶ refers to the substitutability between numbers of similar products, which could lead to each of these products being part of the same market. A chain of substitution implies that a product at one end of the chain can potentially exert an indirect constraint on a product at the other end of the chain.³⁷⁷
- 5.91 For example, if product B is a substitute for products A and C, while A and C may not be direct substitutes, they may be considered to be in the same product market since their respective pricing may be constrained by substitution to B.³⁷⁸
- 5.92 As such, it is possible that an increase in price of one of the products in the chain could lead to a rise in the demand for a product further up the chain, in which case the associated products would be considered part of the same market for the purposes of a competition assessment.
- 5.93 In this regard, the Explanatory Note to the 2014 Recommendation observes that “.....both ends of the chain belong to the same market as they are both constrained by the same product(s)....”³⁷⁹. where there is no common pricing constraint, a break in the chain of substitution exists and two separate markets may be identified.

³⁷⁵ Paragraphs 5.40 to 5.51 in the 2016 Consultation and Paragraphs 4.106 to 4.107 of the 2018 Further Consultation

³⁷⁶ The concept of a ‘chain of substitution’ is described in the EC Notice on Market Definition (paragraphs 56-58) and is further described in the UK Office of Fair Trading document “Market definition: Understanding competition law”, December 2004 at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284423/oft403.pdf

³⁷⁷ Aproskie, J. and S. Lynch (2012) ‘The Chain of Substitution in Market Definition: Pitfalls in Application’ <http://www.compcom.co.za/wp-content/uploads/2014/09/Aproskie-and-Lynch-Chain-of-substitution-in-market-definition-Competition-Conference-2012.pdf>.

³⁷⁸ EC Notice on Market Definition.

³⁷⁹ Page 50 of the Explanatory Note to the 2014 Recommendation.

- 5.94 In the context of MI WHQA LLs ComReg assesses whether a chain of substitution exists between MI WHQA LL products offered at various bandwidths which are sufficiently close (i.e. the next links in the chain), and thereby subject to a common pricing constraint. For example, products that are close to the ends of the “chain” such as 10 Mb/s and 1 Gb/s circuits may not be close substitutes for each other, but both may be seen as substitutable for a 100 Mb/s LL in terms of product characteristics, pricing and intended use. If they are sufficiently close substitutes for a 100 Mb/s LL, then there may be a complete chain of substitution, meaning that all three LL products are part of a single product market.

Assessment for MI WHQA LLs

- 5.95 ComReg’s position is that there is a continuous chain of substitution across the bandwidths supplied over MI WHQA LLs. This is due to sufficiently similar product characteristics, services, and pricing for comparable bandwidths across the MI WHQA LLs. The maximum available bandwidth of the underlying MI WHQA LL connection is related to the transmission media used (for example, fibre) and the equipment installed at the customer’s premises. At such bandwidths, End Users can choose between Ethernet, EFM, xWDM and other MI retail LL services.
- 5.97 The retail End User analysis presented in Section 4 and in the 2016 Oxera Report³⁸⁰ indicates that there is no clear distinction between End User types or the intended use of purchased retail LL services when comparing purchasers of retail MI LLs across bandwidths. For example, Eircom’s retail customer base [§< ██████████ ██████████] appears to be sufficiently homogeneous, with several End Users purchasing circuits of both bandwidths for generic inter-site connectivity purposes. Thus, it appears that retail customers’ choice of products (or combinations thereof) will be affected by the relative prices of the products actually offered.

Whether a bandwidth break at 1 Gb/s exists for MI WHQA services?

Introduction

- 5.98 In their respective Submissions to the 2018 Further Consultation both BT and Zayo were of the view that a bandwidth break is likely to exist at 1Gb for MI WHQA services.

³⁸⁰ 2016 Oxera Report, Section 3.3.

- 5.99 In particular, both Respondents considered that ComReg did not consider pricing, demand or supply considerations properly when concluding that there was unlikely to be a break in the chain of substitution at 1Gb/s for MI WHQA services. These are considered collectively as the substitutability of services above and below 1Gb/s.
- 5.100 Furthermore, both made reference to the judgement of the Competition Appeals Tribunal ('**CAT**') in the UK which found that Ofcom³⁸¹ had erred in its application of the SSNIP test in relation to its finding that there was no bandwidth break in their Business Connectivity Market Review ('**BCMR**') in 2016.³⁸²
- 5.101 Finally, both BT and Zayo assert that a finding of a bandwidth break would have material impact on the subsequent SMP analysis and the extent of any proposed *ex ante* regulations arising from an SMP analysis of separate markets for MI WHQA services above and below 1 Gb/s.
- 5.102 Below, ComReg sets out its position in relation to the above considerations. In particular,
- (a) the substitutability of MI WHQA services above and below 1Gb/s including Respondent's views (discussed in paragraphs 5.102 to 5.114 below); and
 - (b) the relevance of the CAT judgement in relation to Ofcom's BCMR (discussed in paragraphs 5.115 to 5.145 to below);

The substitutability of MI WHQA services above and below 1Gb/s

Introduction

- 5.103 In this Section, ComReg firstly sets out its preliminary view as set out in the 2018 Further Consultation.³⁸³ ComReg then summarises the main points raised by BT and Zayo in relation to this. ComReg then sets out its assessment of Respondents' comments.

Preliminary Views set out in the 2018 Further Consultation

- 5.104 In the 2018 Further Consultation, ComReg stated the following;

³⁸¹ The UK Electronic Communications Regulator; See <https://www.ofcom.org.uk/home>.

³⁸² See <https://www.ofcom.org.uk/consultations-and-statements/category-1/business-connectivity-market-review-2016>.

³⁸³ See paragraph 5.1045.105 to below.

“Consistent with the SMP guidelines, ComReg applied the hypothetical monopolist test (HMT) framework and considered the key question to be assessed is whether there is a chain of substitution linking all MI WHQA services, or whether any breaks in the chain of substitution can be observed.”³⁸⁴

In the 2014 Market Research³⁸⁵ a quantitative type SSNIP test was applied to assess whether, in response to a SSNIP, surveyed respondents would change their LL purchasing behaviour and if so, what action would likely be taken. Thus, the 2014 Market Research examined substitutability between various data connectivity services (including substitutability between LL and broadband services).

Furthermore, in considering the likely demand-side and supply-side responses to a SSNIP³⁸⁶ ComReg highlighted a number of other factors that led to its preliminary view that MI WHQA LL products of all bandwidths fall within the same MI WHQA product market including:

- a. homogeneity of End User types purchasing LL of various bandwidths;*
- b. relatively narrow cost differentials associated with supplying LL services of particular bandwidths; and*
- c. relatively homogenous market share distribution, particularly when comparing market shares across Ethernet based WHQA LL product bandwidths up to 1Gb/s.³⁸⁷*

³⁸⁴ The hypothetical monopolist test (**‘HMT’**) involves observing the response to a small but significant non transitory increase in price (**‘SSNIP’**) in the price of the focal product. If a significant number of customers switch to an alternative product, making the price increase unprofitable, then the alternative product is also included in the relevant product market. See Paragraph 4.8 of the 2016 Consultation for more details.

³⁸⁵ See slides 124 to 132 of the 2014 Market Research.

³⁸⁶ See paragraphs 5.94 to 5.110 of the 2016 Consultation.

³⁸⁷ See paragraphs 4.106 to 4.109 of the 2018 Further Consultation

5.105 In summary, on the basis that retail LLs customers were purchasing services based on MI WHQA over the whole spectrum of bandwidths, alongside the fact that there was insufficient difference in the cost of supplying MI WHQA of different bandwidths, ComReg was of the preliminary view that there was no break in the chain of substitution at 1Gb/s. Finally, ComReg did not discern heterogeneous market share distributions up to 1 Gb/s.

Zayo's comments on the substitutability of MI WHQA above and below 1 Gb/s

5.106 In its Submission, Zayo asserts that

“Zayo and other OAOs build new fibre infrastructure to serve users of high speed leased lines services. The costs for the initial investment is substantial and the pay-back period is often close to 10 years. As is witnessed by the substantially higher OAO market share in very high bandwidth services³⁸⁸ across Europe, the higher speed, higher price, connections enable market entry by OAOs.³⁸⁹”

5.107 Furthermore, Zayo commented on the fact that the 2016 Oxera Report that accompanied the 2016 Consultation excluded xWDM services when ascertaining if there were price differences in the supply of MI WHQA services. In this respect, Zayo stated:

“The pricing analysis performed excluded all technologies other than Ethernet, despite the report also recommending that a number of other technologies (including WDM and others) should be included in the MI market. This is significant for the very high speed services and it is for those services that the other technologies are most likely to be used. The data for very high speed services is therefore more incomplete than is the case for the lower speed services.”

5.108 Furthermore, Zayo stated that the 2016 Oxera Report did not analyse:

³⁸⁸ Relative to lower speed lines.

³⁸⁹ Paragraph 3.1.1 of the Zayo Submission.

“.....the very high speed market as a stand-alone market but only as part of the single product market. This is likely to have masked some of the significantly different characteristics of the very high speed MI services market when compared to the market for the lower speed MI services.”³⁹⁰

5.109 Finally, Zayo took the view that ComReg misapplied the regulatory framework by stating that retail demand for services based on MI WHQA LLs was likely to see an increase in demand for higher bandwidths in the future.³⁹¹ In Zayo’s view, this was a misapplication of the SSNIP test as, according to Zayo:

“The fact that some customers may move from one product to another, as their needs and requirements change over time, does not constitute an argument for the products being in the same relevant market. The SSNIP test is intended to be applied to a customer at a point in time, testing whether that customer would move from one product to another in response to a small but significant non-transitory change in price. Zayo is not aware of a test that considers any future choices customers may make, particularly not where such choices are driven by a change in requirements rather than a price change. Zayo consider that ComReg’s analysis is flawed and should not be relied upon.”³⁹²

5.110 Prior to considering the issues noted above in Section 5.3 above, it is important to note that Zayo did not supply any evidence that the non-incumbent SPs have higher market shares for MI WHQA services above 1 Gb/s - either in its Submission or in a subsequent meeting with ComReg³⁹³. The same is the case with respect to no material evidence being supplied by Zayo for its assertion that demand characteristics are different for services above and below the 1Gb/s bandwidth threshold.

³⁹⁰ Paragraph 3.1.4 of the Zayo Submission.

³⁹¹ See paragraph 4.110 of the 2018 Further Consultation

³⁹² Paragraph 3.1.9 of the Zayo Submission.

³⁹³ Meeting between ComReg and Zayo, 14 July 2018.

5.111 Furthermore, in contrast to Zayo's statement that the SSNIP test is applied to a customer at a point in time, ComReg notes that the SSNIP is applied to relative pricing between products to ascertain if a hypothetical monopolist would realise a higher profit level through the imposition of a SSNIP on particular product(s). As such, it is aggregate demand – not individual customers - that are to be considered. Moreover, the non-transitory nature of the SSNIP means that the price increase must be assumed to be maintained for a reasonable period of time – usually at least a year. As such, the likely future demand, including future requirements for the demand for products to which the price increase is to be applied are inherent to the SSNIP concept.

BT's comments on the substitutability of MI WHQA above and below 1 Gb/s.

5.112 BT stated that ComReg did not properly address the points raised in relation to the single chain of substitution that BT made in relation to the issue in its response to the 2016 Consultation. BT maintains that ComReg,

...merely asserts that factors other than relative prices were taken into account. This is simply not tenable as a position to maintain in the absence³⁹⁴ of likely far more substantive and compelling evidence to the contrary.³⁹⁵

5.113 BT go on to state that in the UK, the CAT dismissed all price and non-price issues in relation to the matter of a single market across the bandwidths³⁹⁶ and then references the implications of the bandwidth break for the geographic market and SMP assessment.³⁹⁷

5.114 Furthermore, BT makes reference to the cost of network extension and the revenue needed to justify it as a factor in assessing if there is a bandwidth break. However, ComReg addresses this issue in its MI WHQA geographic market assessment in Section 5.7 below.

³⁹⁴ Although the meaning of this sentence is difficult to discern and seems contradictory, ComReg proceeds by assuming that BT means 'presence' and not 'absence'.

³⁹⁵ Paragraph 27, Annex 1 of the BT Submission Part 1.

³⁹⁶ *Ibid.*

³⁹⁷ Paragraph 28, Annex 1 of the BT Submission Part 1.

- 5.115 The issues raised in CAT judgement in relation to the BCMR and the impact of the bandwidth break on the SMP assessment are dealt with in the subsequent Section³⁹⁸. However, it should be noted that contrary to the statement that there is more substantive and compelling evidence for a bandwidth break, none is provided by BT.

[ComReg's Assessment of Respondents' Views in relation to a potential bandwidth break at 1Gb/s for MI WHQA services](#)

Introduction

- 5.116 In relation to the bandwidth break assessment, in the 2018 Further Consultation ComReg indicated the following:

“Consistent with the SMP guidelines, ComReg applied the hypothetical monopolist test (HMT) framework and considered the key question to be assessed is whether there is a chain of substitution linking all MI WHQA services, or whether any breaks in the chain of substitution can be observed.”

- 5.117 In the 2016 Consultation ComReg undertook an examination of WHQA products' pricing, alongside other evidence is considered at a qualitative level. This approach is typically used to assess the chain of substitution at different bandwidths and is consistent with the analysis applied by other NRAs³⁹⁹. ComReg does not consider that applying quantitative SSNIP test is a practical method of assessing the chain of substitution between different LL bandwidths given the large number of potential bandwidths supported by LLs⁴⁰⁰.

³⁹⁸ See paragraphs 5.282 to 5.286 below.

³⁹⁹ For example, see Ofcom's BCMR decision (referred to in footnote 160) and ACM's WHQA Market decision (referred to in footnote 182).

⁴⁰⁰ In this regard, ComReg notes the General Court's view that the SSNIP test is only one of the tools available for the purposes of defining the relevant market and might not be suitable in certain cases. See paragraph 82 in [Judgment of the General Court \(Third Chamber\) Topps Europe Ltd v European Commission, Case T-699/14, 11 January 2017.](#)

- 5.118 In the 2014 Market Research⁴⁰¹ a quantitative type SSNIP test was applied to assess whether, in response to a SSNIP, surveyed respondents would change their LL purchasing behaviour and if so, what action would likely be taken. Thus, the 2014 Market Research examined substitutability between various data connectivity services (including substitutability between LL and broadband services).
- 5.119 Furthermore, in considering the likely demand-side and supply-side responses to a SSNIP⁴⁰² ComReg highlighted a number of other factors that led to its preliminary view that MI WHQA LL products of all bandwidths fall within the same MI WHQA product market including:
- (a) homogeneity of End User types purchasing LL of various bandwidths;
 - (b) relatively narrow cost differentials associated with supplying LL services of particular bandwidths; and
 - (c) relatively homogenous market share distribution, particularly when comparing market shares across Ethernet based WHQA LL product bandwidths up to 1Gb/s.
- 5.120 In addition, it should be noted that ComReg's interviews with Multi-site retail LL customers provides some support for the existence of a single MI WHQA Market. In particular, 11 out of 17 interviewees indicated that they are likely to switch to higher bandwidth LLs in the next two to three years due to increasing data demands at their premises, the upgrading of ICT equipment and installation of new applications such as video conferencing⁴⁰³.

The Relevance of the CAT judgment

- 5.121 In this sub-Section ComReg considers BT's and Zayo's views concerning the decision of the UK's CAT UK that Ofcom had not properly applied the SSNIP test when it identified that there was no bandwidth break at 1 Gb for Contemporary Interface Symmetric Business Offering ('**CISBO**') and to remit the issue back to Ofcom for reappraisal.⁴⁰⁴

⁴⁰¹ See slides 124 to 132 of the 2014 Market Research.

⁴⁰² See paragraphs 5.94 to 5.110 of the 2016 Consultation.

⁴⁰³ See paragraph 4.14 of the 2018 Further Consultation.

⁴⁰⁴ Equivalent to the MI WHQA Markets in Ireland.

- 5.122 From the outset, it must be noted that the CAT did not find that there was likely to be a bandwidth break at 1 Gb. The CAT found that Ofcom had not properly applied the SSNIP test when considering the issue. However, it did not substitute its own findings for Ofcom's, instead it remitted the matter back to Ofcom for reconsideration.⁴⁰⁵
- 5.123 It must also be noted that ComReg does not form any views in relation to the initial Ofcom BCMR decision, the appeal to the CAT, or the CAT's subsequent finding in relation to this matter.
- 5.124 However, ComReg is of the view that it has correctly considered the matter of whether there is a bandwidth break in both the 2016 Consultation and the subsequent 2018 Further Consultation.⁴⁰⁶
- 5.125 Furthermore, ComReg has considered all pertinent factors when defining the Relevant WHQA Markets including the EC's Notice on Market Definition. However, for completeness, ComReg would note the following in relation to its market definition exercise in relation to the MI WHQA product market and the bandwidth chain of substitution assessment.
- 5.126 The EC's Notice on Market Definition states that:
- "Firms are subject to three main sources of competitive constraints: demand substitutability, supply substitutability and potential competition."*⁴⁰⁷
- 5.127 It then goes onto to state that;
- "Demand substitution constitutes the most immediate and effective disciplinary force on the suppliers...in particular in relation to prices."*⁴⁰⁸

⁴⁰⁵ In its 2019 BCMR Decision, OfCom maintained its views that there is no bandwidth break.

⁴⁰⁶ Paragraphs 5.164 to 5.182 of the 2016 Consultation and paragraphs 4.106 to 4.107 of the 2018 Further Consultation

⁴⁰⁷ Paragraph 13, EC's Notice on Market Definition.

⁴⁰⁸ Paragraph 13, EC's Notice on Market Definition.

5.128 Although ComReg did not undertake a quantitative SSNIP to ascertain if a SSNIP for a HMT at either above or below 1 Gb would be considered profitable due to demand switching to products sold at the other side of the 1Gb threshold, the pricing of the products as set out below indicates that the observed behaviour in the MI WHQA Markets means that a SSNIP would be unlikely to be profitable.⁴⁰⁹

5.129 Furthermore, the EC's Guidelines further state that:

*"The exercise of market definition consists of identifying the effective alternative sources of supply for the customers of the Undertakings involved."*⁴¹⁰

5.130 Crucially, in relation to supply substitution, the EC states that:

*"Supply-side substitution may also be taken into account when defining markets in those situations where its effects are equivalent to those of demand substitution in terms of effectiveness and immediacy. [Emphasis Added]"*⁴¹¹

5.131 The EC then go on to describe this in more detail that:

*"This means that suppliers are able to switch production to the relevant products and markets them in the short term without incurring significant additional costs or risks in response to small and permanent changes in relative prices...Such an impact in terms of effectiveness and immediacy is equivalent to the demand substitution effect."*⁴¹²

⁴⁰⁹ ComReg understands that the CAT appeal was heard solely in relation to demand side substitution. See paragraph 174 of the CAT judgement.

⁴¹⁰ Paragraph 13, EC's Notice on Market Definition.

⁴¹¹ Paragraph 20, EC's Notice on Market Definition.

⁴¹² Paragraph 20 of the EC's Notice on Market Definition.

- 5.132 ComReg notes that the above describes what analytical approach is to be taken in relation to applying a SSNIP on a HMT either side of the 1 Gb bandwidth level. All SPs active in the MI WHQA market(s) are supplying services both above and below this bandwidth level as confirmed by SPs' 2018 data provided in response to the SIR issued by ComReg 14 March 2019. Furthermore, the barriers to supplying services above or below this bandwidth level are not significant as they merely involve changing the NTU equipment⁴¹³ and corresponding exchange card or module and doesn't involve any other material work.⁴¹⁴ In relation to the immediacy of the supply side response of being able to install the alternative NTU, ComReg notes that MI WHQA services are supplied on a multi-year basis and other NTUs can be installed in a matter of days.
- 5.133 This effect in relation to the supply of MI WHQA is that which is described in the EC Notice on Market Definition, where it states that:
- “These situations typically arise when companies market a wide range of qualities or grades of one product; even if, for a given final customer or group of customers, the different qualities are not substitutable, the different qualities will be grouped into one product market, provided that most of the suppliers are able to offer and sell the various qualities immediately. In such cases the relevant product market will encompass all products that are substitutable in demand and supply...”*⁴¹⁵
- 5.134 This situation is in contrast to that between HB TI WHQA and LB TI WHQA where neither demand or supply substitutability is considered sufficient to constrain a HM at either side of the 2Mb bandwidth threshold.
- 5.135 For the reasons outlined above, ComReg is of the view that a SSNIP by a HM at either above or below the 1Gb threshold would not be profitable. As such, from an economic theory perspective, all MI WHQA bandwidths are considered part of the same market irrespective of bandwidth.

⁴¹³ Either from a 1Gb to a 10 G/b WHQA LL or vice versa. Furthermore, the costs of supplying extra core bandwidth to a particular premises are not considered significant as [redacted].

⁴¹⁴ [redacted].

⁴¹⁵ Paragraph 21, EC's Notice on Market Definition.

5.136 ComReg now turns to the empirical observations that can be derived from actual pricing for the supply of MI WHQA above and below the 1Gb bandwidth threshold.

Updated Oxera Report

5.137 ComReg requested Oxera to update its analysis ('**Updated Oxera Report**')⁴¹⁶ of the pricing information for WHQA services that it undertook for the 2016 Consultation.⁴¹⁷ In particular, Oxera used a more comprehensive database containing all wholesale MI WHQA circuits sold by all operators in 2016 and 2017.⁴¹⁸ This has allowed for a more updated and therefore more robust evidential basis to undertake an analysis of pricing of MI WHQA services to ascertain if any break in pricing at 1Gb is observed.⁴¹⁹ In this Section ComReg provides a summary of the finding of the Updated Oxera Report.

5.138 Oxera examined the pricing of 3,121 WHQA LL circuits provided by 11 SPs, with such LL circuits ranging in bandwidths from 25Mb to 100Gb sold at the wholesale level in Ireland in 2016 and 2017.⁴²⁰ At each bandwidth level, the average revenue was then calculated. Some particular bandwidths are observed more often than others, in particular, the 100Mb, 1Gb and 10Gb bandwidths accounted for 77.9% of all observations.

5.139 In order to allow for meaningful presentation of the data, the bandwidths were assigned to particular 'pots' (buckets) to aid visualisation. The results of this exercise are reproduced in Table 10 and Figure 59 below.

⁴¹⁶ The Updated Oxera Report is set out in Annex 5 of this Decision.

⁴¹⁷ The 2016 Oxera Report.

⁴¹⁸ Based on the information supplied in response to SIRs.

⁴¹⁹ See Updated Oxera Report is attached at Annex 5 of this Decision.

⁴²⁰ Note that this is the total number of wholesale circuits sold between SPs on those years. The SPs are BT, Eircom, Colt, GTT, enet, ESBT, EU Networks, Magnet, Siro, Virgin Media and Verizon.

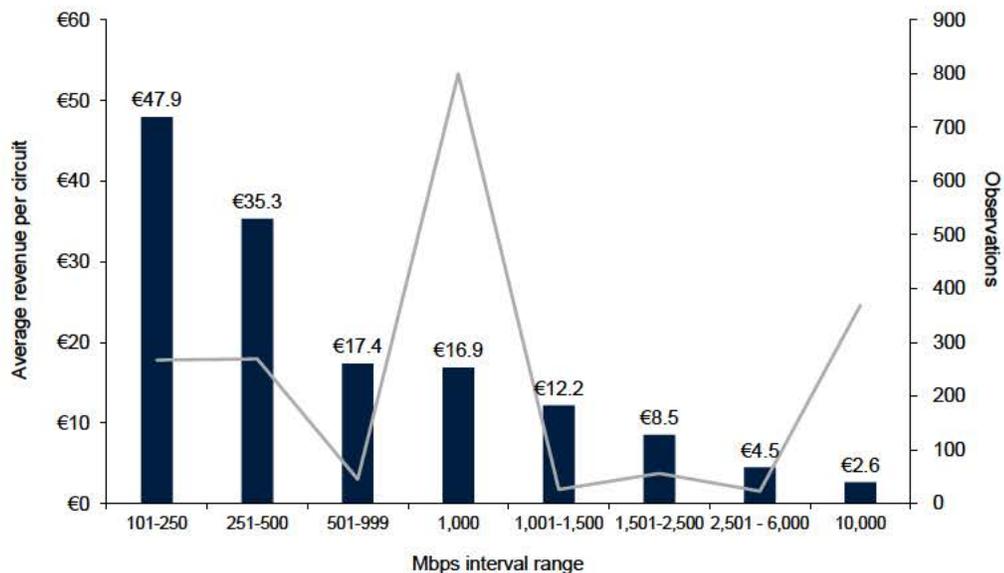
Table 10: Average revenue per circuit in 2017

Bandwidth range (Mbps)	Volume of circuits	Average revenue per circuit (€)
0–249	1,516	9,380
250–499	212	11,976
500–999	117	13,715
1000–2,499	860	14,464
2,500+	416	23,319

5.140 There are many observations at <100Mb, but ComReg does not consider these material when considering whether there is a bandwidth break at 1 Gb because these bandwidths are so far below the bandwidth point of 1Gb that is being discussed here. Oxera has therefore excluded these from Figure 59 below.

5.141 Figure 93 below details the number of observations and the average revenue for particular bandwidth pots (excluding those below 100Mb). It shows that there is an inverse relationship between bandwidth and price, with no discernible change in this trend at 1 Gb. In fact, the inverse relationship of higher bandwidths realising lower average revenues continues.

Figure 59: Average revenue⁴²¹ per Mbps and number of observations by bandwidth interval



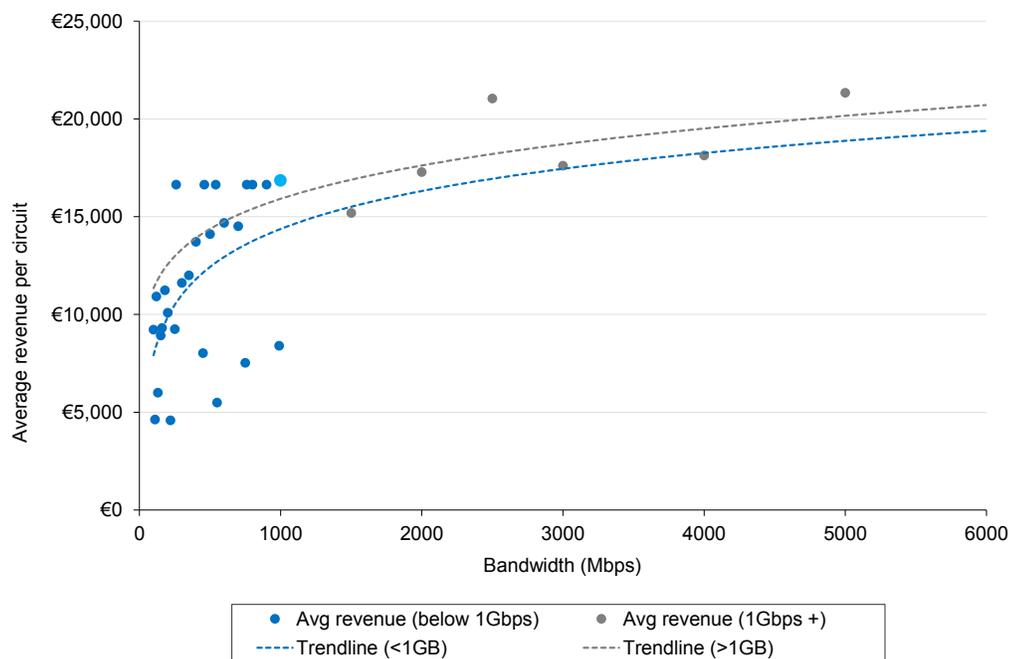
⁴²¹ Note: Average revenue per Mbps calculated based on dividing the per circuit revenues by the bandwidth of the circuit (based on the data set out in Table 3.1). Low bandwidth observations (lower than 100Mbps) were excluded as they are not relevant for the consideration of the bandwidth break at 1Gbps.

5.142 However, Oxera notes that this observation may be partially accounted for in the choice of particular bandwidth pots. In order to overcome this, Oxera also plotted the data in a linear fashion showing average revenue for all bandwidth points above and below 1Gb.

5.143 As Oxera state:

“The figure shows that the average circuit revenues across different bandwidths follow a fairly smooth trend, and that they are not characterised by sudden jumps. For clarity, the data point at 1Gbps (1,000Mbps) is highlighted in blue.”⁴²²

Figure 60: Average revenue per circuit; broken down by bandwidth⁴²³



5.144 Oxera concludes that there does not appear to be a discernible break in the chain of substitution at the 1 Gb level for MI WHQA products.⁴²⁴ As such, there is no empirical evidence to support the contention that there is a break in the chain of substitution depending on bandwidth for the MI WHQA Markets.

⁴²² Section 2.3 Updated Oxera Report

⁴²³ Note: Each scatter point represents average revenues within a 10Mbps interval in the source data. Each trend line is calculated using only observations either above or below 1Gbps.

⁴²⁴ See page 9 of the Updated Oxera Report.

Conclusion

- 5.145 Due to the fact that neither economic theory nor the empirical evidence detailed above support an argument that there is a break in the chain of substitution for MI WHQA services at 1Gb, ComReg considers all MI WHQA services at all bandwidths to be part of the same product market.

Supply-Side Substitution – MI WHQA LLs

Overview

- 5.146 In this Section ComReg sets out its position on its assessment in relation to any impact of supply-side substitution in the MI WHQA markets.
- 5.147 In the context of market definition, it should be considered if an alternative SP not already active in the market could provide an effective supply-side substitute to a MI WHQA LL. In particular, we consider whether a SP would be likely, in response to a SSNIP in MI WHQA LL prices (above the competitive level), to switch production into MI WHQA LLs in the immediate to short term (typically within one year) without incurring significant costs, and start supplying services of equivalent characteristics to the product and, as a consequence of such provision, render the HM's price increase unprofitable.
- 5.148 Therefore, in the event that limited demand-side substitution exists⁴²⁵, constraints could arise from potential competitors who may, in the future, through supply-side substitution, seek to provide WHQA LLs either at the wholesale level to other SPs and/or self-supply as an input to the provision of their own downstream retail services. This could, for example, include WHQA supplied by vertically-integrated alternative⁴²⁶ retail LL SPs (or suppliers of broadband services and suppliers of dark fibre services) who could readily switch to supplying these services
- 5.149 In carrying out this assessment, ComReg has considered SP responses to the various SIRs, in particular, views and evidence provided by SPs that indicate the strength of any direct constraint arising from supply-side substitution (including from vertically integrated SPs).
- 5.150 Below ComReg considers the potential for WHQA supply-side substitution by the following SPs (including the issue of self-supply where relevant):

⁴²⁵ However, given the number of alternative sources of supply in the MI market, it is the view of ComReg that sufficient demand side substitutes are present and will remain for the duration of this review.

⁴²⁶ We use the word 'alternative' in the sense that it refers to SPs other than Eircom.

- (a) Alternative SPs of retail LL services (discussed in paragraphs 5.151 to 5.154 below);
- (b) SPs of broadband services (discussed in paragraphs 5.155 to 5.157 below); and
- (c) SPs of dark fibre services (discussed in paragraphs 5.158 to 5.160 below).

Supply-side substitution (including self-supply) from alternative SPs of MI LL services

- 5.151 In paragraphs 5.43 to 5.145 above ComReg assessed the effectiveness of demand-side constraints and set out its position that the MI WHQA product market included Ethernet, EFM and xWDM LLs provided over wired networks, with all bandwidths of such LLs included within the same product market.
- 5.152 In assessing the supply of such MI WHQA LLs over alternative networks, ComReg set out its position that given the extensive coverage of these networks, similarity of MI WHQA products' characteristics and pricing when compared to Eircom's MI WHQA products, and the actual take up of these MI WHQA LL products, they are likely to impose sufficiently effective demand-side constraints on Eircom's MI WHQA LL products.
- 5.153 The remaining SPs considered in ComReg's analysis AT&T and Fulnet/Strencom do not own any infrastructure of their own and rely on MI WHQA products for the supply of their retail services. These SPs currently are not supplying MI WHQA services. Even if these SPs were to invest in infrastructure to provide MI WHQA services over the lifetime of this market review, it is not envisaged that the requisite own infrastructure would be put in place in sufficient time and with sufficient coverage and impact for them to be considered an effective supply-side constraint on a HM supplier of MI WHQA LLs.
- 5.154 As such ComReg's position is that, in response to a SSNIP, alternative SPs that were not considered to provide effective demand-side constraints on Eircom are also unlikely to provide an effective direct supply-side constraint on MI WHQA supplied by a HM. As such, ComReg's position is that notional supply-side substitution from alternative SPs of MI LL services should not be included in the MI WHQA product market.

Supply-side substitution (including self-supply) from SPs offering broadband services

- 5.155 Supply side substitution appears technically possible, in that an LLU operator which is not currently providing EFM-based Ethernet services (which are considered to fall within the MI WHQA product market) could begin to do so relatively quickly and easily.

- 5.156 However, ComReg notes that all but one of the Access Seekers either purchasing Eircom's LLU⁴²⁷ products or other SPs such as Virgin Media offering retail broadband over its own network (or a mixture of both) are already 'present' in the market by virtue of the fact that they already supply MI retail LLs and/or MI WHQA LLs.
- 5.157 For these reasons, ComReg's position is that, over the period of this market review, providers of broadband services, including their self-supply, that are not currently supplying MI WHQA LL services, are unlikely to provide an effective supply-side constraint on MI WHQA supplied by a HM, and should not therefore be included in the MI WHQA product market.

Supply-side substitution (including self-supply) from SPs providing dark fibre services

- 5.158 As discussed above some of the SPs⁴²⁸ supplying dark fibre services are also active in the provision of retail and/or wholesale MI LL services. Thus, the competitive constraint arising from these SP is already accounted for in ComReg's analysis above.
- 5.159 In relation to dark fibre SPs not active in the MI WHQA Markets such as [3< ██████████ ██████████], ComReg refers to the 2016 Oxera Report where it was noted⁴²⁹ that there are large fixed costs associated with entering the MI WHQA Markets as a dark fibre SP would need a network of active electronic (e.g. Ethernet, xWDM equipment) in locations appropriate for aggregating customer traffic. Additional ongoing costs of network operations (such as maintenance, fault monitoring and repair) and other front and back office vendor support would also be associated with moving to an active product delivery. Even if dark fibre SPs were to enter the WHQA Market in response to a SSNIP by the HM, such entry would be likely to involve significant time delays and incur significant cost.
- 5.160 For these reasons, ComReg considers that dark fibre SPs that are not currently supplying MI WHQA LL services are unlikely to provide an effective supply-side constraint on the provision of MI WHQA by a HM within the period of this market review.

⁴²⁷ BT, Digiweb, Magnet and Colt.

⁴²⁸ Digiweb, Eircom, EU Networks and Vodafone.

⁴²⁹ See 2016 Oxera Report, Section 7.

Summary of ComReg's Position on Direct Constraints – MI WHQA LLs

- 5.161 In paragraphs 5.41 to 5.160 above, ComReg has examined the potential for demand-side and supply-side constraints from SPs of wired (and wireless) WHQA services, as well as supply side substitution from dark fibre and wholesale broadband services, and whether these alternative products warrant inclusion in the relevant product market.
- 5.162 ComReg notes that there are several competing WHQA suppliers that are likely to provide a sufficiently immediate and effective competitive constraint on a HM's provision of wired WHQA LLs provided over EFM, Ethernet, xWDM and other modern interface technologies. Thus, WHQA products supplied by these SPs are included in the WHQA markets. On the other hand, dark fibre and broadband services, along with services provided over wireless P2P radio links, are not likely to exert a significant competitive constraint such that it would warrant their inclusion in the MI WHQA Markets.
- 5.163 Furthermore, ComReg's position is that the self-supply of MI WHQA by competing WHQA SPs using alternative wired networks, would likely be effectively re-directed to supply in the WHQA LL markets in response to a SSNIP of MI WHQA LLs, and therefore would assert an effective direct competitive constraint on a HM supplier in the provision of WHQA.

Assessment of Indirect Constraints – MI WHQA LLs

- 5.164 Even in the absence of actual or potential direct constraints, a vertically-integrated alternative SPs' self-supply of retail LLs could be part of a relevant WHQA market if it is shown that its presence in related retail markets is able to exercise a sufficiently effective and immediate indirect pricing constraint on a HM's supply of WHQA products.

The Concept of Indirect Constraints

- 5.165 As set out by the OECD:

...a firm active in an upstream market may be directly constrained if other firms operate at that level. For example the ability of Firm A to raise prices above the competitive level for a wholesale input X used to provide retail services is constrained by the ability of firms B and C to switch wholesale input Y (substitute of X) supplied by firm B (demand substitution) or the ability of firm B to begin supply of wholesale input X (supply substitution). However, when inputs X and Y are not substitutes and firm B is unable to supply input X within a short term, firm A may still be indirectly constrained in imposing a price for input X as long as there is competition in the retail market between firms using X and Y inputs.⁴³⁰

- 5.166 In the context of MI WHQA LLs, indirect constraints could arise in a situation where a vertically integrated retail LL SP (not active in the merchant market) could constrain the profitability of a SSNIP by a HM supplier of MI WHQA LLs where sufficient customers were to switch to this alternative SP providing retail MI LLs (who is not active in the wholesale market).

Relevance to MI WHQA Markets

- 5.167 The main distinction between a MI WHQA LL and a MI retail LL is that the former is sold to another SP and the latter is provided to an End-User who is not an SP.⁴³¹
- 5.168 Currently, all SPs that have their own network to supply retail leased lines are also active in supplying WHQA LL services. Therefore, ComReg's position is that indirect constraints are not a relevant consideration in defining the relevant WHQA market as they have been already accounted for in the context of the assessment of direct constraints.⁴³²

Overall Position on the MI WHQA Product Market Assessment

- 5.169 In paragraphs 5.39 to 5.168 above ComReg has considered the definition of the Relevant MI WHQA Markets from a product perspective ('**MI WHQA Product Market**') and, in so doing has considered demand-side and supply-side constraints, as well as indirect constraints. ComReg's position is that the MI WHQA Product Market is comprised of:

⁴³⁰ Section 2.1.2; Defining the relevant market in telecommunications; OECD; 2014.

⁴³¹ As noted earlier, a Wholesale LL can be used to provide retail services and/or act as network inputs for a SP.

⁴³² Furthermore, they are not considered relevant to the SMP assessment for similar reasons. However, ComReg considers whether services external to the relevant markets delivered over wireless P2P radio links when undertaking its competition assessment of the MI WHQA markets in Section 6 below.

- (a) Wired wholesale Ethernet LLs;
 - (b) Wired wholesale EFM LLs; and
 - (c) Wired wholesale xWDM and other modern interface high capacity LLs.
- 5.170 In the case of the MI WHQA Product Market, Eircom's self-supply (other than its self-supply for own network purposes) is included in the market as well as WHQA products provided over alternative wired networks. Self-supply of alternative network SPs is also included in the WHQA Product Markets.
- 5.171 ComReg's position is that the MI WHQA Product Market does not include:
- (a) Wireless WHQA LLs.
 - (b) Analogue, Digital and TDM WHQA LLs;
 - (c) Wholesale broadband services; and
 - (d) Dark fibre services.

5.6 TI WHQA LL Product Market Assessment

- 5.172 In paragraphs 5.72 to 5.82 above, ComReg set out its position that TDM WHQA products fell within a separate product market to the MI WHQA Product Market. In paragraphs 5.174 to 5.209 below ComReg considers whether TDM LLs constitute a separate TI product market in and of itself or whether a broader TI product market definition is warranted. In doing so, ComReg considers;
- (a) Demand-side substitution (discussed in paragraphs 5.174 to 5.202 below);
 - (b) Supply-side substitution, including the self-supply of vertically integrated SPs (discussed in paragraphs 5.203 to 5.205 below); and
 - (c) Indirect constraints (discussed in paragraphs 5.206 to 5.207 below).
- 5.173 ComReg then sets out its overall conclusions on the TI WHQA product markets in paragraphs 5.208 to 5.209.

Demand-Side Substitution – TI WHQA LLs

- 5.174 Below ComReg considers whether Analogue and Digital wholesale LLs fall within the same product market as TDM based WHQA LLs.

Do Analogue and Digital WHQA products fall within the same product market as TDM based WHQA LLs?

- 5.175 In Section 4 ⁴³³ ComReg set out its position that Analogue and Digital retail LLs fell within the same product market as TDM LLs. ComReg now considers below whether this is replicated at the wholesale level.
- 5.176 ComReg considers this to be the case at the wholesale level given that there are minimal differences between such WHQA products at either level of the supply chain. In particular, Analogue WHQA are dedicated direct connections linking two sites using standard copper access lines usually used to provide PSTN services. These can support private voice services, and may be used as a permanent voice connections between business locations, as commonly used by financial service institutions. They can also support data services where customers can connect analogue to digital modems, e.g. V.34⁴³⁴ modems, which can support up to 28.8Kb/s data transfer rates. These are often used by utilities and local authorities for telemetry purposes.

Demand Side Substitution

Product Characteristics

- 5.177 Analogue and low bandwidth TDM WHQA offer broadly equivalent functionality as they are using the same technology. Therefore, many of the TDM WHQA characteristics outlined in Table 9 above are also exhibited by analogue WHQA. For example, analogue WHQA can transmit digital information while TDM can transmit analogue signals. Analogue WHQA can support bandwidth of up to 56 Kb/s which is very close to the lower end of bandwidth range provided by TDM WHQA (64 Kb/s).
- 5.178 Thus, ComReg's view is that due to the low speed and legacy nature of the technological standards, analogue WHQA share many of the characteristics of TDM based retail LLs.

Pricing

- 5.179 ComReg has relied on Oxera's analysis of Eircom's wholesale prices for analogue and TDM WHQA. Oxera's analysis highlighted that the price of analogue WHQA is similar to the price of TDM end-user link supporting 64Kb/s bandwidth. Thus, there does not appear to be a significant break between price ranges of analogue and TDM WHQA up to 2 Mb/s.

⁴³³ See paragraphs 4.209.

⁴³⁴ ITU modem standard.

Intended Use

- 5.180 Similarly to TDM, analogue WHQA is predominantly used by utility operators as well as financial, transport and government institutions for activities that do not require high bandwidth services such as remote network monitoring, critical system control and secure transactional applications. This is in contrast to Ethernet based retail WHQA which are typically of higher bandwidths and used for data services, alongside e-mail and VPN's.

Substitution

- 5.181 Similarly to TDM WHQA, the users of analogue WHQA are generally migrating towards MI based LL services. While there is no evidence of substantial switching between TDM and analogue WHQA, ComReg considers that these WHQA services are likely to exhibit similar asymmetric substitution i.e. both TDM and analogue WHQA users are migrating, to a degree, towards MI based WHQA services.
- 5.182 Oxera's analysis of Eircom's wholesale prices for analogue LL indicated⁴³⁵ that the price of an End-User link at 64Kbps (1.5km, zero main link distance) at €698 is similar to the price of local exchange only analogue two-wire (copper pair) leased line at €615. Therefore, in response to a 5% to 10% SSNIP in TDM based WHQA, a sufficient number of purchasers of this product would be likely to switch to analogue based WHQA.

Supply Side Substitution

- 5.183 ComReg notes that retail analogue LL SPs also tend to supply retail TDM LL services. Thus, the competitive constraint arising from providers of analogue WHQA is already considered in the demand side substitution analysis above.

ComReg's Conclusions on whether Analogue LLs are an effective substitute for TDM LLs and Ethernet LLs

- 5.184 Having considered relevant demand side factors including functionality, pricing and consumer usage, as well as relevant supply side factors, ComReg's view is that analogue LLs fall within the same relevant retail product market as TDM WHQA but not in the same product market as Ethernet WHQA.

⁴³⁵ 2016 Oxera Report, Table 3.6.

- 5.185 Analogue and TDM WHQA have sufficiently similar product characteristics and are used in a similar way by end-users.
- 5.186 Furthermore, Oxera has identified that Analogue and Digital WHQA have sufficiently similar demand and supply characteristics at the wholesale level as TDM LLs.⁴³⁶
- 5.187 ComReg's position is that there is likely to be sufficiently effective substitutability between Analogue, Digital and TDM based WHQA LLs of bandwidths⁴³⁷ up to and including 2Mb/s.
- 5.188 As such, ComReg considers that Analogue and Digital WHQA LLs are likely to fall within the same WHQA product market as TDM LLs.
- 5.189 ComReg refers to Analogue, Digital and TDM WHQA LLs collectively as Traditional Interface ('**TI**') WHQA LLs.

Chain of substitution analysis for TI WHQA LLs

Overview

- 5.190 Below ComReg sets out its position that there are separate TI WHQA product markets, namely a Low Bandwidth ('**LB**') TI WHQA market which includes LLs up to and including bandwidths of 2Mb/s ('**LB TI WHQA Product Market**') and a separate High Bandwidth ('**HB**') TI WHQA market which includes LLs above bandwidths of 2Mb/s ('**HB TI WHQA Product Market**').
- 5.191 As set out in Section 4, ComReg's position is that there are separate retail TI markets, namely a LB TI Retail Market and a HB TI Retail Market. For similar reasoning to that set out in Section 4, ComReg also considers that the same separate TI WHQA product markets exist.

Chain of Substitution analysis

- 5.192 As highlighted in Section 4 above, in the retail TI LL markets the majority of End-Users are purchasing Analogue and TDM LLs with bandwidths of up to and including 2Mb/s. However, there are a relatively small number of TDM circuits⁴³⁸ at bandwidths above 2Mb/s.

⁴³⁶ 2016 Oxera Report; Section 3.1.6.

⁴³⁷ See further discussion below commencing at paragraph 5.192 as to whether TI LLs of all bandwidths fall within the same product market.

⁴³⁸ 149 retail TDM LLs.

- 5.193 ComReg notes that historically, TDM circuits with bandwidth increments above 2Mb/s that were used for mobile backhaul applications have now also largely migrated to Ethernet interfaces.⁴³⁹
- 5.194 ComReg has also assessed Eircom's pricing of wholesale TDM circuits in order to identify whether a sufficient difference in pricing across bandwidth increments exists such that would suggest a break in the chain of substitution.⁴⁴⁰
- 5.195 Oxera considered whether a continuous chain of substitution existed for TI WHQA LLs. In doing so, Oxera's analysis⁴⁴¹ includes comparable elements from the entire cost stack faced by an Access Seeker, purchasing a single TDM LL segment from Eircom as described in paragraph 5.197 below. Oxera examined pricing across bandwidth increments using a range of scenarios that assess whether products of adjacent bandwidths are possible substitutes, while holding other attributes such as the distance element of PPC components constant.⁴⁴²
- 5.196 The analysis of LL pricing at lower bandwidths (up to 2Mb/s) indicated a possible break at 1Mb/s which relates to a step-up in the pricing of an End-User link at bandwidths of 1024 Kb/s and above, as well as the fact that a >2Mb/s TDM LL requires two copper pairs instead of one. However, as noted by Oxera, price discontinuity is relatively small (6% price increase in terms of price-per-unit of bandwidth) at the 1Mb/s bandwidth.⁴⁴³ If higher bandwidths are required, then an SP is likely to purchase an Ethernet based circuit rather than either a number of TDM 2Mb/s LLs or a 34Mb/s LL.

⁴³⁹ For example [redacted] has migrated the [redacted] mobile network backhaul from TDM LLs to Ethernet LLs.

⁴⁴⁰ In the absence of reliable pricing data on the broader market, ComReg uses Eircom's regulated prices as a proxy

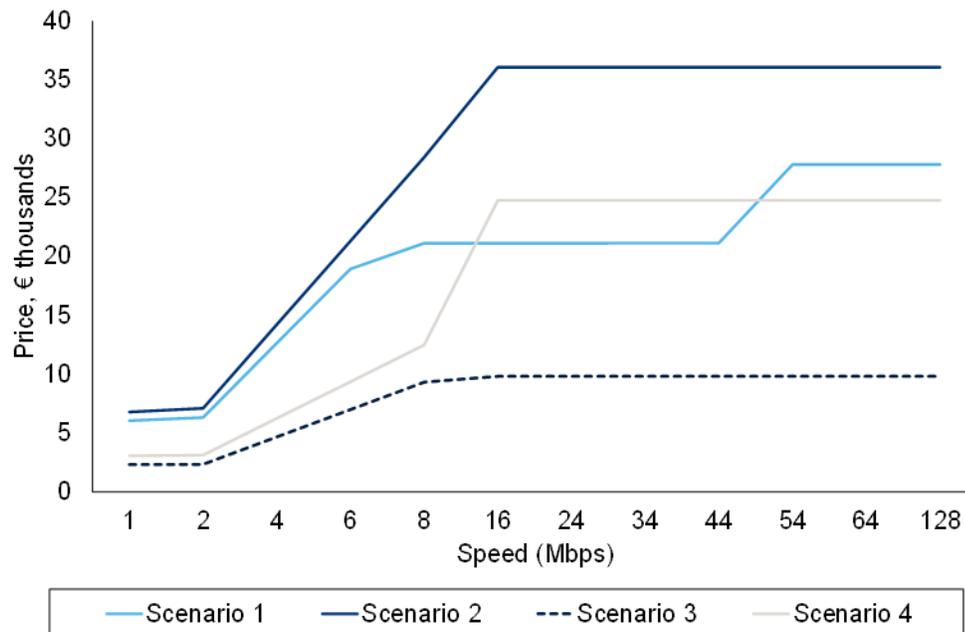
⁴⁴¹ 2016 Oxera Report; Section 3.2.

⁴⁴² In constructing different scenarios, Oxera varied End User link, main user link and transport link distances as well as the main link type. See Table 3.6 in the 2016 Oxera Report for detailed description of assumptions used for each scenario.

⁴⁴³ Oxera Report; Section 3.2.2

5.197 Figure 61 below illustrates that the analysis of LL pricing at higher bandwidths indicates a significant break in pricing for TDM circuits above 2Mb/s across all scenarios which would suggest that there is no common pricing constraint between TDM LLs of 2Mb/s and TDM circuits with bandwidth increments above 2Mb/s. In this regard, ComReg notes that the lowest available bandwidth in Ireland for TDM products above 2Mb/s is 34Mb/s. As noted by Oxera, unlike in other countries, 8Mb/s (E2 - copper based) TDM services are not offered in Ireland thus further indicating a potential break in the chain of substitution since there are no intermediate products with bandwidths between 2Mb/s and 34Mb/s. Therefore, Access Seekers are unlikely to switch to higher bandwidth TDM products in response to a HM's SSNIP in WHQA prices of low bandwidth TI products. If higher bandwidths are required, then an SP is more likely to purchase an Ethernet based circuit rather than either a number of individual TDM 2Mb/s LLs or a 34Mb/s LL.

Figure 61: TDM bandwidth price analysis⁴⁴⁴



Source: Oxera analysis of Eircom wholesale TDM leased line pricing.

⁴⁴⁴ Page 12, 2016 Oxera Report.

5.198 Moreover, the conditions of competition in the provision of TDM services above 2Mb/s also appear to be different. Figure 71 below indicates that at the end of 2018 BT was the largest supplier of TI WHQA LL services above 2Mb/s with a market share of [%< ██████████] compared to Eircom's market share of [%< ██████████]. In contrast, for TI WHQA LLs ≤2Mb/s, Eircom's market share was [%< ██████████] compared to BT's [%< ██████████] .

Conclusions on Chain of substitution analysis for TI WHQA LLs

5.199 Having regard to the analysis in paragraphs 5.192 to 5.198 above, ComReg considers that there is likely to be a 'break' in the chain of substitution for TI LL products with bandwidths above 2Mb/s displaying sufficient differences in terms of pricing and conditions of competition compared to TI LL services with bandwidth of up to and including 2Mb/s.

5.200 Thus, ComReg's position is that separate TI WHQA product markets are likely to exist, namely:

- (a) a Low Bandwidth Traditional Interface ('TI') WHQA product market consisting of LLs carried over analogue, digital and TDM interfaces with speed of ≤2Mb/s ('**Low Bandwidth ('LB') TI WHQA Product Market**'); and
- (b) a High Bandwidth TI WHQA product market consisting of LLs provided over a TDM interface with speeds > 2Mb/s, (the '**High Bandwidth ('HB') TI WHQA Product Market**').

5.201 Both the LB TI WHQA Product Market and HB TI WHQA Product Market are collectively referred to as the '**TI WHQA Product Markets**'.

5.202 Below ComReg considers whether the scope of the TI WHQA Product Markets should be expanded on the basis of any supply-side considerations.

Supply-Side Substitution – TI WHQA LLs

5.203 ComReg's position is that given the TI WHQA Product Markets are declining, with trivial numbers of new circuits being ordered, there is no incentive for alternative SPs to invest in building infrastructure in order to enter these markets, given any such investments are likely to be largely sunk and potentially stranded.

5.204 The number of LB TI WHQA LLs (and associated retail LLs) is in steady decline. In 2013 there were 9,261 such circuits in operation. By 2018, this had decreased to 3,503. Furthermore, this demand is almost exclusively legacy in nature, with only [%< ██████████] new LB TI WHQA LLs sold by Eircom in 2018.

- 5.205 ComReg considers it likely that the volumes of these TI LLs will continue to decline over the duration of the review, however, the pace of this decline is likely to be slower given reductions to date have been impacted by bulk type circuit reductions⁴⁴⁵ which have now occurred. As such, in ComReg's view, there is likely to be insufficient potential demand to incentivise an SP to invest in infrastructure to provide LB TI WHQA LLs in the future.

Assessment of Indirect Constraints – TI WHQA LLs

- 5.206 As noted in the context of the assessment of indirect constraints in the MI WHQA Product Market⁴⁴⁶, SPs active only at the retail level could also potentially impose a degree of constraint in the Relevant TI WHQA Markets. In this context ComReg considers whether a vertically integrated SP that is not active in the provision of TI WHQA LLs could provide a sufficiently immediate and effective indirect constraint on a HMT such that their TI retail LLs should be included in the TI WHQA Product Markets.
- 5.207 ComReg notes that there are no SPs that operate solely in the TI retail markets. In view of this, ComReg's position is that indirect constraints are not a relevant consideration in defining the TI WHQA Product Markets.⁴⁴⁷

Overall conclusions on the TI WHQA Product Market

- 5.208 In paragraphs 5.172 to 5.207 above ComReg has considered the definition of the relevant TI WHQA markets from a product perspective and, in so doing has considered demand-side and supply-side constraints, as well as indirect constraints. ComReg's position is that the TI WHQA Product Markets are as follows:
- (a) a Low Bandwidth Traditional Interface ('TI') WHQA product market consisting of all wholesale leased lines carried over analogue, digital and TDM interfaces with speed of $\leq 2\text{Mb/s}$, (the '**Low Bandwidth ('LB') TI WHQA Product Market**'); and
 - (b) High Bandwidth TI WHQA product market which consists of all wholesale leased lines provided over a TDM interface with speeds $> 2\text{Mb/s}$, (the '**High Bandwidth ('HB') TI WHQA Product Market**').

⁴⁴⁵ In this regard, ComReg notes that Eircom's main competitor in this market, BT, has [\geq BT [REDACTED]].

⁴⁴⁶ See paragraphs 5.164 to 5.168 above.

⁴⁴⁷ Furthermore, they are not considered relevant to the SMP assessment for similar reasons.

5.209 ComReg refers to the above product markets collectively as the '**TI WHQA Product Markets**'.

Overall Conclusions on MI WHQA and TI WHQA Product Markets

5.210 In the paragraphs 5.41 to 5.209 above ComReg has considered the definition of the relevant TI WHQA markets and MI WHQA markets from a product perspective and, in so doing has considered demand-side, supply-side and indirect constraints. ComReg's position is that there are three separate product markets as described below.

5.211 The MI WHQA Product Market is comprised of:

- (a) Wholesale wired Ethernet LLs;
- (b) Wholesale wired EFM services; and
- (c) Wholesale wired xWDM and other high capacity MI WHQA LLs.

5.212 The Low Bandwidth TI WHQA Product Market is comprised of:

- (a) Wholesale analogue LL; and
- (b) Wholesale TDM LL with bandwidth up to and including 2Mb/s.

5.213 The High Bandwidth TI WHQA Product Market is comprised of wholesale TDM LLs with bandwidths above 2Mb/s.

5.214 In the case of all three product markets (together referred to as the '**Relevant WHQA Product Markets**') Eircom's self-supply is included in the Relevant WHQA Markets as well as WHQA products provided over alternative networks (both physical and wireless networks). Self-supply of alternative network owners is also included in the Relevant WHQA Product Markets with the exception of self-supply as network inputs.

5.215 Furthermore, ComReg's position is that the Relevant WHQA Product Markets do not include:

- (a) Wireless P2P Radio Links;
- (b) Wholesale broadband services; and
- (c) Dark fibre services.

5.7 Geographic Scope of the Relevant WHQA Product Markets

5.216 Below, ComReg briefly describes the framework according to which it has carried out its assessment of the geographic scope of the WHQA markets.

5.217 The European Commission's Notice on Market Definition states that the relevant geographic market is:

*"...an area in which the Undertakings concerned are involved in the supply and demand of the relevant products or services, in which area the conditions of competition are similar or sufficiently homogeneous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different."*⁴⁴⁸

5.218 The European Commission's Notice on Market Definition notes further that it:

*"...will take a preliminary view of the scope of the geographic market on the basis of broad indications as to the distribution of market shares between the parties and their competitors, as well as a preliminary analysis of pricing and price differences at national and Community or EEA level. This initial view is used basically as a working hypothesis to focus the Commission's enquiries for the purpose of arriving at a precise geographic market definition".*⁴⁴⁹

5.219 In assessing potential geographic variances in competitive conditions, ComReg has also taken utmost account of the BEREC Common Position on Geographic Aspects of Market Analysis⁴⁵⁰. These are listed below:

- (a) the geographic differences in entry conditions over time;
- (b) the variation in the number and size of potential competitors;
- (c) the distribution of market shares; and
- (d) evidence of differentiated pricing of marketing strategies.

5.220 For the sake of expediency, these will in some instances, be referred to in this section as the Collective Geographic Assessment Criteria ('**CGAC**').

⁴⁴⁸ European Commission Notice on Market Definition, paragraph 8.

⁴⁴⁹ European Commission Notice on Market Definition, paragraph 28.

⁴⁵⁰ BEREC "[Common Position on Geographic Aspects of Market Analysis](#)", BoR (14) 73, 05.06.2014.

Outline of the Geographic Assessment of the MI WHQA Markets

Introduction

- 5.221 This Section describes ComReg's assessment of the geographic scope of the MI WHQA markets and how it has arrived at its conclusion to define four separate MI WHQA markets.
- 5.222 In this Decision, ComReg has now defined these four MI WHQA geographic markets as:
- (a) a sub-national '**Area 1' MI WHQA Market**⁴⁵¹ consisting of all wired Ethernet, EFM, xWDM (and other modern interfaces) LLs of any bandwidth;
 - (b) a sub-national '**Area 2' MI WHQA Market**⁴⁵² consisting of all wired Ethernet, EFM, xWDM (and other modern interfaces) LLs of any bandwidth;
 - (c) a sub-national '**Area 3' MI WHQA Market**⁴⁵³ consisting of all wired Ethernet, EFM, xWDM (and other modern interfaces) LLs of any bandwidth; and
 - (d) a sub-national '**Area 4' MI WHQA Market**⁴⁵⁴ consisting of all wired Ethernet, EFM, xWDM (and other modern interfaces) LLs of any bandwidth.
- 5.223 For the purpose of the competition problem assessment and the application of remedies later in this Decision, ComReg has amalgamated the MI WHQA Markets as follows (they are identical from a product perspective):
- (a) Zone A MI WHQA Markets: consist of the Area 1 MI WHQA Market and Area 3 MI WHQA Market ('**Zone A MI WHQA Markets**'); and
 - (b) Zone B MI WHQA Markets: consist of the Area 2 MI WHQA Market and Area 4 MI WHQA Market ('**Zone B MI WHQA Markets**').

⁴⁵¹ Corresponding to 4,950 MI WHQA connected premises and representing 58.4% of all MI WHQA connected premises. There are 1,582 WPZs in the Area 1 MI WHQA Market.

⁴⁵² Corresponding to 3,523 MI WHQA connected premises and representing 41.6% of all MI WHQA connected premises. There are 1,998 WPZs in the Area 2 MI WHQA Market.

⁴⁵³ There are no connected premises in the Area 3 MI WHQA Market. This market is comprised of the relevant geographic areas that have at least 2 alternative networks (other than Eircom) present or are completely surrounded by Zone A geographic areas. There are 1,153 WPZs in the Area 3 MI WHQA Market.

⁴⁵⁴ There are no connected premises in the Area 4 MI WHQA Market. There are, however, less than 2 alternative networks (other than Eircom) present in the relevant geographic areas that comprise this market. There are 2,486 WPZs in the Area 4 MI WHQA Market.

- 5.224 The structure of the remainder of this section is as follows.
- 5.225 Firstly, in paragraphs 5.235 to 5.237 below, ComReg explains corrections to the data used in the mapping exercise in the 2018 Further Consultation for the then Zone A MI WHQA Market and Zone B MI WHQA Market and corresponding market shares. These corrections were necessary due to some issues that were identified with the input data and the application of the 2018 Tera Algorithm⁴⁵⁵ but which importantly, do not affect the overall analysis and ComReg's preliminary views in the 2018 Further Consultation.
- 5.226 Secondly, in paragraphs 5.238 to 5.243 below, ComReg then summarises its preliminary views in the 2016 Consultation, and summarises the 2016 Responses to this consultation which led ComReg reconsidering its views on its geographic assessment of the MI WHQA Markets in the 2018 Further Consultation. Then, the main themes identified in the Responses to the 2018 Further Consultation are identified and discussed, while referring out to the relevant sections of Annex A which contains detailed descriptions of the Respondents views, ComReg analysis and responses to these issues and finally, its final decision. There are also other related issues on which Respondents were silent but which ComReg considers are important, and these are woven into these discussions below.
- 5.227 Thirdly, in paragraph 5.268 below, ComReg sets out the main themes raised by Respondents in their Submissions to the 2018 Further Consultation. Each subsequently discussed in turn in this Section and importantly, in the relevant Section of Annex 1⁴⁵⁶ which considers all Respondents' Submissions in detail, including ComReg's assessment of these.
- 5.228 Finally, the assessment and its result is detailed in paragraphs 5.326 to 5.338 below.
- 5.229 All 7 Respondents to the 2018 Further Consultation disagreed with ComReg's assessment of the geographic scope of the MI WHQA Markets for various reasons. In particular, many commented that the criteria and input assumptions used in the assessment and applied in the 2018 Tera Algorithm were either incorrect and/or inappropriate or that the 2018 Tera Algorithm itself and ComReg's entire approach was incorrect.

⁴⁵⁵ The 2018 Tera Algorithm is the algorithm used for the analysis in the 2018 Further Consultation.

⁴⁵⁶ See Section A.1.5.

Other Important Considerations in the assessment

- 5.230 A key output for the updated geographic market assessment is that the 2018 Tera Algorithm and some of its key inputs and guiding assumptions have been updated in light of Respondents' Submissions and the additional information provided by other key stakeholders and which is laid out in the following sections. The changes incorporated into the 2019 Tera Algorithm are described in paragraph 5.334 to 5.337 below and also detailed in the 2019 Tera Report, Annex 4 of this Decision.
- 5.231 In order to assist the understanding of the updated analysis and assessment supporting ComReg's positions in relation the geographic market definitions, it is important to refer to the 2018 Tera Report (Appendix 1 of the 2018 Further Consultation), the 2019 Tera Report (Annex 4 of this Decision) and the relevant sections of Annex 1 (The Consideration of Respondents Views) as referred to throughout this Section.
- 5.232 A key point of note is that the updated analysis in this Decision now incorporates data covering 3 time periods, namely for the years 2016 to 2018, and this has allowed ComReg to identify clear trends in its geographic market assessments as demonstrated in Figure 62 and Figure 64 below which respectively, show the Connected Premises market share data for Area 1 and Area 2.
- 5.233 Additionally, ComReg has also calculated market shares at a geographic level based on service shares⁴⁵⁷ for the 2 years 2016 and 2017 (as suggested by BT in its Submission). These broadly exhibited the same market share trends as those calculated using Connected Premises data as shown in Figure 63 and Figure 65 below.
- 5.234 ComReg notes that it has not proven possible to geocode the location information of a sufficient proportion of LL services provided of the years prior to 2016, mainly due to the poor quality of the address data provided by SPs to ComReg (as further explained in Annex 3).

⁴⁵⁷ In general, in this Section, references to 'services' relate to the recorded number of individual MI HQA LL service instances, i.e.; the number of circuits being sold (as opposed to the Connected Premises metric which assesses what premises have been connected with network for the purpose of supplying MI HQA LLs). A Connected Premises may, for example, have multiple instances of LL services, but may only have a single network connection.

Corrections and amendments to previously used data and the published map

- 5.235 Before proceeding with the explanation of its updated analysis of the MI WHQA Markets, ComReg notes that the Zone A and B maps published with the 2018 Further Consultation⁴⁵⁸ and associated list of Zone A and B Small Areas⁴⁵⁹ required amending. The 2018 Tera Algorithm has remained unchanged for the purpose of completing a number of recalculations which were required to reflect corrections to SP data and to address other issues. Furthermore, the information provided in the 2018 Further Consultation was inadvertently based on the use of all the national 300K non-residential premises locations rather than the 15K potential HQA premises. The outcome of this error was that over 900 (approx. 5% of all SAs) SAs were incorrectly assessed as having potential demand. This meant that these SAs were attributed to Zone B rather than Zone A. These changes are reflected in the updated 2018 map published with this Decision in Annex 15 for illustrative and comparative purposes. These issues have been addressed in detail in the 2019 Tera Report, Annex 4 of this Decision.
- 5.236 A significant number of duplicate 2016 Connected Premises information⁴⁶⁰ provided by SPs to ComReg remained undetected until after publication of the 2018 Further Consultation. 2016 was the first year a set of such data was collected by ComReg so it was not possible to compare this data to similar data for another time periods in order to check its veracity or to demonstrate that a trend had been established.
- 5.237 Corresponding adjustments were made to data provided by SPs for the years 2017 and 2018, as well as the corrections to the 2016 data. The updated output results in a corrected 2016 map of Zone A and Zone B and are published as part of this Decision.⁴⁶¹

⁴⁵⁸ <https://siteviewer.comreg.ie/ComReg1808b>.

⁴⁵⁹ Appendix 3 of the 2018 Further Consultation, List of Small Areas, Zones A and B.

⁴⁶⁰ Data supplied by SPs in response to SIR issued by ComReg on 12 April 2017.

⁴⁶¹ See paragraph A6.1 below

Overview of the 2016 Consultation MI WHQA Markets

- 5.238 In the 2016 Consultation, ComReg set out the approach to its assessment of the geographic aspects of the MI WHQA Market defined in the 2016 Consultation, which was considered at that time to be national in scope⁴⁶². As laid out in paragraphs 5.189 to 5.198 in the 2016 Consultation, this market was assessed in the same fashion as that undertaken for the TI WHQA Markets, subject to an assessment informed by the EC's Notice on Market Definition and the BEREC Common Position on Geographic Aspects of Market Analysis.
- 5.239 Thus, the CGAC were again applied in this geographic assessment of the MI WHQA market⁴⁶³. Therein, ComReg considered geographic differences over time and were of the view that there were certain areas such as business parks⁴⁶⁴ and data centres⁴⁶⁵ and campuses of 3rd level educational establishments, collectively referred to as 'Business Parks'⁴⁶⁶ as areas likely to hold high concentration of AN infrastructure due to the high demand in such areas.
- 5.240 However, due to the limitation of SP information e.g. the absence of X, Y coordinates of customer premises as noted by consultants Oxera in the 2016 Oxera Report⁴⁶⁷, it was unfeasible to conduct a AN network reach study for these locations but that it was possible to identify those Business Parks that were intersected or touched by 2 or more ANs. It was not however possible to use Business Parks as a geographic unit as their boundaries were not necessarily clear and stable. It also noted that SPs using wireless infrastructure could supply to areas both inside and outside Business Parks.

⁴⁶² 2016 Consultation, paragraphs 5.184 to 5.186.

⁴⁶³ 2016 Consultation paragraphs 5.207 to 5.235.

⁴⁶⁴ Business parks are sites that contain clusters of typically commercial businesses. They tend to be located in suburban areas and near to main roads. As these tend to group similar types of end-user demand (i.e. corporate or IT specific firms) in one location, the costs for operators connecting to these sites are lower compared to areas where end-user premises are more dispersed.

⁴⁶⁵ Data centres, in the broadest sense, are premises whose main purpose is to house computing and communications equipment in secure locations and which therefore require very high capacity LL as well as dark fibre to carry data to and from their facilities.

⁴⁶⁶ 209 such Business Parks was listed in Appendix 5 of the 2016 Consultation.

⁴⁶⁷ 2016 Oxera Report, Section A5.2

- 5.241 This analysis also considered the variation and size of potential competitors. In order to assess this, the number of physical ends of MI circuits was analysed⁴⁶⁸ for the year 2014 which terminated inside and outside the listed 209 Business Parks. This indicated that Business Parks were areas of concentrated demand and supply. ComReg considered that the information in itself did not indicate that there were sufficient variations in the size and number of competitors across different geographic areas. This analysis of the 2014 circuitry also facilitated the assessment of the distribution of market shares both inside and outside Business Parks. This indicated that Eircom had respectively, less than 25% and 35% market share inside and outside Business Parks⁴⁶⁹.
- 5.242 In its 2016 assessment of any evidence of geographically differentiated pricing or marketing strategies, ComReg noted that any pricing differences observed appeared to be based on whether or not the service was provided using an SPs' own infrastructure (i.e. was on-net), rather than purely geographic considerations.
- 5.243 ComReg's 2016 preliminary conclusion was that the MI WHQA Market was national in scope⁴⁷⁰.

ComReg's Analysis and Preliminary View in the 2018 Further Consultation on the Geographic Scope of the MI WHQA Market

- 5.244 The majority⁴⁷¹ of the Submissions received in response to the 2016 Consultation rejected ComReg's preliminary view regarding the proposed national geographic definition of the MI WHQA Market. Having considered Respondents' views, including views on:
- (a) that wireless LLs should not be in the product market⁴⁷²;
 - (b) the importance of multisite customers in the retail market⁴⁷³; and

⁴⁶⁸ This required manual inspection and "eyeballing" of every record as described in Appendix 11 of the 2016 Consultation and included wired and wireless MI HQA circuits.

⁴⁶⁹ 2016 Consultation paragraph 5.224.

⁴⁷⁰ 2016 Consultation paragraph 5.237.

⁴⁷¹ 9 of 10 Respondents who commented disagreed with ComReg's 2016 preliminary position.

⁴⁷² 7 of 12 Respondents, 2018 Further Consultation paragraph 4.27

⁴⁷³ Further Consultation paragraph 4.44 to 4.49.

(c) that ANs were dependent on Eircom backhaul services to many locations in the country⁴⁷⁴.

5.245 ComReg's reassessment of the geographic scope of the MI WHQA Markets was detailed in section 4.4.4 of the 2018 Further Consultation⁴⁷⁵.

5.246 ComReg explained its approach by first discussing its preferred candidate of Small **Area (SA)**⁴⁷⁶ as the geographic unit to be used in the geographic assessment. ComReg considered other candidate geographic units such as Electoral Districts ('**ED(s)**')⁴⁷⁷, Local Authority Administrative Areas ('**LAAA(s)**')⁴⁷⁸ but considered that these were not appropriate. The notion of using streets or roads was discounted due to difficulties in describing market boundaries. ComReg considered that SAs met the criterion set out in the Explanatory Note to the 2014 Recommendation and the Commission's Notice on Market Definition and BERECS common position.

5.247 ComReg then proceeded to explain the criteria to be used to assess the conditions of competition, namely:

(a) **Criterion 1:** A SA has two or more ANs present (3 networks including Eircom)⁴⁷⁹; and

(b) **Criterion 2:** 75% of current or potential demand must be within 100 metres of two or more ANs⁴⁸⁰.

5.248 Criterion 2 was further split into 2 sub criteria:

(a) the Distance criterion being the 100 meters; and

(b) the Proportionality criterion being the 75% figure above.

⁴⁷⁴ 2018 Further Consultation paragraphs 4.54 to 4.57

⁴⁷⁵ 2018 Further Consultation paragraphs 4.127 to 4.138.

⁴⁷⁶ Small Areas have been developed by Ordinance Survey Ireland ('**OSI**') for the Central Statistics Office ('**CSO**'). See <http://www.cso.ie/en/census/census2016reports/census2016smallareapopulationstatistics/> for more details

⁴⁷⁷ The smallest electoral unit which is based on residential population density and conjoining of SAs, see www.CSO.ie www.CSO.ie

⁴⁷⁸ Areas of each local authority in Ireland of which there are 31. See www.CSO.ie

⁴⁷⁹ See paragraphs 4.152 to 4.157 of the 2018 Further Consultation

⁴⁸⁰ 2018 Further Consultation paragraph 4.158.

- 5.249 The distance criterion was chosen on the basis of the wayleave notification period required for carrying out civil engineering excavations on the public roadway by local authorities, ComReg having interviewed a sample of such authorities⁴⁸¹. The proportionality criterion was chosen on the basis of reasonableness factors, ComReg having considered different values on what is a continuum of possible proportionality ranges⁴⁸².
- 5.250 ComReg overall preliminary conclusion on the choice of geographic unit and the geographic assessment criteria was that SAs were the appropriate geographic unit to use in its assessment and that the presence or 2 or more ANs present in an SA, in addition to 75% of all relevant premises being within 100 meters of two or more ANs was the suitable basis for completion of the geographic assessment.
- 5.251 ComReg then explained the mapping process, with ComReg noting that Tera consultants were employed to assist it with its analysis⁴⁸³. This described:
- (a) how the relevant 13 SP networks⁴⁸⁴ were mapped;
 - (b) how a network width or “thickness” of 20 metres was ascribed to each;
 - (c) how core network as opposed to local access network was removed from the proximity or distance analysis; and
 - (d) how the publicly owned MANs were treated differently to other networks.
- 5.252 ComReg assumed that due to the size and scope of Eircom’s network, that its network was effectively ubiquitous and present in all SAs⁴⁸⁵.
- 5.253 This above approach was then used by ComReg to assess supply conditions.

⁴⁸¹ Further Consultation paragraphs 4.159 to 4.160.

⁴⁸² Further Consultation paragraphs 4.161 to 4.164.

⁴⁸³ Further Consultation paragraphs 4.169 to 4.188.

⁴⁸⁴ Aurora; BT; Colt; ent; ESBT; EU Networks; GTT; Magnet; SIRO; Verizon; Viatel; Virgin Media; and Vodafone.

⁴⁸⁵ Further Consultation paragraph 4.171.

- 5.254 It also described the approach taken for the measurement and mapping of WHQA demand, referred to as 'relevant premises'⁴⁸⁶. ComReg explained how it adopted metrics to measure and map current and future WHQA demand. Current demand was measured by the mapping of all SPs' Connected Premises, being the then (at the end of 2016) geocoded locations of premises connected to relevant SPs' networks for the purpose of supplying MI WHQA services.
- 5.255 ComReg considered future demand by mapping the locations of those non-residential organisations ('**Organisations**') which ComReg considered to be proxies for potential future MI HQA demand. These Organisations was derived by ComReg by clashing the names of multi-site retail customers (identified from the Q2 2016 data provided by SPs to ComReg) against the circa 300K non-residential organisation premises locations within the Eircode database. ComReg considered that the location of such business which, already had MI WHQA services, were more likely to require and extend such services at their other business sites which did not already have MI WHQA services. This analysis yielded an Organisations database containing 15,488 geocoded premises points.
- 5.256 ComReg then proceeded to explain its assessment of the geographic scope of the MI WHQA Product Market, with this considered under the following criteria:
- (a) Geographic differences in entry conditions over time;
 - (b) Variation in the number and size of potential competitors;
 - (c) Distribution of market shares;
 - (d) Evidence of differentiated pricing or marketing strategies; and
 - (e) Geographical differences in demand characteristics.
- 5.257 It further explained how the mapping exercise, completed by Tera Consultants, assisted it with its analysis of any geographic differences in entry conditions, demand characteristics and variation in the number and size of potential competitors. It was also noted that there was no clear evidence of differentiated pricing or marketing strategies.
- 5.258 This allowed ComReg to identify SAs which satisfied the following criteria⁴⁸⁷:
- (a) **Criterion 1:** was touched by 2 or more ANs;

⁴⁸⁶ 2018 Further Consultation, paragraphs 4.179 onwards.

⁴⁸⁷ 2018 Further Consultation, paragraph 4.192.

- (b) **Criterion 2a:** 75% of Connected Premises within SAs were within 100 metres of 2 or more ANs;
- (c) **Criterion 2b:** 75% of Organisations within SAs were within 100 metres of 2 or more ANs.

- 5.259 ComReg considered that those SAs which met Criterion 1 were candidate areas in which there may be sufficient network supply that would likely meet demand for HQA services. These areas were then subject to further investigation based on an assessment of demand criteria 2a and 2b.
- 5.260 The output of ComReg's assessment⁴⁸⁸ was that the MI WHQA Markets should be split into two geographic "zones", namely Zone A and Zone B, based on the assessment of the collective criterion above (1, 2a and 2b) as computed by the 2018 Tera Algorithm.
- 5.261 ComReg considered that the SAs constituting Zone A were likely to be areas of more intensive infrastructure competition given that such network infrastructure was sufficiently close to the relevant premises. The Zone A areas were considered to exhibit sufficient homogeneity in the conditions of competition such that they constituted a sub-national market.
- 5.262 Those SAs that did not meet the criteria, collectively named Zone B, were considered to exhibit different competitive conditions to Zone A (but themselves were sufficiently similar to constitute the Zone B area).
- 5.263 To summarise, ComReg's preliminary view that each zone corresponded to a specific geographic area distinguishable according to a grouping of SAs, where ComReg considered that the conditions of competition in Zone A were similar or sufficiently homogeneous and which could be distinguished from the Zone B area in which the prevailing conditions of competition are appreciably different. Such differences in the conditions of competition between Zone A and Zone B arose as a result of the presence of competing infrastructure and consequently, the number of competing service providers present and the associated competitive dynamics.

⁴⁸⁸ Further Consultation paragraphs 4.209 to 4.211.

Summary and Assessment of Respondents' Views on the Geographic Assessment of the MI WHQA Markets, and the Consideration of Other Evidence

- 5.264 As noted above, all 7 Respondents to the 2018 Further Consultation disagreed with ComReg's assessment of the geographic scope of the MI WHQA Markets for various reasons. In particular, many commented that the criteria and input assumptions used in the assessment and applied in the 2018 Tera Algorithm were either incorrect and/or inappropriate or that the 2018 Tera Algorithm itself and ComReg's entire approach was incorrect.
- 5.265 For instance, Zayo considered that the same geographic analysis should have been undertaken for 2 MI WHQA product markets, based on a bandwidth split above and below 1 Gb/s⁴⁸⁹, whereas Eircom considered that the entire assessment was flawed⁴⁹⁰. As stated above, all of the issues raised in the Respondents' submissions and ComReg's detailed considerations and corresponding discussions and responses' are arranged in a thematic context contained in Section A.1.5 of Annex 1 of this Decision.
- 5.266 Other issues included dig distances, boundary issues, wayleave issues, the cost of digging etc. Each of these issues is considered in detail and arranged thematically in the Annexes to make the document more accessible for the reader.
- 5.267 ComReg has carefully considered all the Submissions to the 2018 Further Consultation and undertaken a further analysis of the geographical aspects of the WHQA markets in line with EU guidance⁴⁹¹. This has involved a further detailed assessment of demand and supply side data collected for the years 2017 and 2018, in addition to the assessment of data already assembled for previous years. ComReg notes that such data has required cleansing, with revisions to previous data also made as described in Annex 3 of this Decision. ComReg also gathered information from other important sources such as Dublin City Council ('**DCC**'), the Roads Maintenance Office ('**RMO**'), the CSO, Department of Housing, Transport Infrastructure Ireland, BEREC, other NRAs, the EU Commission and some major consumers of telecommunications services in Ireland. This was in addition to meeting with various SPs.

⁴⁸⁹ Zayo Submission paragraph 4.1.2.

⁴⁹⁰ Eircom Submission, paragraph 50.

⁴⁹¹ EC Document No. C(2018) 2374 final, published 27 April 2018 and EC Document No. SWD(2018) 124 final, published 27 April 2018.

- 5.268 The main themes raised by Respondents in relation to ComReg's geographic analysis of the MI WHQA Markets in the 2018 Further Consultation are as follows:
- (a) The uses of Current and Forecast Demand databases (see paragraphs 5.269 to 5.277 below and in Annex 1, Section A.1.5.2);
 - (b) Mapping of SPs networks, (see paragraphs 5.277 to 5.292 below and Annex 1, Section A.1.5.3);
 - (c) The choice of Geographic Unit, (see paragraphs 5.293 to 5.297 below and Annex 1, Section A.1.5.4);
 - (d) The Distance Criterion, (see paragraphs 5.298 to 5.307 below and Annex 1, Section A.1.5.5);
 - (e) Access to Eircom's CEI products, (see paragraphs 5.308 to 5.311 below and Annex 1, Section A.1.5.6);
 - (f) The Proportionality Criterion, (see paragraphs 5.312 to 5.314 below and Annex 1, Section A.1.5.7); and
 - (g) Boundary (and contiguity) issues, (see paragraphs 5.315 to 5.325 below and Annex 1, Section A.1.5.8).

Use of Organisations (forecast) and Connected Premises databases

- 5.269 The Organisations database was created and used by ComReg in its analysis supporting the 2018 Further Consultation. It was a forecast of locations which where MI WHQA services were estimated to be required by businesses in the following years and was obtained by clashing the names of existing multisite retail customers (using 2016 H1 data) against available national business location data.⁴⁹²
- 5.270 Respondents' views on the use of the Organisations and Connected Premises databases in the analysis of the geographic market definition, their application in the 2018 Tera Algorithm and ComReg's consideration and response to the issues raised by Respondents are laid out in detail in Section A.1.5.2 of Annex 1. A summary is provided below.
- 5.271 Both BT and Vodafone considered that the use of the Organisations forecast database for projecting potential HQA demand was flawed and did not credibly represent any such future possible usage. No other Respondents commented on the use of these data inputs.

⁴⁹² Geodirectory business intelligence data

- 5.272 BT stated that using connected premises as the metric to calculate market shares was unusual and that ComReg should additionally, consider using service level share data for this purpose.

ComReg's Position on the use of the Organisation and Connected Premises databases

- 5.273 ComReg has decided not to use the forecast Organisations database and to remove the corresponding calculation from the Tera algorithm. This decision was taken due to the results of testing of the 2016 forecast Organisations database which showed a low conversion rate of forecasted demand to actual demand - with a low proportion of what was considered to be estimated demand subsequently appearing in the 2018 actual connected premises data. This indicated that the 2016 forecast data was not sufficiently robust as a proxy for future demand. ComReg and its consultants Tera also attempted to use business location⁴⁹³ and NACE⁴⁹⁴ code data to create forecast database but these were also found to be unsuitable⁴⁹⁵.
- 5.274 It should be noted that the order of the Connected Premises and Organisation Tests applied to the 2018 Tera Algorithm was that the Connected Premises test was applied to each qualifying SA before the Organisations test. This can be clearly observed in the flowchart of the 2018 Tera Algorithm⁴⁹⁶. The 2018 Tera Algorithm also had a cut-off of 4⁴⁹⁷ premises for the Connected Premises test, a limit below which this test was bypassed and the Organisations test applied.
- 5.275 As a consequence of the decision to remove any Organisations test from the 2019 Tera Algorithm, this limit or minimum cut-off of 4 connected premises applied to each geographic unit for the subsequent "distance proportionality test" was rendered illogical. It therefore has also been removed from the 2019 Tera Algorithm as ComReg considers it sensible to assess *all* current demand in the first test⁴⁹⁸ and this is illustrated in the flowchart of the 2019 Tera Algorithm in Figure 66. A visual comparison of the flowcharts of the 2018 and 2019 Tera Algorithms makes this obvious to the reader (See Figure 66 and Figure 67 below).

⁴⁹³ Obtained from Geodirectory.

⁴⁹⁴ NACE code: industry classification data.

⁴⁹⁵ Section 4 of the 2019 Tera Report.

⁴⁹⁶ Refer to the Flowchart of the 2018 Tera Algorithm in Figure 67.

⁴⁹⁷ *Ibid.*

⁴⁹⁸ See Section 3.2 of the 2019 Tera Report, Annex 4 of this Decision.

- 5.276 However, ComReg considered that BT's request to calculate market shares based on service share data was worthwhile. ComReg therefore completed this exercise for the years 2016 and 2017 (where the data was of sufficient quality to allow this) as a complementary analysis to that undertaken for the calculation of market shares based on Connected Premises data. The trend analysis of these results have corroborated the main analysis for the final MI WHQA Markets B as set out in Figure 62, Figure 63, Figure 64 and Figure 65 below.
- 5.277 ComReg's conclusion is that current demand as calculated using existing Connected Premises data is the best available predictor of future demand and is best suited for calculating market shares in the MI WHQA Markets.

ComReg's approach to the Mapping of Networks

- 5.278 ComReg has also explained in Annex 1, Section A.1.5.2 why it has maintained the use of the Connected Premises metric to calculate geographic based market shares, rather than using service level⁴⁹⁹ shares. This was largely due to the manner in which SPs recorded logical and physical Ethernet circuitry and is also explained in detail in Annex 3 of this decision dealing with data treatment issues.
- 5.279 Below ComReg briefly describes Respondents' views on the approach taken to mapping networks. These Respondents' views, and ComReg's consideration of them are set out in detail in Annex 1, Section A.1.5.3.
- 5.280 In its Submission, Eircom stated that ComReg was mistaken not to have mapped its network and to have assumed that its MI WHQA network was ubiquitous for the purposes of its analysis.
- 5.281 BT, Vodafone and ZAYO said that the allocation of a 20 metre thickness or corridor to networks was a source of possible errors to distance measurements in the 2018 Further Consultation analysis.
- 5.282 ALTO, BT and Vodafone stated that ComReg had erred in its analysis concerning the weighting of enet's CMANs where it treated them as being equivalent to 2 privately owned networks. These Respondents indicated that this distorted the then proposed Zone A and B MI WHQA Markets, making Zone A larger than it should be.
- 5.283 BT suggested that smaller SPs and others that it claimed were engaged purely in providing international connectivity should be excluded from the analysis. It also argued that achieving interconnectivity between ANs was a barrier to market entry/expansion, while Vodafone claimed that managing multiple MI WHQA suppliers was a challenge for AN SPs.

⁴⁹⁹ Shares based on MI HQA LL information, referred to a service shares.

ComReg's Position on the approach to Mapping of Networks

- 5.284 ComReg considers that many of its previous assumptions used in its assessment of the geographic scope of the MI WHQA Markets remain valid and are maintained for the further analysis. It is reasonable to assume that Eircom's network is ubiquitous due to its national scope and scale and ComReg noted that its fibre footprint has actually expanded deeper into the access portion of its network since previous analysis was undertaken. In practice, there are very few locations to which Eircom cannot provide a MI WHQA leased line when requested. Similarly, the allocation of a 20 metre width or thickness to ANs is still applicable and is, in ComReg's view, a reasonable approach given the limitations of the availability and accuracy of SPs' mapping data and when taking account of the size of the chosen geographic unit. The impact of the 20 metre width on distance measurements (for calculating distances between Connected Premises and ANs) is considered in Annex 1, Section A.1.5.5 and below in paragraph 5.305.
- 5.285 ComReg does not accept the claims by BT and Vodafone that dealing with multiple providers and achieving the interconnectivity required to do so are barriers to entering the merchant market. Similarly, ComReg considers that the omission of international SPs from the analysis would be incorrect. ComReg's argumentation is laid out in detail in Annex 1⁵⁰⁰ of this Decision.

Publicly owned MANs

- 5.286 An issue raised by many Respondents was ComReg's treatment of the publicly owned "enet" MANs. These Respondents' views, and ComReg's consideration of them are set out in detail in Annex 1, Section A.1.5.3.
- 5.287 ComReg notes its position in the 2018 Further Consultation in relation to the treatment of the publicly owned MANs, in particular that "CMANs" or "Competitive" MANs were taken as being equivalent to two ANs. This proposal reflected the open access and pricing obligations placed on enet by virtue of State Aid Guidelines.
- 5.288 Given enet's MANs are effectively under common ownership – with group companies active at both the retail as well as the wholesale level in the provision of MI WHQA services – ComReg has decided to treat the assets under the control of enet – both public and private – in the similar fashion to the assets under the control of other vertically integrated SPs, i.e. we treat enet's MAN assets as one network.

⁵⁰⁰ See paragraphs A1.188 to A1.198 below.

Demarcation of core and local access network

- 5.289 In the 2018 Further Consultation a clear distinction was made between core and access networks where core networks were excluded from the analysis within the 2018 Tera Algorithm⁵⁰¹. These are portions of fibre networks where breakout to connect directly to customers is not possible; such examples include fibre routed on high-tension electricity pylons, on the mainline national railway network or co-located with high-pressure cross country gas pipelines. Such network was however, considered when investigating possible dependency issues of some local access networks on Eircom for backhaul⁵⁰². It was found for example, that some publicly owned MANs were dependent on Eircom for backhaul services and were defined as “UMANs” for the purposes of the MGA analysis. This followed the approach taken in the 2018 Further Consultation, where the UMAN connected premises count is allocated to Eircom in the calculation of market shares as these connections could not be achieved in the absence of a regulated wholesale backhaul input.
- 5.290 No comments were received in relation to this matter.
- 5.291 Some changes were made by ComReg with regard to the separation of core and access networks. These included the reallocation of some minor elements of network from access to core which involved some urban routes on overhead electricity pylons and point-to-point rented 3rd party dark fibre pairs which were only used for backhaul services⁵⁰³. There were however, some long tracks of fibre routed on national route “N” roads and motorways which were re-categorised as core network. This was because the wayleaves permission processes for these roadways fall under the auspices of Transport Infrastructure Ireland (‘TII’) and are subject to a wayleave lead-time of 4 months⁵⁰⁴. This condition effectively quarantines these routes from being used to provide MI HQA services within the normal expected lead-time for the provision of retail services. ComReg notes that the areas through which these routes run contain negligible demand and therefore although the geographic units in question are geographically large, they do not impact on the overall analysis to any appreciable extent.

⁵⁰¹ 2018 Further Consultation paragraph 4.173.

⁵⁰² 2018 Further Consultation paragraph 4.174.

⁵⁰³ As described in paragraph 5.304 of this Decision.

⁵⁰⁴ Section 3.3 of TII roadworks consent document:

Other Issues on which there were no comments received

5.292 ComReg noted in the 2018 Further Consultation that it has completed the original mapping exercise using polygons to represent the network of Virgin Media in areas where its network was dense⁵⁰⁵. In the refreshed analysis in this Decision, detailed routing information of Virgin Media's network was used in an identical manner to that of other ANs and so should improve the accuracy of distance measurements within the algorithm and thereby, provide correspondingly more precise results.

Choice of Geographic Unit

Change of Geographic Unit choice

- 5.293 The detailed discussion on this issue is laid out in Annex 1⁵⁰⁶, five Respondents⁵⁰⁷ criticised the choice of SA as the geographic unit, largely on the basis that they were too small, too numerous and were based on residential population rather than business concentrations. BT accepted that the SA could be used as the basic geographic unit but contended that ComReg's subsequent analysis was flawed. It suggested an alternate highly complex approach for which ComReg does not have the necessary data to undertake. This approach would also entail fragmenting the market into multiple geographic markets, down to individual premises. Such an approach would – in ComReg's opinion – result in defining areas that were too small to be practicable and inconsistent with the European Commission and BEREC's guidance on geographic markets.
- 5.294 Verizon suggested that the Dublin market be separated into a "Dublin ring" but did not offer objective reasoning by which to describe this area specifically while Vodafone suggested using Eircom exchange areas on the basis of the interconnection regime it had established with the incumbent.

<https://www.tii.ie/roads-tolling/operations-and-maintenance/roadworks-consent/TII-Scheme.pdf>

⁵⁰⁵ 2018 Further Consultation paragraph 4.175.

⁵⁰⁶ See Section A.1.5.4.

⁵⁰⁷ BT, Eircom, enet, Verizon and Vodafone.

- 5.295 ComReg has assessed Respondents' views on this issue in Annex 1, Section A.1.5.4. In ComReg's view, no suitable alternative was offered by any Respondents which in ComReg's estimation meets the requirements suggested in the Explanatory Note to the 2014 Recommendation, as laid out in 2018 Further Consultation⁵⁰⁸ that the geographic unit should be of appropriate size, be reflective of relevant SPs networks, and provide clear and stable boundaries over time.
- 5.296 ComReg, having carefully considered the responses and importantly, new information made publicly available by the CSO since the publication of the 2018 Further Consultation has decided to modify its position. In this Decision, ComReg has opted for the choice of Workplace Zone ('WPZ')⁵⁰⁹ as the geographic unit to be used in the further analysis. ComReg's opinion is that this is a superior fit for the analysis of business oriented markets such as HQA and addresses a reasonable point which has been raised – WPZs are far fewer in number than SAs but as with SAs, WPZs are SP agnostic (unlike the Vodafone proposal), being produced by an independent public body and are publicly available for all stakeholders for inspection.
- 5.297 ComReg considers that this is a reasonable and proportionate modification as WPZs were not available at the time of the initial analysis; secondly, they were developed by the CSO in response to requirements by many of its stakeholders for a more suitable unit for analysis of business markets; thirdly, they are based on SA units so are not fundamentally different to the original proposition; and lastly, it addresses points raised by Respondents as summarised in paragraph 5.293 and 5.294 above.

⁵⁰⁸ Paragraph 4.142.

⁵⁰⁹ WPZs are an administrative unit created by Ireland's Central Statistics Office ('CSO') and are designed to capture 'daytime population' of areas. The daytime population includes everybody who indicated they worked or studied in the area, along with persons in that area who do not work or study (and so are there during the day). There are 7,219 WPZs in Ireland. Further details on the CSO construct of WPZs are available [HERE](#).

Geographic Assessment - Distance Criterion

- 5.298 In the 2018 Further Consultation, ComReg proposed that 100 metres⁵¹⁰ was to be adopted as the distance criterion to be inputted to the 2018 Tera Algorithm which was utilised in the context of the definition of the geographic boundary of the relevant MI WHQA Markets. The distance criterion chosen by ComReg for its mapping analysis was based on the wayleave notification period that are required by local authorities to undertake civil engineering work associated with extending telecommunications networks. Distances over 100 linear metres automatically require a 3 month notice period which ComReg considered excluded SPs from being able to bid for many retail contracts. This distance of 100 metres was therefore adopted as the radial distance criterion used in the 2018 Tera Algorithm.
- 5.299 Respondents' views on this issue and ComReg's assessment of them is discussed in detail in Annex 1, Section A.1.5.5. The majority of Respondents⁵¹¹ who commented indicated that the 100 metres distance criterion was too long. Eircom disagreed and claimed that it was too short and asked if ComReg had considered a 200 metre distance in combination with a 70% level set as the proportionality criterion (this criterion is considered separately in paragraphs 5.312 to 5.314 below).
- 5.300 Many Respondents⁵¹² also claimed that the civil engineering costs associated with excavation for laying duct was prohibitive and some suggested that the "economic dig distance" was far shorter than 100 metres, with BT suggesting it was as short as [redacted]⁵¹³ metres.
- 5.301 Vodafone, BT and ZAYO had claimed that 20 metres network thickness as discussed in paragraph 5.284 above introduced an additional margin of error in the application of the 100 metre distance criterion.
- 5.302 BT submitted a list of digs it had completed which it contended demonstrated that the actual dig distance to connect a premises which was 100 metres from its network could be considerably longer. It stated such distances could be over 180 metres when obstacles had to be circumnavigated and the 20 metres thickness was taken into account.

⁵¹⁰ See paragraphs 4.159 and 4.160 of the 2018 Further Consultation.

⁵¹¹ ALTO, BT, enet.

⁵¹² BT, enet, ALTO

⁵¹³ BT Submission Part 3, page 3.

- 5.303 Eircom raised the issue acknowledged by ComReg in its Clarification Document that the fact that a premises X and Y coordinates could be defined as either the entrance or the centroid of the premises as being a source of uncertainty in distance measurement calculations.
- 5.304 ComReg has conducted further analysis regarding public wayleaves as described in detail in Annex 1, Section A.1.5.5⁵¹⁴. It has met with both bodies⁵¹⁵ which now process all public wayleave applications for local authority roadways for all utilities operating in the State. The public wayleave process has now been standardised nationally (other than for national roads and motorways) and these processes have been operating as such for a number of years.
- 5.305 ComReg decided that the 100 metres dig distance was still applicable as the benchmark for the overall dig distance but importantly, it has accepted the Respondents' arguments regarding the differences between the radial "crow flies" distance and the actual "dog walks" dig distance measurements from a premises to a network as not being trivial. On this basis ComReg has amended the *radial* distance criterion used in the 2019 Tera Algorithm to 50 metres to reflect the fact that network dig distances will not typically follow the "as the crow flies" route. This also takes into account the previous observations made by various Respondents regarding the margin of error of 20 metre network width⁵¹⁶ in the mapping of networks and that comment raised by Eircom that measurement between a Connected Premises to ANs could be from the entrance to or centre of a premises⁵¹⁷. These collectively further exacerbate the possibility of the introduction of a margin of error into distance measurements used within the algorithm if 100 metres was still applied as the radial distance.

⁵¹⁴ See paragraphs A1.250 to A1.273 in Annex 1.

⁵¹⁵ Such as the Road Management Organisation ('RMO') and Dublin City Council ('DCC').

⁵¹⁶ See paragraphs A1.241 and A1.242 of Annex 1.

⁵¹⁷ *Ibid.*

- 5.306 Finally, BT⁵¹⁸ and enet⁵¹⁹ made cogent points regarding civil engineering costs. ComReg noted that civil engineering costs are a likely to be a high proportion of the total costs associated with delivering all telecommunications services and that Ireland is ranked as a high cost economy for products and services. For instance, the industry accepted benchmark is that civil engineering costs accounts for approximately 80%⁵²⁰ of overall costs for a network rollout and Ireland is not unusual in this regard. However, ComReg does not accept that this is a reason in itself to regulate the MI WHQA Markets and the economic dig distance also related to the size of the particular contract involved i.e. there is no absolute cut-off distance below 100 metres dig distance which automatically pushes a AN SP to decide to buy network access rather than build its own network for LL purposes. This was highlighted by an example provided by BT Ireland where it cited a short extension to its network in Dublin city centre as being very expensive. It continued to explain that it had completed this build as it was for a high value customer.
- 5.307 ComReg's position is that by adopting the WPZ as the geographic unit in conjunction with reducing the radial distance criterion to 50 metres, it has reached a reasonable balance to its approach to the assessment of the geographic scope of the MI WHQA Markets.

Eircom's passive infrastructure offers (duct, pole and LLU)

- 5.308 ComReg stated in the 2018 Further Consultation that Eircom's duct and pole reference offers could present AN SPs with an opportunity to gain substantial savings by avoiding civil engineering costs⁵²¹. These issues are dealt with in detail in Annex 1 Section A.1.5.6.
- 5.309 Eircom stated that ComReg had erred in not completing a thorough and detailed analysis of the efficacy of its upstream duct and pole offers. These, it maintained, could render redundant any logic supporting the imposition of any remedies in the downstream leased line markets.
- 5.310 BT, ALTO and Vodafone's' interpretation was that ComReg had stated that these duct and pole offers were a viable alternative to regulated wholesale LLs. They maintained that this view was incorrect as the offers were not fit for purpose.

⁵¹⁸ BT Submission Part 1 Annex, pages 29 to 33.

⁵¹⁹ enet Submission pages 9 to 12.

⁵²⁰ [http://europa.eu/rapid/press-release MEMO-13-287 en.htm](http://europa.eu/rapid/press-release_MEMO-13-287_en.htm)

⁵²¹ See, for example, paragraph 5.166 to 5.168 of the 2018 Further Consultation.

5.311 In its assessment of these views in Annex 1 Section A.1.5.6, ComReg recalls that within the 2018 Further Consultation it had noted that a detailed analysis was not required on the efficacy of Eircom CEI offers. This was because it had examined the volume of duct and pole access which had been provided under both these regulated access offers and, in ComReg's opinion, volumes were negligible such that they would not (nor within the lifetime of this market review were they likely to) have a material impact on the downstream LL markets. ComReg has observed that this situation has not changed materially in the intervening period nor indeed has any equivalent access been provided in any material sense under the ('BCRD')⁵²². ComReg also notes in the Annex 1 Section A.1.5.6 that LLU has had very little material impact on the downstream LL markets, although ComReg recognises that some SPs do use Eircom's LLU products to deliver EFM.

⁵²² The EU Broadband Cost Reduction Directive.

Geographic Assessment - Proportionality criterion

- 5.312 In Annex 1 Section A.1.5.7, ComReg sets out Respondents' views on the proportionality criterion along with its assessment of these views. In the 2018 Further Consultation, the "proportionality" criterion which was used in the Tera Algorithm in conjunction with the distance criterion discussed above, to gauge if 75% of more Connected Premises were within 100 radial metres of 2 ANs. ComReg explained in the 2018 Further Consultation that it has considered applying levels of 50% and 90% but had discounted these on the basis that both represented extremes on a continuum of possible levels.
- 5.313 In their respective Submissions, Zayo suggested using 90% and Eircom asked if 70% had been considered. Further to this, comments in the EC Response noted that the threshold of 75% "*could be considered rather conservative*".⁵²³
- 5.314 Having considered the responses as detailed in Annex 1, Section A.1.5.7, and the EC Response in Annex 13, Section A.13.3, ComReg has decided to maintain its position and that 75% is an appropriate criterion. ComReg considers that there has been no material evidence or argumentation offered by any of the Respondents to suggest that this parameter should be altered.

Geographic Assessment - Boundary issues

- 5.315 In Annex 1 Section A.1.5.8 lists also various issues raised by Respondents relating to ComReg's analysis, the operation of the 2018 Tera Algorithm and the then resulting demarcation of Zones A and B based on SA boundaries.

⁵²³ Page 6, European Commission Case IE/2019/2214

- 5.316 Eircom claimed that ComReg had incorrectly eliminated some SAs which contained Connected Premises from a full analysis at the first stage test in the 2018 Tera Algorithm. Here, the algorithm had tested SAs for the presence of 2 or more ANs. Subsequent stages of the test then investigated the SAs which passed this test and contained Connected Premises at the 75% proportionality level. i.e. to calculate what proportion of the Connected Premises were within 100 metres of 2 ANs. Eircom observed that in theory this test excluded SAs which did contain some Connected Premises but which did not contain 2 or more ANs. Such premises could however, be connected by any number of ANs which were routed close by in neighbouring SAs. Eircom maintained that the order of the tests in the 2018 Tera Algorithm interrogated the supply side data first and then the demand side but stated that this should be reversed. It maintained that SAs should be interrogated for demand first (i.e. presence of Connected Premises) and then supply (i.e. only then be subjected to subsequent tests for proximity to ANs).
- 5.317 Eircom and BT raised a number of points regarding Zone A and Zone B, and by inference, SA issues relating to the contiguity of borders. They both noted that SA boundaries allocated to the different Zone A and Zone B areas had split various business parks across these areas. Both cited various examples of where this occurred in the map published as part of the 2018 Further Consultation.
- 5.318 Verizon made a similar observation but in regard to streets, where some streets were divided by SA boundaries and thereby split between Zones A and Zone B areas. This it claimed, would cause significant issues for SPs in the operation of the market. Eircom offered examples of various customer premises including many hospitals throughout the country which in its opinion were incorrectly incorporated into Zone B and said that this issue pointed towards flaws in the operation of the algorithm and ComReg's analysis.
- 5.319 Lastly, Vodafone pointed to a contiguity issue where individual customer premises were split by SA boundaries and thus across the Zone A and B geographic demarcation in some instances. It queried how regulation would be applied in such situations.
- 5.320 ComReg has accepted Eircom's observations with respect to the order in which the tests are conducted within the Tera Algorithm vis-a-vis demand and supply side considerations. Hence, the order of the tests contained in the 2019 Tera Algorithm has changed so that the initial examination is to see whether or not each WPZ now contained a Connected Premises, followed by the test regarding the distance and proportionality criteria.

- 5.321 ComReg notes that boundary issues may arise even where a geographic unit is designed for one specific purpose. It offered the example of Electoral Districts whereby local election districts can be split for general election constituencies. A boundary must be set to operate in a reasonable manner for the majority of circumstances envisaged but cannot provide an ideal solution for every single eventuality.
- 5.322 ComReg has investigated these contiguity issues, some of which were exaggerated in the now updated 2019 Tera Algorithm by virtue of the small size of some WPZs, in conjunction with the reduction in the radial distance test criteria to 50 metres. This has caused some results which on close inspection, have been found to be anomalous. ComReg has addressed these issues by adapting the 2019 Tera Algorithm to incorporate additional tests.
- 5.323 These additional tests are for firstly, Business Parks where the conditions of supply are different to local authority areas and secondly, for “WPZ islands” (there was 287 such Business Parks considered which are listed in Section 5.4 of the 2019 Tera Report). These islands are occurrences where small WPZs identified initially as areas of low concentrations of AN infrastructure but which are surrounded entirely by WPZs of the opposite designation. These tests were designed to address contiguity issues in areas of high business/employee density and both are discussed in detail in Section A.1.5.8 of Annex 1.
- 5.324 ComReg notes that a similar approach was taken by Ofcom in the ‘**Ofcom June 2019 BCMR Statement**’⁵²⁴. Therein, Ofcom reversed the categorised some “low density” postal code sectors contained in the previously defined Central London Area which were surrounded by “high density” units.
- 5.325 ComReg has investigated the issue raised by Vodafone in regard to the rare instances where individual business premises straddle the boundaries of different areas (say across two or more of the Area 1 MI WHQA Market and Area 4 MI WHQA Markets). ComReg considers that any regulation which may be imposed following the SMP analysis, should also apply to any premises a portion of which falls within the Zone B MI WHQA Markets. ComReg notes that these anomalies can occur due to cartographic errors or ‘rounding up issues’ but this matter cannot be definitively addressed by ComReg from a mapping perspective as the key feature of the geographic unit is that they are produced independently.

⁵²⁴ Promoting competition and investment in fibre networks: review of the physical infrastructure and business connectivity markets Volume 2: market analysis, SMP findings, and remedies for the Business Connectivity Market Review (BCMR), published 28 June 2019: https://www.ofcom.org.uk/data/assets/pdf_file/0025/154591/volume-2-bcmr-final-statement.pdf

Mapping of Networks – Representing Supply considerations

- 5.326 As completed in the analysis for the 2018 Further Consultation, ComReg again engaged Tera Consultants which provided the analytical support and undertook the mapping exercise and special analysis in support of ComReg’s assessment of the geographic scope of the MI WHQA Market. A non-confidential version of the 2019 Tera Report is set out in Annex 4.
- 5.327 ComReg has overlaid the fixed wired networks of ANs providing MI WHQA services onto the WPZ map of Ireland. In this respect, ComReg has mapped⁵²⁵ the networks of the following SPs:
- (a) Aurora;
 - (b) BT;
 - (c) Colt;
 - (d) enet;
 - (e) ESBT;
 - (f) EU Networks;
 - (g) GTT;
 - (h) Magnet;
 - (i) Siro;
 - (j) Verizon;
 - (k) Viatel;
 - (l) Virgin Media;
 - (m) Vodafone; and
 - (n) Zayo.

Mapping of Connected Premises – Representing Demand Considerations

- 5.328 Tera also plotted the geocoded points of all the relevant SPs MI WHQA Connected Premises locations onto the same WPZ map of Ireland.

⁵²⁵ See Section 3 of the 2019 Tera Report for more details on the precise mapping methodology.

- 5.329 The mapping of the SP networks and Connected Premises respectively represented the supply and demand side characteristics of the MI WHQA markets. The mapping exercise referred to above completed by Tera in this updated analysis included Connected Premises data points for 3 years and using the 2019 Tera Algorithm and yielded results for criteria (a), (b), (c) and (e) set out in paragraph 5.256 above.
- 5.330 ComReg was unable to unearth any evidence of differentiated geographic pricing or marketing strategies being applied by any SPs. Additionally, no such evidence was presented to it other than SPs' pricing differently for services which were provided directly on their own networks (i.e. on-net) rather than via 3rd parties (off-net).
- 5.331 The market shares of Connected Premises and Service Shares (MI HQA LLs) calculated using the output WPZs of the 2019 Tera Algorithm are displayed below in Figure 62, Figure 63, Figure 64 and Figure 65. They clearly show that the Serviced Share trends broadly corroborate those already identified from the Connected Premises data. Eircom's market shares in Area 1 is less than 40% for both Connected Premises and Circuits and greater than 60% in Area 2 for both metrics.
- 5.332 The differences in the volumes of circuits, which are greater than Connected Premises, particularly in Area 1 is due to the manner in which many SPs count their leased lines i.e. the variance in the recording of physical and logical circuits, which is explained in detail in Annex 3.
- 5.333 Also noteworthy is that the circuits geographical measurement was completed against the final Zone A and Zone B defined in the SMP analysis which are a conflation of Areas 1 and 3 and 2 and 4 respectively. As the Connected Premises and Circuits address databases are not identical there may be some "spillage" of circuits address into other defined areas, Areas 3 and 4 where there were no Connected Premises found in 2018 data hence, the Circuits graphs are labelled Areas 1 & 2 and Areas 2 & 4 respectively. Additionally, there was a rounding of Connected Premises data for the previous years 2016 and 2017 where there was some small spillage into Areas 3 and 4.

Figure 62: Area 1 Market Shares Connected Premises [Redacted]

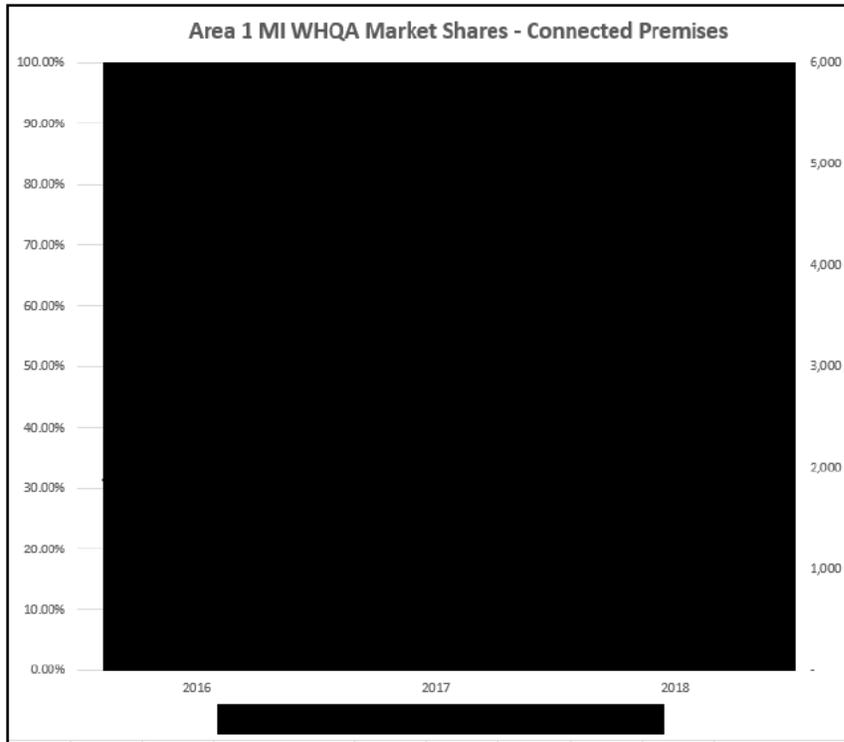


Figure 63: Area 1 & 3 Market Shares Circuits [Redacted]

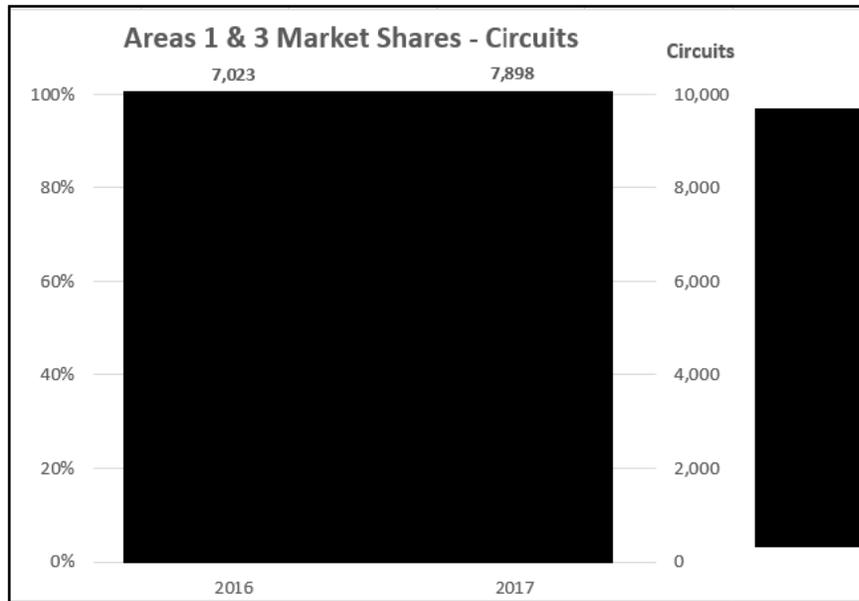


Figure 64: Area 2 Market Shares Connected Premises [Redacted]

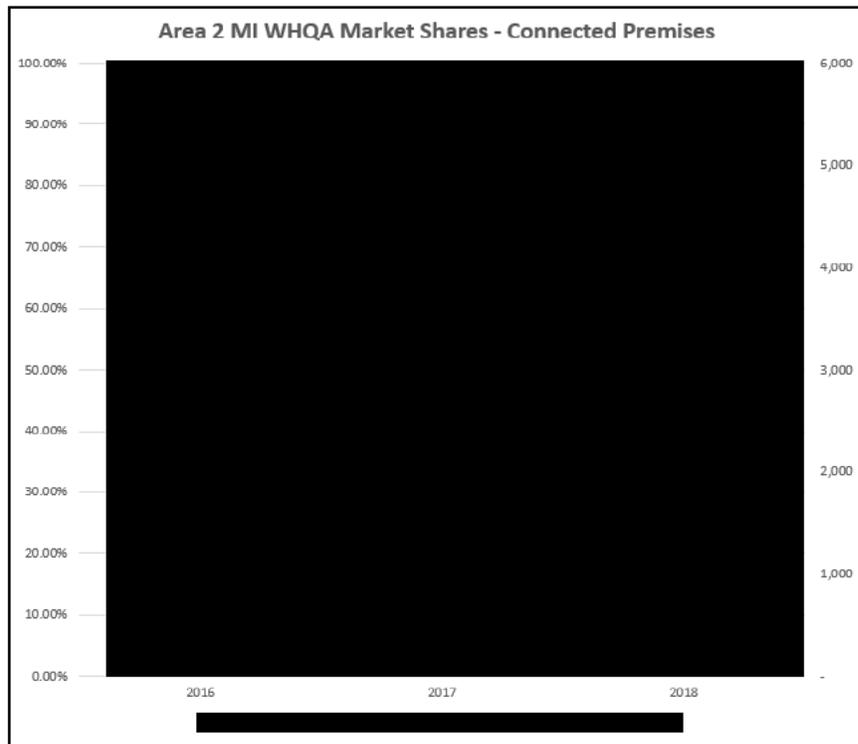
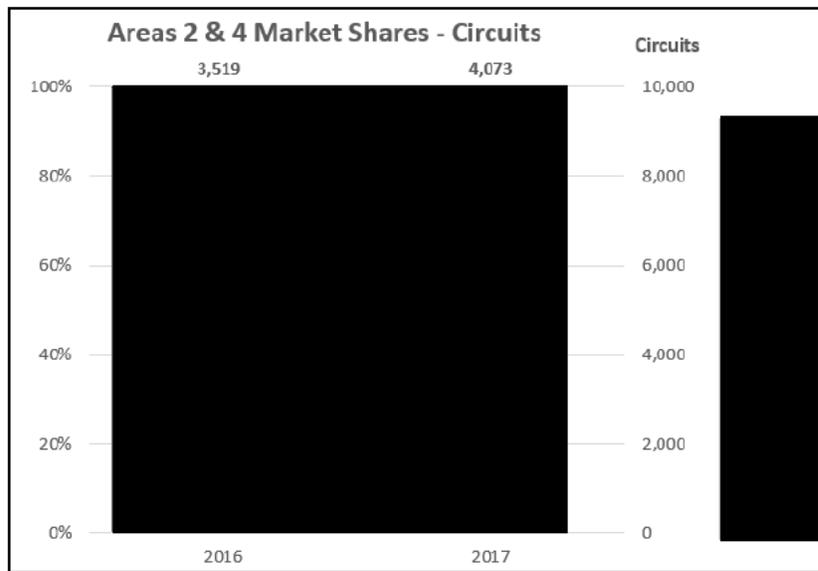


Figure 65: Areas 2 & 4 Market Shares Circuits [Redacted]



The 2019 Tera Algorithm used in this Decision

5.334 Below ComReg describes the 2019 Tera Algorithm now employed for ComReg’s analysis in this Decision.

- 5.335 ComReg has taken due account of the views of Respondents and information from other key sources such as DCC, the RMO, TII etc. as explained above in the relevant sections and in Annex 1, Section A.1.5 of this Decision where it has considered these issues at length. ComReg deliberations have accordingly led it to alter its approach in certain respects which are reflected in modifications to the 2018 Tera Algorithm⁵²⁶.
- 5.336 These changes can be summarised as follows:
- (a) the use of any Organisations (forecast) database has been removed;
 - (b) the Distance Criterion has been reduced from 100 to 50 metres;
 - (c) the publicly owned MAN networks are treated as being equivalent to privately own ANs;
 - (d) the order of the tests in the 2019 Tera Algorithm have been rearranged so that the demand considerations have been placed before supply considerations;
 - (e) the Geographic Unit has been changed from SAs to WPZs;
 - (f) a 'Business Parks' test has been incorporated into the algorithm; and
 - (g) an 'Islands test' has been incorporated into the algorithm.
- 5.337 The flowchart of the operation of the 2019 Tera Algorithm as set out in the 2019 Tera Report is reproduced in Figure 66 below. This shows the 7 areas (areas here refers to areas identified in the 2019 Tera Report) produced from the spatial computations using the parameters and assumptions described in the foregoing discussion and associated discussion in Annex 1, Section A.1.5.6 of this Decision. The flowchart of the 2018 Tera Algorithm has also been reproduced again in Figure 67 below to facilitate for easier comparison of these changes. ComReg has defined 4 separate MI WHQA Markets from a geographic perspective based on these 7 areas identified via the 2019 Tera Algorithm as set out in the 2019 Tera Report. Each market contains at least 1 undertaking⁵²⁷ which is involved in the supply of the relevant products defined in the MI product market as laid out in the product market definition, in the earlier part of this section of this Decision. ComReg considers that these markets each has sufficiently homogenous conditions of competition and can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different or heterogeneous. The geographic markets determined are as follows:

⁵²⁶ See 2019 Tera Report Section 4.

⁵²⁷ In some cases this may be Eircom only.

- (a) **Area 1 MI WHQA Market:** Comprised of a total of 1,582 WPZs made up of 3 'buckets' of WPZs considered collectively to be a geographic market of high density of AN infrastructure: the first, Area A1⁵²⁸ which contains Connected Premises of which a minimum of 75% are within 50 metres of 2 ANs; the second, Area A2⁵²⁹, constituted of WPZs which contains a business park which in turn contains 2 or more ANs and is overlapped by a WPZ which contains at least 1 connected premises⁵³⁰; and the third, Area A3⁵³¹ made up of WPZs which were initially designated as low density (under the test) WPZs but which are entirely surrounded by WPZs of a similar size and which are therefore designated as being of high density;
- (b) **Area 2 MI WHQA Market:** Comprised of a total of 1,998 WPZs which contain connected premises but fails the first test i.e. less than 75% are within 50 metres of 2 ANs, (except for those WPZs surrounded by other WPZs of similar size which have passed this test and those overlapped by business parks as explained above). This area relates to the single 'bucket' Area B1⁵³² and is considered to be a geographic market of low density AN infrastructure;
- (c) **Area 3 MI WHQA Market:** Comprised of a total of 1,153 WPZs made up of 2 'buckets' which are considered collectively to be a geographic market of indeterminate density of AN infrastructure: the first, Area A4⁵³³ comprised of WPZs which contain no connected premises and are touched by at least 2 ANs; and the second, Area A5⁵³⁴ which is compiled of WPZs which have failed this test (no connected premises and are not touched by at least 2 ANs) but are surrounded by WPZs which are of similar sized which have passed this test (no connected premises and are touched by at least 2 ANs) and are also therefore considered an area of indeterminate density of AN infrastructure; and

⁵²⁸ Refer to 2019 Tera Algorithm flowchart in Figure 66 below.

⁵²⁹ *Ibid.*

⁵³⁰ *Ibid.*

⁵³¹ *Ibid.*

⁵³² *Ibid.*

⁵³³ *Ibid.*

⁵³⁴ *Ibid.*

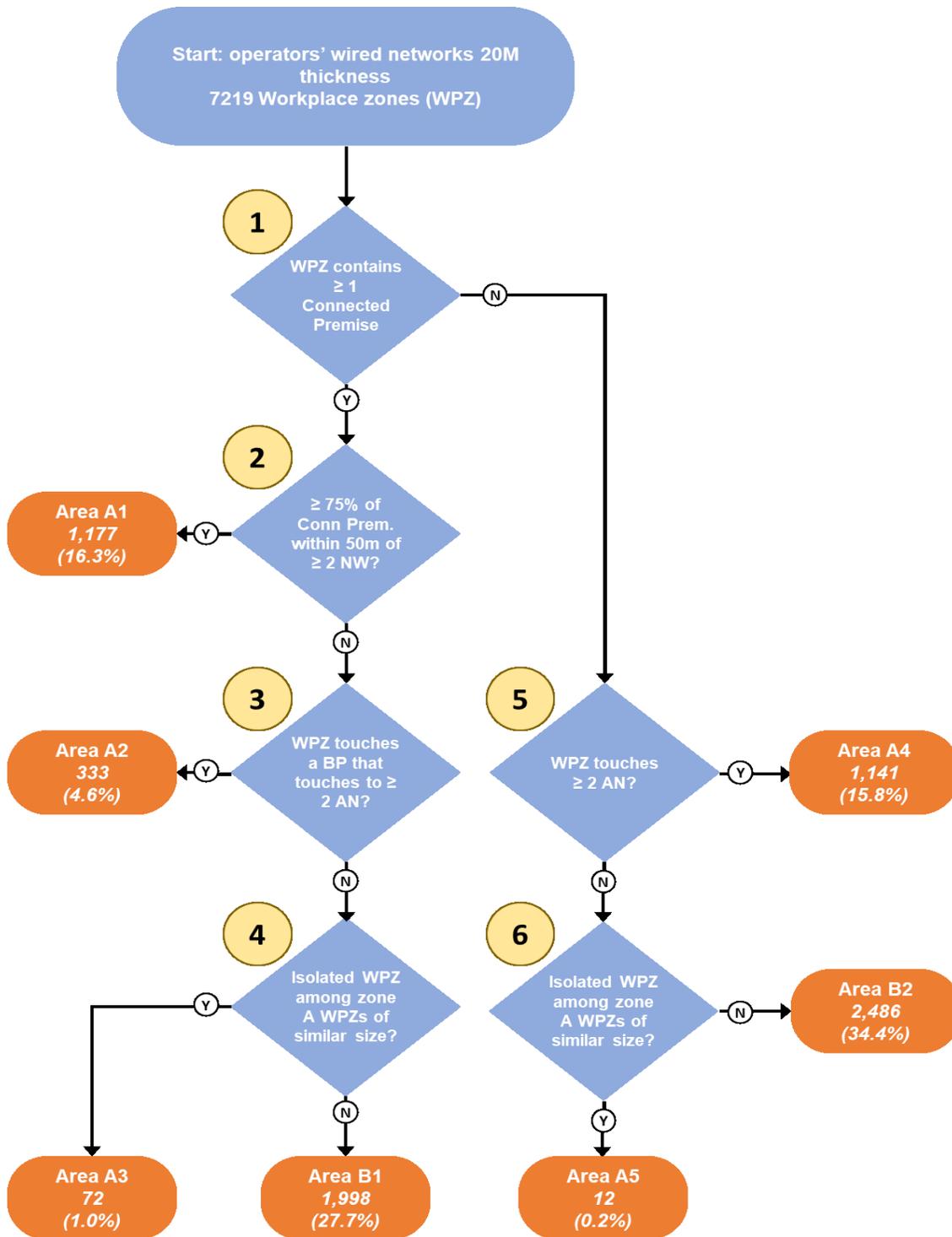
(d) **Area 4 MI WHQA Market:** Comprised of a total of 2,486 WPZs which contain no connected premises and are touched by less than 2 ANs and is considered an area of low density AN infrastructure and relates to Area B2⁵³⁵.

5.338 The Area 1 to Area 4 MI WHQA Markets are referred to together in this Decision as the '**MI WHQA Markets**'. As noted later in Section 6, following the SMP assessment, for the purpose of considering competition problems and the imposition of remedies, as appropriate:

- (a) the Area 1 MI WHQA Market and Area 3 MI WHQA Market are collectively referred to in this Decision as the '**Zone A MI WHQA Markets**'; and
- (b) the Area 2 MI WHQA Market and Area 4 MI WHQA Market are collectively referred to in this Decision as the '**Zone B MI WHQA Markets**'.

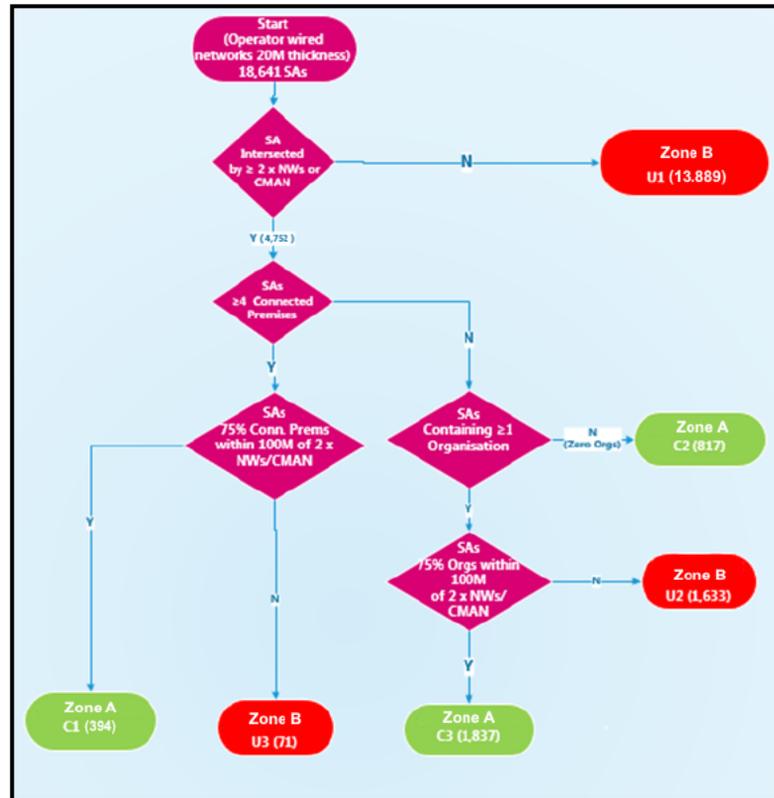
Figure 66: Flowchart of 2019 Tera Algorithm

⁵³⁵ *Ibid.*



5.339 Steps 1 – 4 of the diagram correspond to Markets 1 and 2 where there is current demand. In particular, Areas A1, A2 and A3 make up Market 1. Area B1 corresponds to Market 2. Steps 5 and 6 correspond to Markets 3 and 4 where there is no current demand. In particular, Areas A4 and A5 correspond to Market 3 and Area B2 corresponds to Market 4.

Figure 67: Flowchart of 2018 Tera Algorithm



Assessment of Geographic Scope of the TI WHQA Markets

5.340 This Section describes ComReg’s assessment of the geographic scope of the TI WHQA Markets and how it has arrived at its conclusion to maintain its original position set out in the 2016 Consultation and 2018 Further Consultation that the geographic scope of the LB TI WHQA Market and HB TI WHQA Markets⁵³⁶ are each national in scope.

⁵³⁶ LB TI WHQA and HB TI WHQA markets.

2016 Assessment of the Geographic Scope of the TI WHQA Markets

- 5.341 In the 2016 Consultation, ComReg set out the approach to its assessment of the geographic aspects of each of the then three WHQA markets (MI WHQA Market, LB TI WHQA Market and HB TI WHQA Market) defined in the 2016 Consultation. As laid out in paragraphs 5.189 to 5.198 in the 2016 Consultation, each market was subject to an assessment informed by the EC's Notice on Market Definition and the BEREC Common Position on Geographic Aspects of Market Analysis, hence the CGAC were applied to these prospective markets.
- 5.342 The main findings of the 2016 assessment, Consultation, were:
- (a) that the ubiquity of Eircom's network meant that it was able provide TI WHQA in any region across the State whereas there are only a small number of SPs providing TI LL services in a limited footprint;
 - (b) BT was also active in the provision of TI WHQA services. There was a limited variation in the number and size of competitors across geographic areas;
 - (c) market shares for the years 2013 to 2015 indicated that were not likely to vary across geography given the limited number of competitors; and
 - (d) geographic differentiated pricing strategies did not appear to be applied by SPs to either of the TI WHQA Markets.
- 5.343 ComReg's then preliminary view was that the geographic scope of both of the TI WHQA markets⁵³⁷ were each national in scope.

ComReg's Analysis and Preliminary View in the 2018 Further Consultation in regard to TI WHQA Markets

- 5.344 As there were no comments registered by any Respondents in relation to ComReg's preliminary position in the 2016 Consultation that defined the geographic scope of both the TI WHQA Markets as being national⁵³⁸. ComReg therefore proposed to maintain this preliminary position in the 2018 Further Consultation⁵³⁹.

⁵³⁷ 2016 Consultation, paragraph 5.206.

⁵³⁸ 2018 Further Consultation paragraph 4.125.

⁵³⁹ 2018 Further Consultation paragraph 4.265.

The 2019 assessment of the Geographic Scope of the TI WHQA Markets

5.345 Despite all Respondents having been silent on this issue in their 2016 Submissions and Submissions to the 2018 Further Consultation, for the assessment in this Decision both markets are subject to a similar analysis as that completed in 2016. The now 2019 assessment is again informed by the EC's Notice on Market Definition and the BEREC Common Position on Geographic Aspects of Market Analysis.

The 2019 Geographic assessment of the LB TI WHQA Market

5.346 ComReg considers that a mapping exercise for the LB TI WHQA Markets is not warranted as the structure of this market has not changed substantively since the assessment in the 2016 Consultation.

5.347 There are still a few SPs which provide LB TI HQA services, the majority being provided by Eircom, with BT is the only competitor which provides these to any appreciable extent. Hence, there is little variation in the number and size of competitors on a geographic basis and this situation is unlikely to change in the future when the overall size of the market is still in steady decline (9,246 TI circuits in 2013 to 3,508 circuits in 2018 as set out in Figure 68 below) and the likelihood of any new market entry is remote given the technology involved is outmoded.

5.348 Due to this fact, market shares are correspondingly considered unlikely to vary significantly on a geographic basis.

5.349 Additionally, the ubiquity of Eircom's network means that it can provide TI WHQA services to every region and almost every non-residential premises in the state.

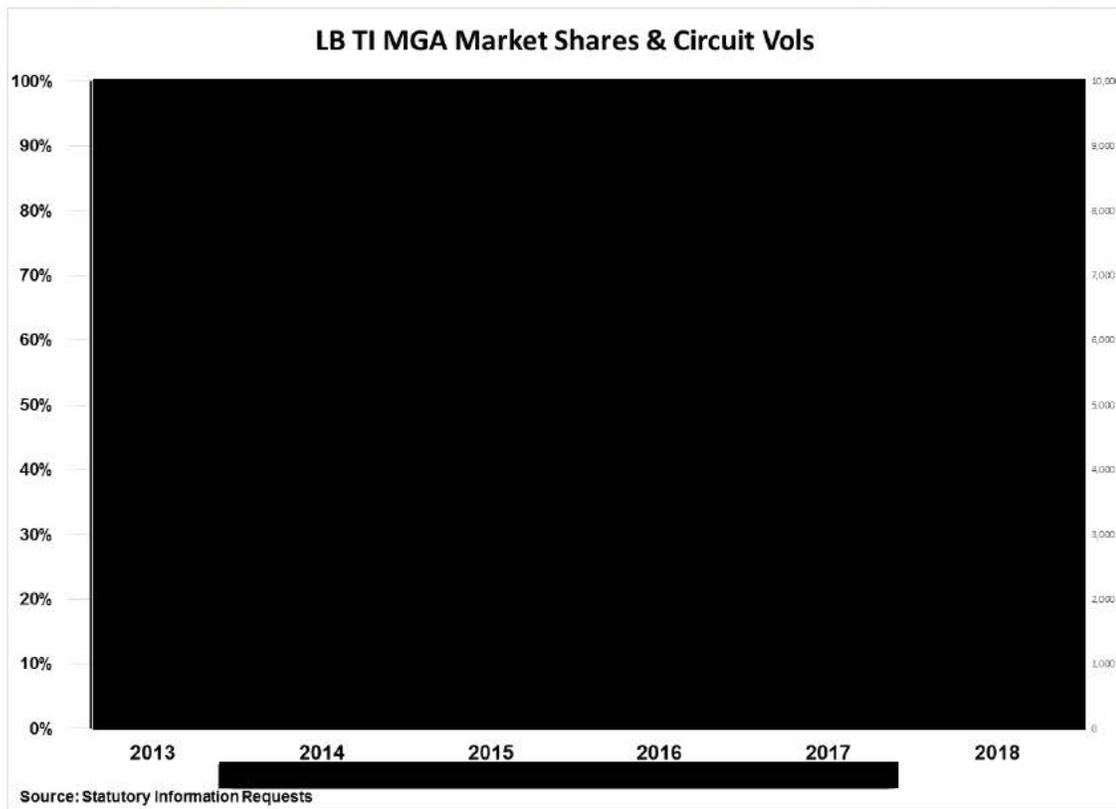
5.350 No differentiated geographic pricing or marketing evidence has been found or presented to ComReg.

5.351 As set out in Figure 68 below, the market share data indicates that Eircom's market share in the LB TI WHQA market, adjusted for the MGA, has been consistently been between 80% to 90% for the past 4 years.

5.352 Finally, due to this fact, market shares were correspondingly considered unlikely to vary significantly on a geographic basis.

5.353 For these reasons, ComReg considers that the Geographic Market of the LB TI WHQA Market is national in scope.

Figure 68: Hypothetical⁵⁴⁰ Market Shares – LB TI WHQA Market [REDACTED]

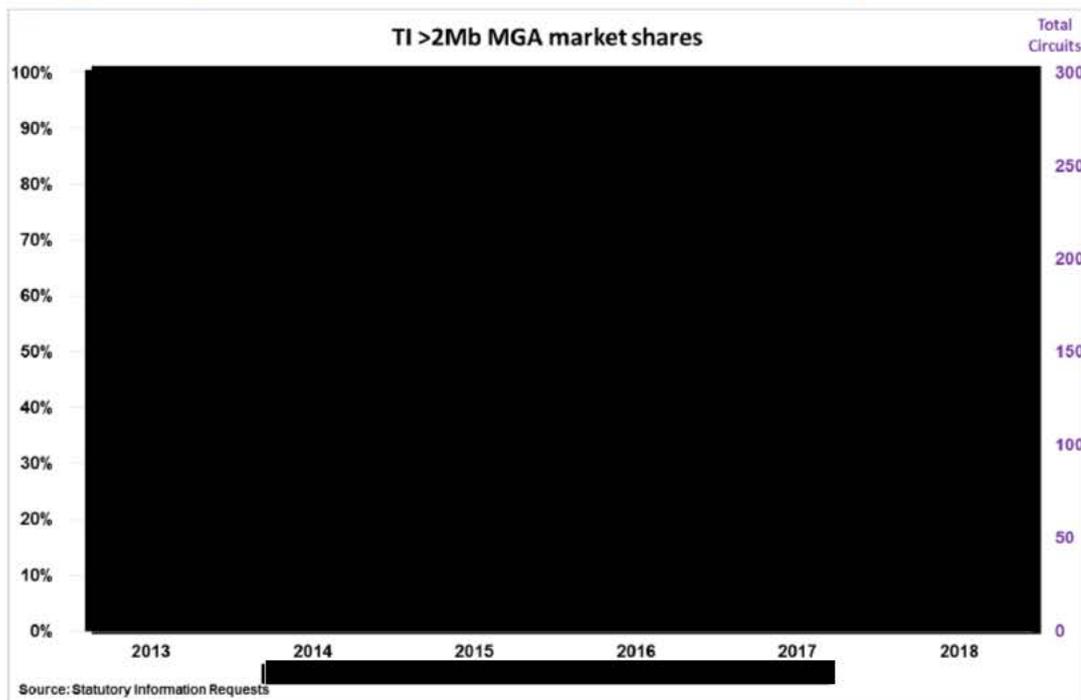


The 2019 Geographic assessment of the HB TI WHQA Market

5.354 As set out in Figure 69 below, the volume of HB TI WHQA circuits has steadily declined to the extent that there approximately 100 circuits in-situ at the end of 2018. Given ComReg’s view above that the TI WHQA markets are terminating segments, ComReg considers that the geographic scope of the HB TI WHQA Market is also likely to be national in scope, including having regard to the absence of any significant variations, on a geographic basis, in the number of competitors.

⁵⁴⁰ Modified Greenfield Approach (absent regulation).

Figure 69: Hypothetical⁵⁴¹ Market Shares – HB TI WHQA Market [REDACTED]



5.355 ComReg's position, therefore is that the HB TI WHQA Market is national in its geographic scope.

5.8 The Trunk – Terminating Boundaries of the WHQA Markets

Overview

5.356 The trunk-terminating boundary between networks delineates parts of a network that may face different competitive conditions of supply. In trunk networks, SPs may be able to aggregate traffic at relevant network points and so can exploit greater economies of scale, scope and density to overcome barriers to entry.⁵⁴²

⁵⁴¹ Modified Greenfield Approach (Absent regulation).

⁵⁴² For example, SPs can use the trunk network to aggregate traffic for other services including (but not limited to) broadband and telephony.

- 5.357 In relation to the WHQA product markets, these trunk markets are effectively adjacent to terminating WHQA segments, as SPs require both terminating and trunk segments to complete end-to-end connectivity.
- 5.358 Under the 2008 Decision (and subsequent to other decisions⁵⁴³), the trunk-terminating boundary of the then defined wholesale LL market is delineated by a bandwidth of greater than or equal to 155 Mb/s between 15 urban centres, irrespective of the network topology and type. In this respect, the 2008 Decision noted that:
- “Circuits which are provided using established infrastructure, between certain urban centres ... and which are of a capacity equal to or greater than STM-1 (155Mb/s) fall into the market for trunk segments of wholesale leased lines. OAO investment on these routes reflects the difference in the underlying economic conditions of supply and demand.”⁵⁴⁴*
- 5.359 This set of urban centres was subsequently expanded to 20 following decisions in 2010⁵⁴⁵ and 2013⁵⁴⁶.
- 5.360 Under the 2008 Decision, all such circuits are currently considered to be competitive due to the presence of 3 or more SPs (including Eircom) providing connectivity between these urban centres and consequently no SP is subject to *ex ante* SMP regulation.
- 5.361 In its 2014 Recommendation, the EC states, in relation to trunk LL markets, that:
- “...the presumption that trunk segments are replicable on a national scale remains valid. NRA’s should not revisit their analysis of trunk segments of leased lines where these have been previously found to be competitive.”⁵⁴⁷*

⁵⁴³ See paragraph 8.20 of this Decision.

⁵⁴⁴ Paragraph 5.7 of the 2008 Decision.

⁵⁴⁵ ComReg Decision No.D02/10, published 15 February 2010, added Portlaoise to the list of Urban Centres (**‘2010 Urban Centres Decision’**).

⁵⁴⁶ ComReg Decision No. D12/13, published 29 July 2013, added Athlone, Charleville, Mallow and Roscommon to the list of Urban Centres (**‘2013 Urban Centres Decision’**).

⁵⁴⁷ Section 4.2.2.3, 2014 Recommendation.

5.362 However, ComReg considers that the increase by SPs in competing trunk infrastructure since the 2008 Decision means that the trunk market has expanded since then.

Assessment of the Trunk-Terminating Boundary in the MI WHQA Markets

5.363 As noted in the 2018 Further Consultation⁵⁴⁸, in the 2016 Consultation Oxera considered that SPs are likely to be able to aggregate traffic between Eircom Aggregation Areas and, as such, the MI trunk-terminating boundary should be delineated as traffic between Aggregation Areas. Consequently, intra-regional traffic within an aggregation area was considered to be part of the terminating market.⁵⁴⁹

5.364 In arriving at the above view, Oxera set out a number of options for delineating the trunk-terminating boundary for the MI WHQA Markets. Oxera stated that:

“OAOs have extensive fibre routes at the regional level. This facilitates alternative interconnections between regions...Together, these points suggest that to the extent that OAOs are reliant on eircom, this is to supply terminating segment for Ethernet services in some instances.”⁵⁵⁰

5.365 Moreover, Oxera concluded that:

“The available evidence suggests that OAOs are able to aggregate Ethernet traffic between regions in Ireland...The NGN area approach also allows for flexibility with regard to the location of OAO infrastructure, and hence captures not only eircom but also OAO aggregation opportunities. Therefore, Oxera recommends the aggregation area approach to define the Ethernet trunk-terminating boundary.

⁵⁴⁸ See Section 4.5.2 of the 2018 Further Consultation.

⁵⁴⁹ Section 4.4, 2016 Oxera Report.

⁵⁵⁰ Section 4.4, 2016 Oxera Report.

This means that all MI circuit segments between different NGN aggregation areas are defined as trunk circuits. Circuit segments entirely within an aggregation area are defined as terminating segments.”⁵⁵¹

5.366 However, Oxera also considered a more granular approach whereby aggregation opportunities for SPs could be assessed at an Aggregation Node level. However, due to the then unavailability of reliable granular data at the Aggregation Node level, it was not considered appropriate to define the Trunk/Terminating boundary with reference to these.

5.367 In particular, Oxera stated that:

“.....there is a lack of evidence to support a...trunk boundary at the aggregation node level. This definition is based on assessing OAO locations in proximity to eircom’s NGN nodes. There are significant practical issues in Undertaking this analysis, given the lack of an objective distance measure to determine the constraint imposed by OAO locations near to (but not co-located with) eircom NGN nodes.”⁵⁵²

5.368 Although the geographic assessment and analysis in the 2018 Further Consultation was completed against a completely different set of circumstances to that in the 2008 Decision, the key consideration that emerged from the analysis is similar to those in 2008 in one important respect. This was the proximity of at least 2 ANs (other than Eircom) having either already established interconnection with Eircom or having infrastructure sufficiently close⁵⁵³ to Eircom Aggregation Nodes⁵⁵⁴ which could reasonably facilitate MI WHQA interconnection services with Eircom. The analysis in the 2018 Further Consultation identified 107 such Aggregation Nodes as being trunk nodes and were listed in Appendix 8 of the 2018 Further Consultation.

⁵⁵¹ This would include segments served by APT Reach nodes or any other Ethernet extension product, where these devices would be associated with the nearest (logical) NGN aggregation node. Note that the Oxera terminology in the quotation above that refers to “areas’ corresponds to Eircom Aggregation NGN regions.

⁵⁵² Section 4 of the 2016 Oxera Report.

⁵⁵² Section 4 of the 2016 Oxera Report.

⁵⁵³ The 2010 Further Consultation suggested a distance of circa 100 metres.

⁵⁵⁴ There are currently 192 Eircom Aggregation Nodes.

- 5.369 ComReg also considered whether a bandwidth break for the Trunk market was appropriate and set out the view that it was not⁵⁵⁵.
- 5.370 ComReg also noted in the 2018 Further Consultation that Eircom would be obliged to provide interconnection services at the Trunk Node locations, even though they are - by definition – located within the then Zone A MI WHQA Market. This is because if Access Seekers cannot interconnect at the Trunk Node, it is not possible for them to effectively compete in the Zone B MI WHQA Market or in the related retail Leased Lines markets.
- 5.371 Respondents' views on this issue in response to the 2018 Further Consultation and ComReg's assessment of them are discussed in detail in Annex 1⁵⁵⁶ of this Decision. Vodafone considered that as some ANs operated as vertically integrated SPs and may not in theory resell services to their competitors and additionally, that establishing colocation in Eircom exchanges was a barrier to achieving interconnectivity with Eircom.
- 5.372 enet stated the boundary established under the 2008 Decision was sufficient and because it disagreed with ComReg's entire assessment, no change to the current regime should be considered.
- 5.373 ComReg disagrees with both Respondents. Firstly, in regard to Vodafone's views ComReg considers that the presence of 2 ANs was sufficient as has been the criteria that had already been applied to date in this market and there was no evidence presented as to why this should be changed. ComReg does not accept the argument that Co-Location is a significant barrier establishing interconnectivity with Eircom. Even if this were to be the case, Co-Location is not an essential component of interconnection which could be established by other Eircom interconnection product variations⁵⁵⁷. ComReg also does not accept enet's assertion that the 2008 Decision approach should remain, as the evidence suggests that market developments (such as the increased roll-out by SPs of networks) means that an updated assessment is due.

⁵⁵⁵ See paragraphs 4.252 to 4.253 of the 2018 Further Consultation.

⁵⁵⁶ See Section A.1.5.9.

⁵⁵⁷ In-span and Customer Sited Handover. See www.openeir.ie

- 5.374 Relative to the preliminary view set out in the 2018 Further Consultation, ComReg notes that, as a consequence of now treating enet's CMANS⁵⁵⁸ as one AN, some readjustment to its analysis is required. Adjustments have also been made to reflect the availability of updated data as provided by SPs in response to SIRs.
- 5.375 These adjustments have now resulted in 93 nodes being defined as trunk nodes as listed in Annex 10 of this Decision.
- 5.376 Overall, ComReg's position is that the trunk market for MI WHQA should be reapportioned to include all MI WHQA irrespective of bandwidths between each of the Trunk Nodes set out in Annex 10 of this Decision.

The TI WHQA Trunk-Terminating Boundary Assessment

- 5.377 ComReg noted in its 2016 analysis that in the 2016 Oxera Report⁵⁵⁹, it proposed a national wholesale terminating market due to the absence of current breaks in competition in different TI LL segments⁵⁶⁰. ComReg further noted that there were a low number of Eircom exchanges (9), where 2 or more SPs who provided TI WHQA services were interconnected and that only 1 of these resold Eircom TI WHQA services. Additionally, it considered that due to the decline in overall product volumes, any new investment in competitive core conveyance services for TI WQA LLs was unlikely. ComReg's preliminary conclusion was that all TI WHQA LLs within each of the TI WHQA markets could be considered as terminating segments⁵⁶¹.
- 5.378 The decline in volumes of both the TI WHQA markets has continued as predicted and as demonstrated clearly in both Figure 68 and Figure 69 as well as the other considerations referred to above regarding the low likelihood of future investment and interconnection in this technology remain valid.
- 5.379 ComReg therefore considers that its preliminary view was correct and that both TI WHQA markets constitute terminating segments.

⁵⁵⁸ See paragraph 5.287 of this Decision.

⁵⁵⁹ 2016 Consultation, Appendix 2, 2016 Oxera Report, Section 4.3.

⁵⁶⁰ 2016 Consultation, paragraph 5.178.

⁵⁶¹ 2016 Consultation, paragraph 5.179.

6 Competition Analysis and Assessment of SMP in the Relevant WHQA Markets

6.1 Overview

- 6.1 In this Section, ComReg sets out its decision in relation to the assessment of competition in the Relevant WHQA Markets defined in Section 5.
- 6.2 Of the 7 Submissions received from SPs, all 7 Respondents (ALTO, BT, Eircom, enet, Verizon, Vodafone and Zayo) commented on the SMP assessment in the 2018 Further Consultation. ComReg summarises and assesses these Respondents' views in Annex 1, Section A.1.6 of this Decision.
- 6.3 In summary, insofar as the SMP assessment in the Relevant WHQA Markets are concerned, ComReg has decided that:
- (a) Eircom is likely to have SMP in the LB TI WHQA Market;
 - (b) No SP is likely to have SMP in the HB TI WHQA Market;
 - (c) No Undertaking is likely to have SMP in the Area 1 MI WHQA Market;
 - (d) Eircom is likely to have SMP in the Area 2 MI WHQA Market;
 - (e) No Undertaking is likely to have SMP in the Area 3 MI WHQA Market; and
 - (f) Eircom is likely to have SMP in the Area 4 MI WHQA Market.
- 6.4 As noted later in this Section 6, following the SMP assessment, for the purpose of considering competition problems and the imposition or withdrawal of remedies, we amalgamate geographic markets where each display the presence of the same competition problems (or absence of any) as appropriate, namely:

- (a) the Area 1 MI WHQA Market and Area 3 MI WHQA Market are collectively referred to in this Decision as the '**Zone A MI WHQA Markets**'; and
- (b) the Area 2 MI WHQA Market and Area 4 MI WHQA Market are collectively referred to in this Decision as the '**Zone B MI WHQA Markets**'.

6.5 This Section 6, is set out as follows:

- (a) Section 6.2 below sets out ComReg's Framework for Assessing SMP;
- (b) Section 6.3 below sets out ComReg's Assessment of the LB TI WHQA Market;
- (c) Section 6.4 below sets out ComReg's Assessment of the HB TI WHQA Market;
- (d) Section 6.5 below sets out ComReg's Assessment of the Area 1 MI WHQA Market;
- (e) Section 6.6 below sets out ComReg's Assessment of the Area 2 MI WHQA Market;
- (f) Section 6.7 below sets out ComReg's Assessment of the Area 3 MI WHQA Market;
- (g) Section 6.8 below sets out ComReg's Assessment of the Area 4 MI WHQA Market; and
- (h) Finally, Section 6.9 below sets out ComReg's designation of Eircom with SMP in the LB TI WHQA Market, the Area 2 MI WHQA Market, and the Area 4 MI WHQA Market.

6.2 Framework for Assessing SMP

6.6 Having defined six Relevant WHQA Markets, ComReg is required to determine whether each WHQA market is effectively competitive having regard to whether or not any of the SPs operating within them has SMP.

6.7 The European regulatory framework for electronic communications networks and services has aligned the concept of SMP with the competition law definition of dominance advanced by the Court of Justice of the European Union in *United Brands v. Commission*⁵⁶²:

⁵⁶² Case 27/76 *United Brands v European Commission* [1978] ECR 207, Paragraph 65. See also paragraph 24 of the [SMP Guidelines](#).

“The dominant position referred to [by Article 102 of the Treaty on the Functioning of the European Union] relates to a position of economic strength enjoyed by an Undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers.”

6.8 Article 14(2) of the Framework Directive⁵⁶³ effectively mirrors this definition of dominance and states that:

“An Undertaking shall be deemed to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers.”

6.9 Arising from this definition, ComReg assesses whether SMP exists in accordance with the framework established by the European Commission.

6.10 The European Commission’s SMP Guidelines, of which ComReg is required to take utmost account⁵⁶⁴, refer to a range of criteria that may be considered by National Regulatory Authorities (‘NRAs’) when seeking to establish whether any Undertaking(s) has SMP in a relevant market.

6.11 The SMP Guidelines state that according to established case-law, very large market shares (that is, market shares in excess of 50%) are in themselves, save in exceptional circumstances, evidence of the existence of a dominant position:

“According to established case-law, very large market share held by an Undertaking for some time — in excess of 50% — is in itself, save in exceptional circumstances, evidence of the existence of a dominant position. Experience suggests that the higher the market share and the longer the period of time over which it is held, the more likely it is that it constitutes an important preliminary indication of SMP”⁵⁶⁵

⁵⁶³ Which is transposed into Irish law by Regulation 25(1) of the Framework Regulations.

⁵⁶⁴ In accordance with Regulation 25(2) of the Framework Regulations.

⁵⁶⁵ Paragraph 55 of the SMP Guidelines.

- 6.12 Market shares in excess of 50% therefore, give rise to a strong presumption of SMP.⁵⁶⁶ However, the SMP Guidelines also state that the existence of a high market share alone is not sufficient to establish the existence of SMP; rather it means that the Undertaking concerned might be in a dominant position and this needs to be considered alongside other potentially relevant criteria for assessing the existence of SMP, including the following:⁵⁶⁷
- (a) Barriers to entry;
 - (b) Barriers to expansion;
 - (c) Absolute and relative size of the Undertaking;
 - (d) Control of infrastructure not easily duplicated;
 - (e) Technological and commercial advantages or superiority;
 - (f) Absence of or low countervailing buying power;
 - (g) Easy or privileged access to capital markets/financial resources;
 - (h) Product/services diversification (for example, bundled products or services);
 - (i) Economies of scale;
 - (j) Economies of scope;
 - (k) Direct and indirect network effects;
 - (l) Vertical Integration;
 - (m) A highly developed distribution and sales network;
 - (n) Conclusion of long term and sustainable access agreements;
 - (o) Engagement in contractual relations with other market players that could lead to market foreclosure; and
 - (p) Absence of potential competition.

⁵⁶⁶ Paragraph 55 of the SMP Guidelines

⁵⁶⁷ Paragraph 58 of the SMP Guidelines

- 6.13 The relative importance of each factor may vary from one analysis to the next as the characteristics or dynamics of the relevant market under examination change. Consequently, flexibility is needed in applying the above criteria. In addition, many of the above factors, while presented separately, may in fact be interrelated and all available evidence is considered by ComReg as a whole before a determination on SMP is made. In this respect, the SMP Guidelines note that:⁵⁶⁸

“If taken separately, the above criteria may not necessarily be determinative of a finding of SMP. Such finding must be based on a combination of factors”

Assessment of Competition and SMP

- 6.14 Each of the relevant factors identified in paragraph 6.12 above is considered in detail below. Given an inherent degree of overlap, ComReg proposes to combine its assessment of these factors under the following three broad headings:
- (a) Existing competition in the Relevant WHQA Markets: an assessment of factors such as vertical integration, market shares, relative strength of existing competitors, barriers to expansion, indirect constraints, and pricing behaviour;
 - (b) Potential competition in the Relevant WHQA Markets: an assessment of factors such as control of infrastructure not easily duplicated, barriers to entry in the Relevant WHQA Markets, as well as considering the overall strength of potential competitors;
 - (c) Strength of any countervailing buyer power (**‘CBP’**): an assessment of the impact posed by any strong buyers of WHQA products on the competitive behaviour of WHQA SPs.⁵⁶⁹
- 6.15 Insofar as existing competition based on indirect retail constraints is concerned, in Section 5 ComReg set out its view that such constraints are not sufficiently material to impact the assessment of market definition. Furthermore, for similar reasons as set out in Section 5, ComReg is of the view that such constraints are not material to the assessment of competition in the Relevant WHQA Markets.

⁵⁶⁸ Paragraph 58 of the SMP Guidelines.

⁵⁶⁹ It should be noted that where it found that existing competition is sufficient to ascertain that an Undertaking is not likely to have SMP in a relevant market, then the competitive constraint imposed by likely potential competition and countervailing buyer power are of relatively less importance with the exception of markets where there is a concern that the existing competition may not be stable.

6.3 SMP Assessment in the LB TI WHQA Market

- 6.16 ComReg now assesses competition in the LB TI WHQA Market. After looking at market shares (and other factors) to assess existing competition, which indicate that Eircom has a high (and stable) share of this market, ComReg then examines the impact of potential competition and CBP before concluding that Eircom has SMP in this market.
- 6.17 3 Respondents to the 2018 Further Consultation (BT, enet, and Vodafone), agreed with ComReg's preliminary assessment that Eircom has SMP in the LB TI WHQA Market. The remaining 4 Respondents made no comment on the matter. ComReg has considered Respondents' views in Annex 1, Section A.1.6.1 of this Decision.

Existing Competition in the LB TI WHQA Market

Market shares in the LB TI WHQA Market

- 6.18 Figure 70 below shows the 'hypothetical'⁵⁷⁰ market shares in the LB TI WHQA Market over the period 2013 to 2018, in an absent SMP regulation scenario. It illustrates that Eircom has a high and persistent market share over the entire period⁵⁷¹ with its market share at [redacted] ⁵⁷² in 2018 having also been at a similar level since 2015 .
- 6.19 Moreover, Figure 70 below shows Eircom's share of this declining market has increased over the period since 2013. In this regard, ComReg notes that Eircom's main competitor in this market (BT)⁵⁷³ [redacted] [redacted]] with this leading to an increase in Eircom's market share by [redacted] ⁵⁷⁴. Additionally, BT indicated⁵⁷⁵ that [redacted] [redacted]], thus suggesting that BT is unlikely to increase its market share within the lifetime of this market review.

⁵⁷⁰ These shares are considered hypothetical as they include both retail and wholesale self-supply as such retail self-supply could be switched to the wholesale market without incurring significant costs.

⁵⁷¹ Eircom's market share has remained above 65% for each of the years in the period 2013 to 2018.

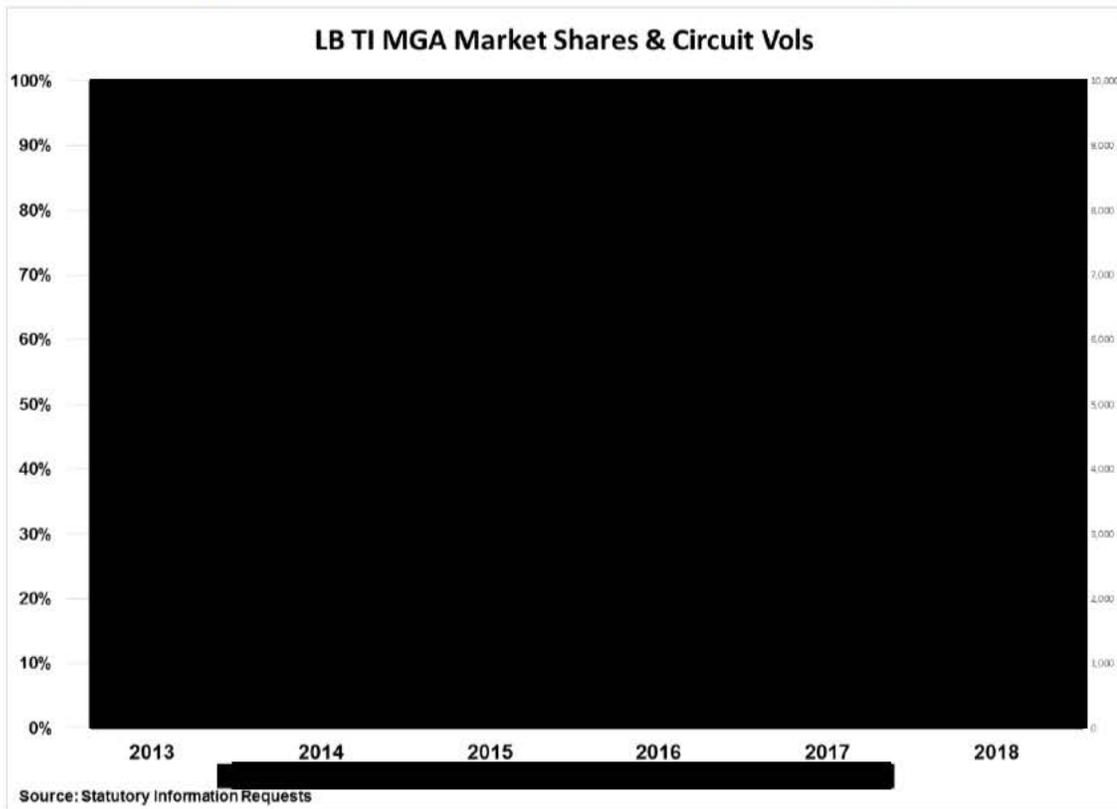
⁵⁷² Between 80% and 90%.

⁵⁷³ BT has a market share of [redacted]] (between 10% and 20%).

⁵⁷⁴ Between 10% and 20%.

⁵⁷⁵ BT's response to ComReg's Qualitative Questionnaire.

Figure 70: Hypothetical⁵⁷⁶ Market Shares – LB TI WHQA Market <[REDACTED]>



- 6.20 It should also be noted that, as indicated in Table 8.5⁵⁷⁷ of the 2016 Oxera Report, Eircom’s existing competitors in the Retail LB TI Market continue to be heavily dependent on Eircom’s wholesale inputs when providing retail services. Overall, at the end of 2018 <[REDACTED]>⁵⁷⁸ of retail LB TI LLs provided by Eircom competitors depended on the use of wholesale inputs supplied by Eircom.
- 6.21 Thus, given the general decline in demand for LB TI retail LLs provided by all SPs, ComReg does not consider it probable that, within the lifetime of this review, Eircom’s existing competitors will increase their supply of such services. As a consequence, Eircom’s market share is unlikely to fall close to or below 50% over the duration of this review.

⁵⁷⁶ Absent regulation.

⁵⁷⁷ See page 86 of the 2016 Oxera Report.

⁵⁷⁸ Between 60% and 70%.

Pricing Behaviour

- 6.22 The development and extent of competition in a market over time may be evident in the pricing of LB TI WHQA products, services and facilities. In an SMP assessment, the ability of a SP to behave, to an appreciable extent, independently of the pricing behaviour of its competitors may be suggestive (but not determinative in itself) of SMP when considered alongside other factors. In view of this, ComReg has reviewed trends in LB TI WHQA pricing over time.
- 6.23 Eircom's wholesale prices for LB TI WHQA products are regulated by ComReg and it is ComReg's view that the WHQA price reductions that have occurred over the last number of years have primarily arisen from intermittent reviews by Eircom of the inputs (such as costs and volumes) feeding into the cost-model which is used to derive regulated prices (rather than arising from competitive constraints arising in the LB TI WHQA Market).
- 6.24 Furthermore, given the lack of effective existing competition in the LB TI WHQA Market it is ComReg's view that, absent regulation, Eircom has both the ability and incentive⁵⁷⁹ to increase prices (above the competitive level) offered/charged to Access Seekers for LB TI WHQA LLs.
- 6.25 In light of the above, there is no firm behavioural evidence to suggest that Eircom is facing effective pricing constraints in the provision of LB TI WHQA LLs.

Other factors relevant to existing competition in the LB TI WHQA Market

- 6.26 Other factors considered by ComReg include vertical integration, relative strength of existing competitors, barriers to expansion and indirect constraints.

⁵⁷⁹ These abilities and incentives are discussed in Section 7 dealing with competition problems.

Vertical Integration

- 6.27 A vertically integrated operator can enjoy efficiencies arising from its presence in upstream and downstream markets. Such efficiencies can also be passed on to End Users in the form of more competitive prices, lower transaction costs and/or enhanced product quality. However, vertical integration can also constitute an entry barrier where the presence of a firm at multiple levels of the production or distribution chain raises the costs of new entry (for example, where prospective new entrants perceive the need to enter multiple markets simultaneously to pose a viable competitive constraint on the vertically integrated operator) and/or increases the possibilities for the integrated operator to foreclose competition at one or more levels in the value chain, the threat of which could in turn act as a disincentive to new entry.
- 6.28 As well as being the largest LB TI WHQA supplier, Eircom is also a significant provider of retail LB TI retail LLs.⁵⁸⁰ As such, Eircom's significant customer base in the retail market is likely, at this point in time, to consolidate its market power in the LB TI WHQA Market.
- 6.29 As a supplier of LB TI WHQA LLs and retail LB TI LLs, Eircom may also have incentive to raise the cost to its rivals supplying retail services (and other services) by, for example, applying excessive prices.⁵⁸¹
- 6.30 Eircom's vertically integrated structure also mitigates the extent to which Eircom is dependent on its LB TI WHQA revenue.⁵⁸² As such, absent regulation, Eircom could potentially seek to maximize its total profits by increasing LB TI WHQA prices (or indeed refusing access to LB TI WHQA) and, in doing so, seek to foreclose competition in the LB TI retail LL market.
- 6.31 Figure 70 above illustrates that the majority of Eircom's competitors in the LB TI Retail Market rely on Eircom's LB TI WHQA services when competing for End Users purchasing retail LB TI LLs.

⁵⁸⁰ See Section 4 for details of Eircom's market share in various retail markets.

⁵⁸¹ See further discussion of the potential for Eircom to apply excessive prices in Section 7 of this Consultation.

⁵⁸² See further discussion of this impact under the countervailing buyer power Section in paragraphs 6.60 to 6.84 below.

- 6.32 Having regard to the above, ComReg's view is that Eircom's vertically integrated structure could enhance Eircom's suggested SMP position in the LB TI WHQA Market by allowing it to behave, to an appreciable extent, independently of its competitors, customers and consumers (and by potentially increasing barriers to entry by, for example, requiring an entrant to enter multiple vertically-related markets concurrently).

Strength of Existing Competitors

- 6.33 As noted in Figure 70 above, Eircom has a market share in the LB TI WHQA Market several times larger than its nearest competitor. As such, no existing alternative SP has a market share that would suggest it is capable of exercising a sufficient competitive constraint on Eircom.

Barriers to Expansion

- 6.34 ComReg's view is that as the LB TI WHQA Market is declining with trivial numbers of new circuits being ordered, there is no incentive for alternative SPs to invest in expanding their infrastructure in this market as any such investment is likely to be stranded⁵⁸³.

Conclusion on Existing Competition

- 6.35 ComReg's position is that, absent regulation in this market, it is unlikely that Eircom would be sufficiently constrained by existing competition such that it would prevent Eircom from behaving, to an appreciable extent, independently of competitors, customers and consumers.
- 6.36 This is due to Eircom's persistently high and stable (over the last number of years) market share in a declining market, the lack of effective indirect pricing constraints and no notable evidence of existing competition materially impacting Eircom's pricing behaviour, all of which is suggestive of Eircom having SMP in the LB TI WHQA Market. Below, ComReg considers other relevant factors (potential competition and CBP) which may have the effect of diminishing or undermining Eircom's suggested SMP position in the LB TI WHQA Market.

⁵⁸³ For further information, see paragraphs 6.44 to 6.45 below.

Potential Competition in the LB TI WHQA Market

- 6.37 Noting the absence of an effective competitive constraint posed by existing competition, ComReg now assesses the likely effectiveness of any constraints likely to be posed by potential competition in the LB TI WHQA Market.
- 6.38 This assessment considers whether entry (and expansion) in the LB TI WHQA Market is sufficiently likely, timely, and credible to such an extent that it would effectively constrain Eircom's ability to act independently of its competitors, customers and consumers over the medium term⁵⁸⁴.
- 6.39 In considering constraints posed by potential competition, ComReg first examines the barriers to entry and expansion insofar as they may impact upon the effectiveness of the constraints posed by potential competitors. Then, ComReg assesses the strength of any such potential competition having regard to the barriers to entry and expansion that have been identified.

Barriers to Entry and Expansion

- 6.40 In assessing the likelihood of potential competition to act as an effective constraint on Eircom over the period of this review, ComReg has examined the nature and extent of any barriers to firms both entering and/or subsequently expanding in the LB TI WHQA Market.
- 6.41 Barriers to entry generally comprise any disadvantage that a new entrant faces when entering a market that incumbents do not currently face. According to the Explanatory Note to the 2014 Recommendation:⁵⁸⁵
- “...high structural barriers may be found to exist when the market is characterised by absolute cost advantages, substantial economies of scale and/or economies of scope, capacity constraints, and high sunk cost. Such barriers can be found in sectors that rely on the deployment of networks, such as fixed networks for electronic communications.”*
- 6.42 Barriers to growth and expansion are obstacles that a new entrant (or smaller existing competitor) faces in its ability to grow or expand in a particular market, and which limit its ability to assert an effective competitive constraint over the medium to longer term.

⁵⁸⁴ See paragraph 61 of the European Commission's SMP Guidelines.

⁵⁸⁵ Explanatory Note to 2014 Recommendation, page 9.

- 6.43 Assessing the barriers to entry and expansion involves initially identifying what represents credible entry into the LB TI WHQA Market. In order to provide an effective competitive constraint, a potential entrant must provide a product that at least meets the characteristics of the WHQA products, services and facilities set out in Section 5 (thereby meeting the expectations of Access Seekers).

LB TI WHQA Market is in decline

- 6.44 As evidenced in Figure 70, the number of LB TI WHQA (and associated retail LLs) is in steady decline. In 2013 there were 9,261 such circuits in operation. By 2018, this had decreased to 3,508 – a decrease of 62%. Furthermore, this demand is almost exclusively legacy, with only [\leq ██████████]⁵⁸⁶ new LB TI WHQA LLs sold by Eircom in 2018.
- 6.45 ComReg considers it likely that this market will continue to decline over the duration of the review, however, the pace of this decline is likely to be slower given reductions to date have been impacted by bulk type circuit reductions which have now occurred. As such, in ComReg's view, there is likely to be insufficient potential demand to incentivise an SP to invest in infrastructure to provide LB TI WHQA in the future.

Adapting an Existing Network to Provide LB TI WHQA

- 6.46 ComReg has considered the extent to which potential entry in the LB TI WHQA Market by an existing vertically integrated SP adapting its network would be likely to occur over the period of this market review and effectively constrain Eircom's suggested SMP position.
- 6.47 The barriers to entry present in the Relevant WHQA Markets may be lessened, in part, if a potential entrant has an existing network that is used to provide other services and could be leveraged to also provide WHQA services.
- 6.48 Relative to a 'Greenfield' entrant, an existing vertically integrated SP seeking to enter the LB TI WHQA Market could face reduced sunk costs, particularly those relating to the upfront civil costs involved in building a network. An existing SP also has an existing customer base over which it may, through cross-selling, more easily recover entry costs, and may be better placed to achieve economies of scale, scope, and density relative to a 'new build' Greenfield entrant.

⁵⁸⁶ Less than 10.

- 6.49 However, ComReg does not consider it likely that entry by an existing SP through adapting its network would be likely to occur over the period of this review having regard to the slow decline in this market and the uncertainty this creates about the ability for an SP to recover any investment (which would be largely sunk and stranded).

Potential LB TI WHQA entry by existing MI WHQA providers

- 6.50 In paragraphs 5.203 to 5.205 ComReg explained that it was of the view that supply-side substitution is likely to be limited due to the existence of significant fixed costs associated with the change of electronic equipment required to deliver TI WHQA services. Moreover, it is likely to be inefficient for MI WHQA SPs to begin supplying TI WHQA services as the demand for these services is in decline and thus, the required investments are unlikely to be recovered.
- 6.51 The 2016 Oxera Report⁵⁸⁷ also notes that there are barriers to entry in the LB TI WHQA Market associated with the ubiquity of Eircom's copper network as well as the presence of economies of scale and scope since TDM infrastructure can also be used to deliver voice services.
- 6.52 It should also be noted that none of the Respondents to ComReg's Qualitative Questionnaire indicated that they are considering launching new TI WHQA services over the period of this market review. In this regard, BT noted that:

[& [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]]

- 6.53 For these reasons, and due to the general decline in demand for TI LL by retail End Users (from which TI WHQA demand is derived), ComReg considers it unlikely that entry into the LB TI WHQA Market by MI WHQA SPs will be likely to occur over the period of this review. In fact, due to the decline in demand, market exit is a more likely development over the duration of this review.

⁵⁸⁷Section 9.3.3 of the 2016 Oxera Report.

Using LLU inputs to offer LB TI WHQA services

- 6.54 As noted in paragraph 4.146 to 4.151, BT, Digiweb and Magnet are already using LLU inputs to provide retail and/or wholesale EFM based services (albeit in low numbers). Thus, potential entrants could enter the LB TI WHQA Market by purchasing these upstream products over the period of this market review.
- 6.55 However, the overall take-up of LLU products remains relatively low. As of Q2 2019⁵⁸⁸, there were 25,918 LLU lines of which 23,086 were Line Share (which are not related to any EFM⁵⁸⁹ service) and 2,832 were Fully Unbundled lines⁵⁹⁰. Given the low demand to date, ComReg does not consider it likely that the use of LLU inputs by SPs to offer LB TI WHQA LLs would act as an effective competitive constraint over the period of this review.⁵⁹¹
- 6.56 ComReg also considers that a SP attempting to enter or expand in the LB TI WHQA Market using LLU would be likely to face many of the same barriers to entry faced by 'Greenfield entrants', including:
- (a) the WHQA entrant would be unlikely to benefit from the same economies of scale to those enjoyed by the incumbent WHQA supplier, thus making it more difficult to compete with the incumbent WHQA supplier; and
 - (b) the entrant would be likely to face significant sunk costs in attempting to replicate (even to a lesser scale) the WHQA service using LLU inputs. These would include the costs associated establishing backhaul networks, unbundling exchanges (or upgrading equipment in existing unbundled exchanges), and costs associated with developing WHQA services as well as billing and order management systems.
- 6.57 For these reasons, ComReg considers it unlikely that entry into the LB TI WHQA Market using LLU products will occur over the period of this review to an extent that would pose an effective competitive constraint on Eircom in the provision of WHQA.

⁵⁸⁸ Source: ComReg's QKDR, Q2 2019.

⁵⁸⁹ While EFM services fall within the MI WHQA Market, it is nonetheless illustrative of the use of LLU inputs to deliver WHQA services.

⁵⁹⁰ Quarterly Key Data Report, Q1 2019. It should also be noted that the number of LLU lines is in decline in recent quarters (32.5% annual decline as of Q1 2019).

⁵⁹¹ However, ComReg will keep this under review and revisit this analysis and/or adjust any remedies as appropriate should this change materially.

Conclusion on Potential Competition in the LB TI WHQA Market

- 6.58 In paragraphs 6.37 to 6.57 ComReg has considered the extent to which potential competition would, over the period of this market review, be likely to effectively constrain Eircom's behaviour in the LB TI WHQA Market such that it would mitigate Eircom's suggested SMP position in LB TI WHQA Market. Overall, ComReg's view is that absent regulation in this market, it is unlikely that Eircom would be sufficiently constrained by potential competition such that it would prevent Eircom from behaving, to an appreciable extent, independently of competitors, customers and consumers.
- 6.59 ComReg considers that alternative independent network operators would be unlikely to enter the LB TI WHQA Market over the period of this review given the declining demand. As such, ComReg considers that existing alternative independent network operators would be unlikely to exert a sufficient competitive constraint on Eircom in the LB TI WHQA Market.

Countervailing Buyer Power

- 6.60 Below, ComReg considers whether bargaining power on the buyer side of the LB TI WHQA Market is likely to impose a sufficiently effective competitive constraint on Eircom, such that it would credibly offset Eircom's suggested power to behave, to an appreciable extent, independently of competitors, customers and ultimately consumers.
- 6.61 In so doing, ComReg examines whether sufficient countervailing buyer power ('CBP')⁵⁹² exists such that it results in Eircom not being able to sustain LB TI WHQA prices that are above the competitive level, i.e. the effective exercise of CBP is one which results in such WHQA prices being constrained to the levels that would be achieved in a competitive market outcome.

Overview of Framework for CBP Assessment

- 6.62 Below ComReg sets out the framework for the CBP assessment.

⁵⁹² The existence of some level of CBP would not, in itself, be sufficient. Rather, it must be sufficiently strong such that it results in WHQA pricing being prevented from rising above a level that would pertain in a competitive market outcome.

Necessary Conditions for Effective CBP

- 6.63 The effectiveness of CBP is likely to be significantly dependent on the strength of the bargaining power of the purchaser in its WHQA negotiations. The European Commission's 2009 enforcement priorities in applying Article 102 of the Treaty of the Functioning of the European Union to abusive exclusionary conduct by dominant Undertakings⁵⁹³ (the '2009 Enforcement Priorities') are informative on the issue of CBP in competition assessments. These state⁵⁹⁴ that:

“Competitive constraints may be exerted not only by actual or potential competitors but also by customers. Even an Undertaking with a high market share may not be able to act to an appreciable extent independently of customers with sufficient bargaining strength. Such countervailing buying power may result from the customers' size or their commercial significance for the dominant Undertaking, and their ability to switch quickly to competing suppliers, to promote new entry or to vertically integrate, and to credibly threaten to do so. If countervailing power is of a sufficient magnitude, it may deter or defeat an attempt by the Undertaking to profitably increase prices. Buyer power may not, however, be considered a sufficiently effective constraint if it only ensures that a particular or limited segment of customers is shielded from the market power of the dominant Undertaking.”

- 6.64 In its Horizontal Mergers Guidelines⁵⁹⁵, the European Commission also notes that:

“Countervailing buyer power should be understood as the bargaining strength that the buyer has vis-à-vis the seller in commercial negotiations due to its size, its commercial significance to the seller and its ability to switch to alternative suppliers.”

- 6.65 In light of the above, it is ComReg's view that effective CBP results from buyers/customers that:

⁵⁹³ Communication from the Commission — Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant Undertakings (2009/C 45/02). Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:045:0007:0020:EN:PDF>.

⁵⁹⁴ Paragraph 18 of the 2009 Enforcement Priorities.

⁵⁹⁵ European Commissions “Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between Undertakings”, [Official Journal C 31, 05.02.2004](#), para 64, (the ‘Horizontal Mergers Guidelines’).

- (a) Account for a significant proportion of the supplier's total output;
- (b) Are well-informed about credible alternative sources of supply; and
- (c) Are able to switch to other suppliers at little cost to themselves, or to self-supply the relevant product relatively quickly and without incurring substantial sunk costs.

6.66 It is also of note that effective CBP is that which has a broader market impact and not that which only results in a limited segment of customers benefiting from better terms and conditions.

Impact of Regulation on CBP Assessment

6.67 In carrying out an assessment of CBP it is also necessary to consider the impact of existing or future potential regulation and, in this regard, ComReg sets out its approach to the treatment of:

- (a) existing SMP regulation in the Relevant WHQA Markets, being the markets within which prospective SMP is now being assessed; and
- (b) existing SMP regulation in markets other than the Relevant WHQA Markets.

Existing SMP Regulation

6.68 Insofar as existing SMP regulation in the Relevant WHQA Markets is concerned, ComReg has already noted that throughout this analysis it adopts the European Commission's Modified Greenfield Approach,⁵⁹⁶ whereby SMP regulation in the market under consideration is discounted when considering the prospective SMP analysis of the Relevant WHQA Markets.

⁵⁹⁶ See paragraph 5.15 of this Decision.

6.69 In the context of the assessment of the existence of any effective CBP, ComReg considers the potential bargaining outcomes in the absence of Eircom having been designated with SMP (or being potentially designated with SMP) and absent SMP obligations being imposed on it. This is to avoid drawing conclusions regarding the competitive structure of a particular market which may be influenced by, or indeed premised on, existing or potential regulation on that market. Considering how the Relevant WHQA Markets may function absent regulation helps to ensure that regulation is only applied (or withdrawn) in those circumstances where it is truly justified and proportionate. To do otherwise could result in a circularity of argument whereby, for example, the LB TI WHQA Market is found to be effectively competitive (or not) only by virtue of constraints arising from existing or potential SMP obligations. Once found then to be effectively competitive, SMP obligations would be withdrawn in the LB TI WHQA Market, thereby undermining the original finding of effective competition within those markets.

SMP Regulation in markets other than the Relevant WHQA Markets

6.70 The bargaining position of an Undertaking with SMP obligations in markets other than the LB TI WHQA Market is likely to be somewhat weakened in any negotiations regarding WHQA. In this respect, Eircom is designated with having SMP in a number of regulated markets⁵⁹⁷ and has SMP obligations imposed upon it in these markets.

6.71 As a consequence, this somewhat weakens its bargaining position insofar as it limits the credibility of, for example, threats of increased wholesale prices in those markets – but not the credibility of threats of price increases in the LB TI WHQA Market.

6.72 In light of the above, it is ComReg's view that Eircom's LB TI WHQA customers' positions in these markets in the presence of regulation is not likely to strengthen its bargaining power in its negotiations with SPs, in particular, given that its SMP position in such markets undermines the credibility of any threat to retaliate by, for example, imposing price increases or denying access to wholesale services provided in these markets.

CBP Assessment in the LB TI WHQA Market

6.73 As noted in paragraph 6.65, the circumstances where CBP might be observed to act as an effective competitive constraint are where buyers/customers:

⁵⁹⁷ This includes Retail Access to the Public Telephone Network at a Fixed Location, Fixed Voice Call Termination ('**FVCT**'), Fixed Access and Call Origination ('**FACO**'), Mobile Voice Call Termination ('**MVCT**') (through Eircom group Mobile), Wholesale Central Access ('**WCA**') Market, and Wholesale Local Access ('**WLA**').

- (a) account for a significant proportion of the supplier's total output;
- (b) are well-informed about credible alternative sources of supply; and
- (c) are able to switch to other suppliers at little cost to themselves, or to self-supply the relevant product relatively quickly and without incurring substantial sunk costs.

6.74 The above factors are considered below (note that (b) and (c) are considered together), along with any evidence of effective CBP being exercised in negotiations between Eircom and Access Seekers.

Size of the Buyer and its Relative Importance to the Seller

6.75 The strength of CBP can be influenced by the relative size of the buyer, with this being measured according to the buyer's share of relevant WHQA LLs purchased from the SP (in this case, Eircom) relative to total purchases of WHQA LLs from the same SP. The degree to which high shares of WHQA purchases are concentrated amongst one or more buyers could also be relevant.

6.76 In the LB TI WHQA Market Eircom's retail business with a [3< ██████████]⁵⁹⁸ market share of LB TI LL purchases is, by a significant margin, the largest purchaser. BT has a [3< ██████████]⁵⁹⁹ market share of overall LB TI WHQA sales and is the largest third-party purchaser of LB TI WHQA products from Eircom. The remaining shares of WHQA purchases are split amongst a number of smaller Access Seekers (in terms of purchases).

6.77 Therefore, while one Access Seeker represents a relatively sizeable proportion of Eircom's LB TI WHQA sales, Eircom is a vertically integrated SP that earns most of its revenue from supplying retail services. Eircom is not, therefore, solely reliant on LB TI WHQA revenues. Indeed, absent regulation, it is ComReg's view that LB TI WHQA Access Seekers' subscribers would likely purchase retail services from Eircom. Assuming that Eircom's retail division is profitable, then Eircom would be likely to increase its profitability and revenue by gaining a retail customer at the expense of LB TI WHQA revenue.

⁵⁹⁸ Between 70% and 80%.

⁵⁹⁹ Between 10% and 20%.

- 6.78 Having regard to the above, ComReg's view is that while, BT is the largest external purchaser of LB TI WHQA from Eircom, this is not likely to strengthen its bargaining position as any dependency by Eircom on wholesale revenues earned from BT could be largely converted by Eircom to retail revenues through foreclosing access to BT to the LB TI WHQA inputs and so gaining the retail demand currently being met by BT.

Credible Alternative Sources of Supply

- 6.79 As noted in paragraph 6.19, Eircom is the largest supplier of LB TI WHQA and Access Seekers purchasing such products have limited options for switching to another supplier⁶⁰⁰. In this respect, we note that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]]. As noted previously, Eircom's competitors in MI WHQA Markets are unlikely to enter the LB TI WHQA Market given that the majority of new orders is for MI LLs. Thus, ComReg has set out its view above that effective potential competition in the LB TI WHQA Market is not likely to emerge within the period of this market review.
- 6.80 Access Seekers therefore, rely on Eircom's LB TI WHQA services to provide retail services to their customers, and in the absence of regulation, are unlikely to be in a position to credibly threaten to respond to changes in Eircom's commercial terms and conditions by seeking an alternative source of supply. As discussed throughout this Section, in response to a WHQA price increase by Eircom, barriers to entry would be likely to inhibit Access Seekers from switching to self-supplied LB TI WHQA LLs in response.

⁶⁰⁰ Given [REDACTED] are the largest consumers of Eircom's LB TI WHQA products and that these are relatively large organisations having significant experience of operating within electronic communications markets, they are likely to be reasonably well informed about alternative sources of supply, were they to exist.

Evidence of bargaining power from operator negotiations

- 6.81 ComReg has considered whether effective CBP being exercised is evident from bargaining in WHQA negotiations between Eircom on the one hand and Access Seekers on the other. In this respect, in paragraphs 6.22 to 6.25 ComReg examined Eircom's LB TI WHQA pricing behaviour and set out its view that there is no firm behavioural evidence to suggest that Eircom is facing effective pricing constraints in the provision of LB TI WHQA services. This also suggests that effective CBP has not been or is likely to be a relevant factor in constraining Eircom's behaviour in the LB TI WHQA Market.
- 6.82 ComReg also notes that as part of the assessment of CBP, ComReg sought the views of SPs currently supplying LL services in Ireland as to whether their wholesale customers are able to meaningfully influence the price, quality, and other conditions of supply of their WHQA services.
- 6.83 In general, Respondents noted that larger wholesale customers tend to negotiate with suppliers of WHQA services on prices and SLAs. For example, SPs may apply volume based discounts in some instances. However, ComReg notes that this was primarily in relation to MI WHQA LLs and not relevant to TI WHQA LLs.

Conclusion on CBP Assessment in LB TI WHQA Market

- 6.84 Having regard to the analysis in paragraphs 6.60 to 6.83 above, ComReg's position is that it is unlikely that Eircom would be sufficiently constrained by CBP such that it would prevent it from behaving, to an appreciable extent, independently of competitors, customers and consumers.

Overall Conclusions on Competition in the LB TI WHQA Market

- 6.85 In paragraphs 6.73 to 6.84 above, ComReg has considered a number of factors to identify whether any Undertaking enjoys a position of SMP in the LB TI WHQA Market. These factors have included:
- (a) existing competition in the LB TI WHQA Market;
 - (b) potential competition in the LB TI WHQA Market; and
 - (c) the strength of any CPB;
- 6.86 Having considered these factors, ComReg's position is that Eircom has SMP in the LB TI WHQA Market.

6.4 SMP Assessment in the HB TI WHQA Market

- 6.87 In assessing competition in the HB TI WHQA Market, ComReg adopts the same analytical framework as outlined above for the LB TI WHQA Market. ComReg first looks at market shares (and other factors) to assess existing competition, which indicates that Eircom does not have a high share of this market. ComReg then examines the impact of the rapidly decreasing size of the market on potential competition and CBP before concluding the Eircom is unlikely to have SMP in this market.
- 6.88 2 Respondents to the 2018 Further Consultation (BT and Vodafone), agreed with ComReg's assessment that no operator has SMP in the HB TI WHQA Market. One Respondent (Verizon) disagreed with ComReg's assessment. The remaining 3 Respondents made no comment on the 2018 SMP assessment. The Respondent's views, and ComReg's assessment of these views are outlined in Annex 1, Section A.1.6.2.

Existing Competition in the HB TI WHQA Market

Market shares in the HB TI WHQA Market

- 6.89 Before examining market shares it is worth noting that the total number of LLs in this market at the end of 2018 is low in comparison to the LB TI WHQA Market and the MI WHQA Markets. The number of circuits has fallen from [§< █████]⁶⁰¹ in 2015 to [§< █████]⁶⁰² in 2018 (a decline of 53.05%). This decline is likely to be due, in part, to End-Users migrating over time to MI WHQA services. Moreover, ComReg notes that there is almost no new demand for HB TI WHQA LLs with only [§< █████]⁶⁰³ circuits ordered from [§< █████] in 2018. These HB TI WHQA volumes suggest that this market is in terminal decline and it is highly questionable whether it is a market that is likely to be capable of or worthy of monopolisation (given, for example, any extra profits through attempted monopolisation are likely to be relatively low).

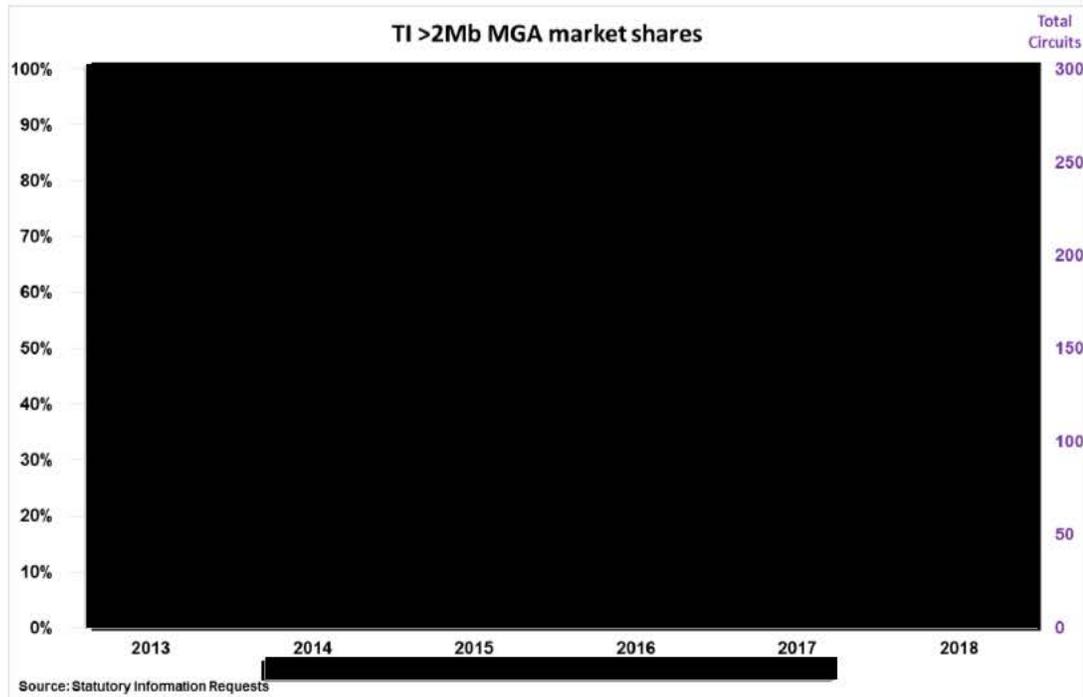
⁶⁰¹ The number is less than 225.

⁶⁰² The number is less than 150.

⁶⁰³ The number is less than 10.

6.90 Nevertheless, Figure 71 shows the hypothetical market shares absent regulation⁶⁰⁴ in the HB TI WHQA Market for the period 2013 to 2018. It illustrates that BT is the largest provider of services in this market with a market share of [\geq REDACTED] ⁶⁰⁵ as of 2018. Eircom’s hypothetical market share at the end of 2018 was [\geq REDACTED] ⁶⁰⁶ having declined by [\geq REDACTED] since 2013.

Figure 71: Hypothetical Market Shares – HB TI WHQA Market [\geq REDACTED]



6.91 Although an SP’s market share exceeds 50%, the HB TI WHQA Market is in decline and is unlikely to be worthy of monopolisation given the continuing decline for HB TI LLs, the small relative size of the market, and a degree of asymmetric substitution between this market and the MI WHQA Markets.

6.92 Given the low and declining volumes in this market, and the fact that suitable cheaper alternatives are available, ComReg is of the view that even based on an assessment of existing competition, no SP is likely to have SMP and that continued regulation of this market is not proportionate or justified.

⁶⁰⁴ Hypothetical shares absent regulation refers to the On-net supply at both the retail and wholesale level.

⁶⁰⁵ Over 50%.

⁶⁰⁶ Less than 25%.

Potential Competition in the HB TI WHQA Market

6.93 Given the decline in the HB TI WHQA Market noted above, ComReg does not consider that there will be any potential competition in this market. It is more likely than not that over the period covered by this review that volumes will decline further thereby undermining any potential entry and investment by SPs in this market.

CBP Assessment in the HB TI WHQA Market

6.94 Given the decline in the HB TI WHQA Market noted above, ComReg does not consider that a CBP assessment could meaningfully be employed in the analysis.

Overall Conclusions on Significant Market Power in the HB TI WHQA Market

6.95 In paragraphs 6.87 to 6.94 above, ComReg has considered a number of factors to identify whether any Undertaking enjoys a position of SMP in the HB TI WHQA Market. These factors have included:

- (a) existing competition in the HB TI WHQA Market;
- (b) potential competition in HB TI WHQA Market;
- (c) the strength of any CPB; and
- (d) that this market is in terminal decline and that it is not likely to be capable of or worthy of monopolisation.

6.96 ComReg's view is that no SP is likely to have SMP in the HB TI WHQA Market.

6.5 SMP Assessment in the Area 1 MI WHQA Market

6.97 In this Section ComReg presents its views on the assessment of competition and SMP in the Area 1 MI WHQA Market.

6.98 ComReg examines in particular:

- (a) existing competition in the Area 1 MI WHQA Market (discussed in paragraphs 6.101 to 6.118 below);
- (b) potential competition in the Area 1 MI WHQA Market (discussed in paragraphs 6.119 to 6.122 below); and
- (c) CBP in the Area 1 MI WHQA Market (discussed in paragraphs 6.123 to 6.129 below).

6.99 The conditions of competition of WPZs in Area 1 are defined in paragraph 5.337.

- 6.100 Below ComReg considers the conditions of competition in the Area 1 MI WHQA Market. ComReg's position is that the evidence on existing competition, potential competition, and CBP suggests that it is unlikely that any SP has SMP in the Area 1 MI WHQA Market and that this is likely to remain the case over the lifetime of this market review.

Existing competition

- 6.101 Below ComReg examines factors such as market shares, vertical integration, the relative strength of existing competitors, barriers to expansion, indirect constraints, and pricing behaviour.

Market shares in the Area 1 MI WHQA Market

- 6.102 As noted in Section 5⁶⁰⁷ above, ComReg's market share estimation in the MI WHQA Market(s) is based on the count of premises connected to SPs' wired networks and being supplied with services based on wired MI WHQA products. Insofar as the self-supply to retail arms of vertically integrated WHQA SPs, ComReg maintains the approach adopted in the 2016 Consultation and 2018 Further Consultation and includes the contestable self-supply in market share estimations.⁶⁰⁸
- 6.103 Market shares are presented in Figure 72 and Table 11 below, and show the hypothetical (absent regulation) market shares for premises connected with wired MI WHQA products at the end of Q4 for each of the years 2016-2018⁶⁰⁹. ComReg estimates that there are a total of 4,938 such connected premises, representing just over 58% of the connected premises in the relevant MI WHQA Markets. It illustrates that Eircom has the largest market share in the Area 1 MI WHQA Market, at [redacted]⁶¹⁰.

⁶⁰⁷ Figure 62 and Figure 64.

⁶⁰⁸ Eircom's self-supply Eir Mobile, as well as MNOs supply of LL connectivity to their own mobile operations is excluded from market share estimations as such supply is considered to be captive. See paragraph 5.31 for more details.

⁶⁰⁹ Information in relation to connected premises was not collected in SIRs in a specific format prior to 2017 SIRs. Thus, information on the evolution of market shares in terms of connected premises is not available before Q4 2016.

⁶¹⁰ Between 30% and 40%.

- 6.104 Table 11 also illustrates that two other SPs hold market shares above 10%, namely enet⁶¹¹ [§< █████]⁶¹² and BT [§< █████]⁶¹³.
- 6.105 In ComReg’s view, Eircom’s market share, along the market shares spread across other SP’s is suggestive of no SP having SMP. In 2018 the HHI for Area 1 was 2,131, which falls within the range of a moderately concentrated market (1,500 to 2,500). However, this needs to be considered alongside the other factors considered below.

Figure 72: Hypothetical⁶¹⁴ Market Shares (Connected Premises) – Area 1 MI WHQA Market [§< REDACTED]

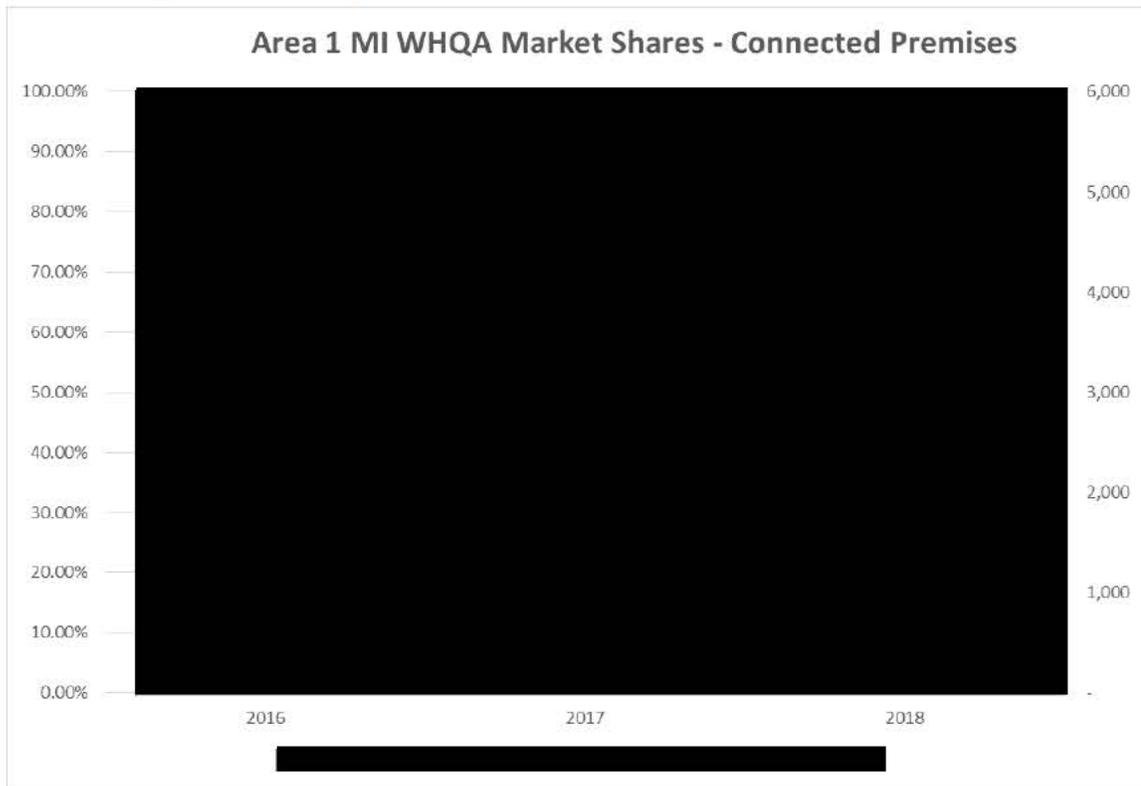


Table 11: Area 1 MI WHQA Market Shares 2018 [§< PARTIALLY REDACTED]

Service Providers	2016	2017	2018
Eircom	[§< █████]	[§< █████]	[§< █████]
enet	[§< █████]	[§< █████]	[§< █████]
BT	[§< █████]	[§< █████]	[§< █████]

⁶¹¹ ComReg notes that enet’s market share includes, Airspeed’s wired market share.

⁶¹² Between 10% and 20%.

⁶¹³ Between 10% and 20%.

⁶¹⁴ Absent regulation.

Virgin Media	[<]	[<]	[<]
Colt	[<]	[<]	[<]
Others	[<]	[<]	[<]
Total Connected Premises	4,156	4,493	4,950

- 6.106 Furthermore, as all these SPs are active in the MI WHQA Markets, this suggests that, absent Eircom, other SPs can purchase MI WHQA services over a wide coverage area, albeit potentially from multiple alternative networks.
- 6.107 The strength of Eircom's competitors is also evidenced by the relatively low Access Seeker dependency on Eircom for MI WHQA LL inputs for the provision of retail and/or wholesale MI LL services in the Area 1 MI WHQA Market. In this regard ComReg notes that overall, [<]⁶¹⁵ of premises connected by alternative SPs in the Area 1 MI WHQA Market were connected using Eircom's MI WHQA inputs.

Consideration of other factors relevant to existing competition in the Area 1 MI WHQA Market

- 6.108 Other factors considered by ComReg include vertical integration, relative strength of existing competitors, barriers to expansion, indirect constraints, and pricing behaviour.

Vertical Integration

- 6.109 The consideration of vertical integration is set out above. In relation to the Area 1 MI WHQA Market, there are many vertically integrated SPs operating at both the wholesale and retail level. Thus, existing competitors have already entered retail and wholesale markets to pose a degree of competitive constraint on Eircom (and each other). As such, it is ComReg's position that no SP is in a position where it is likely to be able to materially leverage its vertically integrated position to the detriment of competition in the Area 1 MI WHQA Market.

⁶¹⁵ Between 20% and 30%. Source: 2019 Tera Report

Strength of Existing Competitors

- 6.110 As set out in Table 11 above, there are three SPs with market shares of over 10% and no SP has a market share in excess of 40%. As such, it is ComReg's view that no SP enjoys a market position that is strong enough not to be competitively constrained by its rivals. Furthermore, the HHI (an index which measures the degree of market concentration) for the Area 1 MI WHQA Market is 2,128 which is indicative of a moderately concentrated market.⁶¹⁶

Barriers to Expansion

- 6.111 ComReg considers Barriers to Expansion alongside Barriers to Entry in the context of potential competition in paragraph 6.121 below.

Indirect Constraints

- 6.112 As noted in paragraph 6.106 above, most SPs which self-supply retail MI LLs also supply MI WHQA services to Access Seekers. ComReg considered indirect constraints in Section 5⁶¹⁷ and noted that nearly all retail LL SPs that use their own network inputs to provide those retail services are also active in the supply of MI WHQA LLs. ComReg is of the view that indirect constraints are not a relevant consideration in defining the relevant WHQA market as they have been already accounted for in the context of the assessment of direct constraints.
- 6.113 As such, indirect constraints are not a materially relevant consideration for the SMP assessment in the Area 1 MI WHQA Market.

⁶¹⁶ The Herfindahl-Hirschman Index ('**HHI**') takes into account the relative size distribution of the firms in a market. It approaches zero when a market is occupied by a large number of firms of relatively equal size and reaches its maximum of 10,000 points when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. Market concentrations based on HHIs are classified as follows: (a) un-concentrated Markets: HHI below 1,500; (b) Moderately Concentrated Markets: HHI between 1,500 and 2,500; and (c) Highly Concentrated Markets: HHI above 2,500

⁶¹⁷ See Paragraph 5.172

Pricing Behaviour

- 6.114 The development and extent of competition in a market over time may be evident in the pricing of WHQA products, services and facilities. In an SMP assessment, the ability of an SP to behave, to an appreciable extent, independently of the pricing behaviour of its competitors may be suggestive (but not determinative in itself) of SMP when considered alongside other factors.
- 6.115 In this regard, ComReg's interviews with End-Users of LLs highlighted interviewees' perception of decreasing retail MI LL prices with 10 out of 17 interviewees noting that they were able to obtain better/cheaper deals from SPs (e.g. higher bandwidth for the same price). Furthermore, in the 2016 Consultation, ComReg noted that several SPs were of the view that WHQA products pricing was competitive⁶¹⁸. SPs made no further significant comment on WHQA pricing in response to the 2016 Consultation or 2018 Further Consultation. Overall, the fact that Area 1 contains the majority of customers, by connected premises, and has at least 3 networks in the vast majority of workplace zones makes it more likely that competition on price will occur.

Overall views on Existing Competition in the Area 1 MI WHQA Market

- 6.116 The analysis above suggests that there is relatively strong existing competition within the Area 1 MI WHQA Market. As evidenced by the presence of independent networks, barriers to entry, since the 2008 Decision, appear to have been largely overcome.
- 6.117 Furthermore, the relatively low reliance on Eircom for the provision of both MI WHQA and MI retail LL services and the extensive coverage of alternative wired networks suggests that there is increased independent infrastructure based competition at the wholesale level (and consequently at the retail level). The widespread use of enet's MANs indicates that such infrastructure based competition is not solely confined to cities, but is widespread throughout the towns where MANs are situated⁶¹⁹.
- 6.118 As such, it is ComReg's view that relative strength of existing competition is suggestive that no SP has SMP in the Area 1 MI WHQA Market.

⁶¹⁸ See paragraphs 6.127 of the 2016 Consultation.

⁶¹⁹ For further discussion on the treatment of of enet's MANs see paragraphs 5.254 to 5.256

Potential Competition in the Area 1 MI WHQA Market

- 6.119 Potential competition in the Area 1 MI WHQA Market is assessed having regard to factors such as control of infrastructure not easily duplicated, barriers to entry and expansion, as well as considering the overall strength of potential competitors.
- 6.120 Noting the presence of competitive constraints posed by existing competition, ComReg now assesses the likely effectiveness of any constraints likely to be posed by potential competition in the Area 1 MI WHQA Market.
- 6.121 ComReg is of the view that barriers to entry have been largely overcome as evidenced from the existing infrastructure based competition. The delineation of the Area 1 MI WHQA Market is partly based on the presence of rival network infrastructure. Additionally, the market shares presented in Table 11 above indicate that the Area 1 MI WHQA Market has a number of strong competitors operating within it.
- 6.122 Moreover, as ComReg must take a forward looking view of competition in this assessment, it considers that the prospects for competition in the Area 1 MI WHQA Market is favourable having regard to the trend to date of increasing SP network presence (although this is not necessarily uniform). ComReg notes that as the roll-out of the SIRO network advances, the Area 1 MI WHQA Market should, to the extent it can be utilised to provide MI WHQA LLs, further strengthen the presence of increased independent infrastructure based competition within this market.

CBP Assessment in the Area 1 MI WHQA Market

- 6.123 Strong buyers of MI WHQA products may also impact the competitive behaviour of SPs supplying MI WHQA. In assessing CBP in the Area 1 MI WHQA Market, ComReg adopts the same framework set out in paragraphs 6.60 to 6.72 with respect to the LB TI WHQA Market.
- 6.124 However, it should be noted from the outset that CBP is used to ascertain if strong buyers may provide a sufficient competitive constraint on an SP who, otherwise, may be considered to have SMP. In such instances, a SP with a high market share may not be able to act independently of its competitors, customers and ultimately consumers, if its buyers have sufficiently effective CBP.
- 6.125 In general, purchasers in WHQA markets may have a degree of buyer power where they purchase large volumes and have a credible threat to switch to an alternative supplier, or to meet requirements through self-supply. In order for the threat to be effective, the volumes that are or can credibly be met from another source of supply need to have a material impact on the supplier's profitability.

- 6.126 In the case of the Area 1 MI WHQA Market, the delineation of its geographic scope was predicated – in part – on the presence of alternative networks that could readily act as an alternative source of supply to the majority of current and potential demand in a WPZ. As such, there are a number of possible suppliers of MI WHQA services, such that the threat of switching supply is more likely to be credible.

Size of the Buyer and its Relative Importance to the Seller

- 6.127 The strength of CBP can be influenced by the relative size of the buyer, with this being measured according to the buyer's share of relevant retail MI WHQA LLs purchased from the SP relative to total purchases of all WHQA LLs from the same SP. The degree to which high shares of WHQA purchases are concentrated amongst one or more buyers could also be relevant. However, based on the information supplied in response to the SIRs and the Qualitative Questionnaire ComReg is not aware of any retail MI LL SP having a high reliance on a particular MI WHQA provider in the Area 1 MI WHQA Market.

Credible Alternative Sources of Supply

- 6.128 As set out in paragraphs 6.102 to 6.107 above, ComReg is of the view that there are a number of SPs with their own independent infrastructure competing in the Area 1 MI WHQA Market. This suggests that, in many cases, Access Seekers can credibly threaten to respond to changes in commercial terms and conditions associated with the purchase of MI WHQA products by seeking an alternative source of supply.

Conclusion on CBP Assessment in the Area 1 MI WHQA Market

- 6.129 Having regard to the analysis in paragraphs 6.123 to 6.128 above, ComReg's view is that there is likely to be sufficient credible alternative sources of supply that no SP is in a position to effectively act independently of its customers in the Area 1 MI WHQA Market.

Overall Conclusions on Competition in the Area 1 MI WHQA Market

- 6.130 In paragraphs 6.97 to 6.129 above, ComReg has assessed existing competition, potential competition and CBP in the Area 1 MI WHQA Market. Having regard to the evidence available to this analysis, it is ComReg's overall view that no SP is likely to have SMP in the Area 1 MI WHQA Market.
- 6.131 This is due, amongst other things, to market shares being distributed across a number of SPs with no SP having a market share in excess of 40% and the evidence of multiple SPs competing (and likely to continue to compete) on the basis of independent infrastructure and the extensive coverage of alternative wired networks.

6.6 SMP Assessment in the Area 2 MI WHQA Market

- 6.132 In this Section ComReg presents its views on the assessment of competition and SMP in the Area 2 MI WHQA Market.
- 6.133 ComReg examines in particular:
- (a) existing competition in the Area 2 MI WHQA Market (discussed in paragraphs 6.136 to 6.154 below);
 - (b) potential competition in the Area 2 MI WHQA Market (discussed in paragraphs 6.155 to 6.174 below); and
 - (c) CBP in the Area 2 MI WHQA Market (discussed in paragraphs 6.175 to 6.187 below).
- 6.134 It is worth recalling at the outset, that having regard to the definition of Area 2 MI WHQA Market, it means that WPZs within this market fail to pass the 75% threshold of Connected Premises being within 50 metres of 2 ANs.
- 6.135 ComReg is of the view that the evidence on existing and potential competition suggests that over the lifetime of this market review, Eircom has SMP in the Area 2 MI WHQA Market.

Existing Competition in the Area 2 MI WHQA Market

- 6.136 Below ComReg examines factors such as market shares, vertical integration, the relative strength of existing competitors, barriers to expansion, indirect constraints, and pricing behaviour.
- 6.137 However, from the outset, it should be noted that the delineation of the relevant MI WHQA markets is predicated, in part, on the existence of ANs capable of readily supplying MI WHQA services to the majority of demand in the associated WPZs. In terms of the Area 2 MI WHQA Market, ComReg is of the view that barriers to entry have not been overcome as this market consists of WPZs where there are less than two alternative sources (other than Eircom) of MI WHQA supply.

Market shares in the Area 2 MI WHQA Market

6.138 Market shares presented in Figure 73 and Table 12 below show the hypothetical (absent regulation) market shares for premises connected with wired MI WHQA products at the end of Q4 2018. It illustrates that Eircom is the SP with the largest market share in the Area 2 MI WHQA Market, at [3< ██████████]⁶²⁰ with this being stable over time⁶²¹.

Figure 73: Area 2 MI WHQA Market Shares 2018 [3< ██████████]



Table 12: Area 2 MI WHQA Market Shares 2016-2018 [3< PARTIALLY REDACTED]

Service Providers	2016	2017	2018
Eircom	[3< ██████]	[3< ██████]	[3< ██████]
enet	[3< ██████]	[3< ██████]	[3< ██████]

⁶²⁰ Between 60% to 70%.

⁶²¹ More than 60%. ComReg notes that Eircom’s market share includes enet’s connected premises in towns where MANs have Eircom as the only viable supplier of backhaul services to them. ComReg applies the assumption that, absent regulation in the Area 1 MI WHQA Market, all of enet’s customers in these areas would revert to Eircom for the purchase of MI WHQA products given the likely lack of viable alternatives. It should also be noted that Eircom’s market share is [3< ██████████] even without the attribution to it of enet’s connected premises on the relevant MANS.

Vodafone	[<]	[<]	[<]
Virgin Media	[<]	[<]	[<]
BT	[<]	[<]	[<]
Others	[<]	[<]	[<]
Total Connected Premises	2,623	2,848	3,523

- 6.139 Table 12 above also illustrates that no other SP holds market shares above 20% with enet⁶²² [<]⁶²³, Vodafone [<]⁶²⁴ and Virgin Media [<]⁶²⁵ being the largest competitors to Eircom in the Area 2 MI WHQA Market. Thus, market share evidence indicates that Eircom has a high and stable market share. In 2018 the HHI for Area 2 was 4,510, which falls within the range of a highly concentrated market (above 2,500).
- 6.140 Furthermore, ComReg notes the relatively high dependency by SPs on Eircom's MI WHQA LL inputs for the provision of retail and/or wholesale LL services in the Area 2 MI WHQA Market. In this regard ComReg notes that overall, [<]⁶²⁶ of premises connected by alternative SPs in this market were connected using Eircom's WHQA inputs.

Other factors relevant to existing competition in the Area 2 MI WHQA Market

- 6.141 Other factors considered by ComReg include vertical integration, relative strength of existing competitors, barriers to expansion, indirect constraints, and pricing behaviour.

⁶²² ComReg notes that enet's market share includes Airspeed's wired market share.

⁶²³ Between 10% and 20%.

⁶²⁴ Between 0% and 10%.

⁶²⁵ Between 0% and 10%.

⁶²⁶ Between 50% and 60%.

Vertical Integration

- 6.142 The concept of vertical integration is set out in above. In relation to the Area 2 MI WHQA Market, there are fewer vertically integrated SPs operating at both the wholesale and retail level than in the Area 1 MI WHQA Market. However, due to the limited reach of their networks, existing vertically integrated competitors to Eircom are not likely to impose a sufficiently effective competitive constraint on Eircom in the Area 2 MI WHQA Market (having regard to the fact that there are considerably less ANs within 50m of Connected Premises that are capable of providing MI WHQA Services to 75% of such premises). In contrast, as well as being the largest MI WHQA supplier, Eircom is also a significant provider of retail MI LLs and has the ability and incentive to leverage the market power it has in the Area 2 MI WHQA Market into the related MI LL market⁶²⁷.
- 6.143 As such, it is ComReg's view that Eircom's vertically integrated structure could enhance Eircom's suggested SMP position to the detriment of competition in the Area 2 MI WHQA Market or the associated retail MI LL markets.

Strength of Existing Competitors

- 6.144 As can be seen from Table 12 above, Eircom has market share between 60% to 70% in the Area 2 MI WHQA Market while other SPs market shares are in the range 0% to 20%. The HHI for the Area 2 MI WHQA Market is 4,504, which is indicative of a highly concentrated market.
- 6.145 Furthermore, the limited reach of alternative networks and relatively high dependency on Eircom when providing retail/and or wholesale MI LL services in the Area 2 MI WHQA Market suggests that Eircom is unlikely to be effectively constrained in behaving, to an appreciable extent, independently of its competitors.

⁶²⁷ See Section 9 for more details on competition problems below.

Barriers to Expansion

- 6.146 ComReg considers that the existence of sunk costs associated with the network roll-out and the fact that WHQA Market(s) are characterised by economies of scale, scope and density⁶²⁸ are likely to act as significant barriers to expansion for SPs with their own wired networks in this market. In this regard, ComReg notes that the demand for retail MI LLs is relatively limited in the Area 2 MI WHQA Market. This is illustrated by the fact that the Area 2 MI WHQA Market accounts for approximately 416 more WPZs in Area 2 as opposed to Area 1 yet only 42% of connected premises.⁶²⁹ As such, there are relatively higher costs to expansion alongside relatively lower demand in the Area 2 MI WHQA Market.
- 6.147 In ComReg's view, this means that a significant expansion of existing networks into the Area 2 MI WHQA Market will be unlikely to recover the high fixed and sunk costs associated with such a network expansion.
- 6.148 In contrast, Eircom operates a ubiquitous duct/pole/copper/fibre network with significant aspects of these costs likely to be already sunk. A significant portion of the sunk costs that were involved in the initial construction of Eircom's access network are likely to be largely amortised at this point in time, although ongoing investment is necessary. ComReg recognises that Eircom, through its ongoing network upgrade is incurring additional costs. Any competitor expanding its network in the Area 2 MI WHQA Market would, nonetheless, face higher sunk costs than that which is faced by Eircom given its existing network, including the upgrade of it.

Indirect Constraints

- 6.149 As noted in paragraph 6.106 above, all but one SP self-supplying retail MI LLs also supply MI WHQA services to Access Seekers. As such, indirect constraints are not a consideration for either market definition or SMP assessment in the Area 2 MI WHQA Market.

⁶²⁸ Economies of scale, scope and density refer to potential advantages that larger incumbents may enjoy over smaller new entrants. Economies of scale generally refer to the cost advantage which a large-scale operator may have over a smaller operator where the marginal cost of production decreases as the quantity of output produced increases. Economies of scope refer to the potential efficiencies which may be gained by a firm jointly producing a range of goods and services, e.g. where a CATV network or a FTTC network could be used to provide LLs, retail fixed telephony services and broadband services simultaneously. Economies of density refer to potential efficiencies associated with supplying customers who are geographically concentrated.

⁶²⁹ 1,998 WPZs in Area 2 and 1,582 WPZs in Area 1.

External Constraints

- 6.150 In Section 5 ComReg set out its reasoning for excluding dark fibre, business broadband and MI WHQA delivered over P2P radio links from the relevant MI WHQA Markets definition. Overall, the rationale for doing so was because of the weak substitutability between these services and MI WHQA delivered over wired media.
- 6.151 Even though they are external to the relevant MI WHQA markets, ComReg considers that they may act as a weak competitive constraint on a monopolist for some demand in the Area 2 MI WHQA Market. As stated by enet on their website, such services are mainly used where wired solutions are not available.⁶³⁰ However, for the majority of demand, these services are unlikely to act as a sufficiently strong constraint to affect the market power of a monopolist in the Area 2 MI WHQA Market.

Pricing Behaviour

- 6.152 Given the lack of effective existing competition in the Area 2 WHQA Market it is ComReg's view that, absent regulation, Eircom, as a vertically integrated SP, has both the ability and incentive⁶³¹ to increase prices (above the competitive level) offered/charged to Access Seekers for MI WHQA products in the Area 2 MI WHQA Market.

Conclusion on Existing Competition in the Area 2 MI WHQA Market

- 6.153 Having regard to ComReg's assessment in paragraphs 6.132 to 6.152 above, ComReg's position is that, absent regulation in the Area 2 MI WHQA Market, it is unlikely that Eircom would be sufficiently constrained by existing competition such that it would prevent Eircom from behaving, to an appreciable extent, independently of competitors, customers and consumers.

⁶³⁰ "Our ... Licensed Wireless Network provides managed services ... which allows our customers to deliver superfast and secure connectivity to those in typically hard-to-reach areas or deliver services in locations not well served with NGN services." See <https://www.enet.ie/nationwide-wireless-network.html> for details. Also note that Enet do not consider wireless to be substitute for wired services.

⁶³¹ These abilities and incentives are discussed in Section 9 dealing with competition problems in the Zone B MI WHQA Markets.

- 6.154 This is due to Eircom's high market share in a market characterised by limited and lowly concentrated demand for MI LLs and an absence of evidence of barriers to entry having been overcome, which is suggestive of Eircom having SMP in the Area 2 MI WHQA Market. Below, ComReg considers other relevant factors (potential competition and CBP) which may have the effect of diminishing or undermining Eircom's suggested SMP position in the Area 2 MI WHQA Market.

Potential Competition in the Area 2 MI WHQA Market

- 6.155 Noting the absence of an effective competitive constraints posed by existing competition, ComReg now assesses the effectiveness of any constraints likely to be posed by potential competition in the Area 2 MI WHQA Market.
- 6.156 This assessment considers whether potential entry (and expansion) in the Area 2 MI WHQA Market is sufficiently likely, timely, and credible to such an extent that it would effectively constrain Eircom's ability to act independently of its competitors, customers and consumers over the medium term⁶³².
- 6.157 In considering constraints posed by potential competition, ComReg first examines the barriers to entry and expansion insofar as they may impact upon the effectiveness of the constraints posed by potential competitors. Then, ComReg assesses the strength of any such potential competition having regard to the barriers to entry and expansion that have been identified.

Barriers to Entry and Expansion

- 6.158 In assessing the likelihood of potential competition to act as an effective constraint on Eircom over the period of this market review, ComReg has examined the nature and extent of any barriers to firms both entering and/or subsequently expanding in the Area 2 MI WHQA Market.
- 6.159 Assessing the barriers to entry and expansion involves initially identifying what represents credible entry into the Area 2 MI WHQA Market. In order to provide an effective competitive constraint, a potential entrant must provide a product that at least meets the characteristics of the MI WHQA products, services and facilities set out in Section 5 (thereby meeting the expectations of Access Seekers).

⁶³² See paragraph 61 of the European Commission's SMP Guidelines.

The demand for MI WHQA products is limited and spread throughout the Area 2 MI WHQA Market

6.160 Barriers to entry and expansion were already considered when assessing the strength of Eircom's existing competitors in paragraphs 6.144 to 6.159 above. In particular, it was noted that the demand for retail MI LLs is relatively limited and spread throughout the Area 2 MI WHQA Market and thus, SPs of MI WHQA services would be unlikely, within the timeframe of this review, to be sufficiently incentivised to significantly expand their existing networks in the Area 2 MI WHQA Market on a large scale basis in order to supply this relatively sparse demand.

Building an Independent Network to provide MI WHQA products in the Area 2 MI WHQA Market

6.161 ComReg has considered the extent to which potential competition from Greenfield network builds (i.e. completely new build) would be likely to materialise and constrain Eircom's suggested SMP position over the period of this market review.

6.162 As discussed above, there are a number of factors that may act as a barrier to this type of entry occurring in the Area 2 MI WHQA Market:

- (a) There are significant sunk costs that would be incurred when entering the Area 2 MI WHQA Market⁶³³;
- (b) Eircom operates a largely ubiquitous network and has a large customer base and diversified product range. Therefore, Eircom is likely to benefit from significant economies of scale, scope and density⁶³⁴; and
- (c) Eircom benefits from being vertically integrated as it is also a significant provider of retail MI LLs and has the incentive and ability to leverage any SMP in the Area 2 MI WHQA Market to the retail MI LL market⁶³⁵.

⁶³³ See paragraphs 6.146 to 6.148 above.

⁶³⁴ See paragraph 6.105 above.

⁶³⁵ See Section 9 for more details on competition problems.

- 6.163 ComReg notes that the NBP⁶³⁶ rollout is expected to commence sometime within the lifetime of this market review. The NBP fibre access network is more likely to be located in areas that are part of the Area 2 MI WHQA Market (given similar barriers to entry and expansion relating to premises density and network build costs are relevant). To the extent that it is feasible that the NBP network could theoretically be utilised to provide MI WHQA products, it is possible that it may strengthen independent infrastructure based competition in the Area 2 MI WHQA Market to the extent that such roll out involves newly deployed networks⁶³⁷. However, ComReg's view is that given the uncertainty regarding the specific timing associated with the geographic locations of the roll-out of the NBP network, such entry is not likely to act as a sufficient competitive constraint on Eircom in the Area 2 MI WHQA Market within the lifetime of this review. Additionally, the purpose of the NBP initiative is to deliver broadband rather than HQA services. Any such business services would not qualify for state subvention and would require a separate business case by any SP to develop and launch.
- 6.164 Given the presence of barriers to entry discussed in paragraph 6.146 to 6.148 above, ComReg considers that there is unlikely to be any significant new entry in the Area 2 MI WHQA Market in the medium term. Thus, ComReg is of the view that the potential for entry into the Area 2 MI WHQA Market based on a new network build is unlikely to effectively constraint Eircom within the period of this market review.

Expanding an Existing Network coverage to provide MI WHQA products in the Area 2 MI WHQA Market

- 6.165 ComReg has considered the extent to which potential entry in the Area 2 MI WHQA Market by an existing SPs expanding the reach of their networks would be likely to occur and effectively constrain Eircom's suggested SMP position over the period of this market review.

⁶³⁶ The Irish Government has proposed the National Broadband Plan ('NBP'), which will support the provision of broadband access to households and businesses that currently fall outside the reach of existing broadband networks. The purpose of the NBP is to ensure that broadband service with a minimum download speed of 30Mb/s is available nationally. A detailed procurement process is ongoing with a view to commencing construction of a wholesale network that would support the provision of broadband services as well as other services such as voice and multicast (to support TV). It is envisaged that the wholesale network supporting this service could also be leveraged to provide retail LL services.

⁶³⁷ The ability of the NBP network to support MI WHQA services is unclear at this time.

- 6.166 The barriers to entry present in the Area 2 MI WHQA Market may be lessened in part, if a potential entrant has an existing network that is used to provide WHQA and/or other services that could be leveraged to also provide MI WHQA services in Area 2. An example would be a SP which uses some of its own network infrastructure in Area 1 to provide MI LLs to multi-site customers and may expand that network to an Area 2 location to serve that retail customer.
- 6.167 Relative to a 'Greenfield' entrant, an existing vertically integrated SP seeking to enter the Area 2 MI WHQA Market could face reduced sunk costs, particularly those relating to the upfront civil costs involved in building a network. An existing SP also has an existing customer base over which it may, through cross-selling, more easily recover entry costs, and may be better placed to achieve economies of scale, scope, and density relative to a 'new build' Greenfield entrant.
- 6.168 In this regard, ComReg notes the continuing roll-out of the SIRO⁶³⁸ network and continuing plans for the rollout of fibre in rural locations under the NBP. To the extent that these networks can be utilised to provide MI WHQA products, they can potentially strengthen independent infrastructure based competition in the Area 2 MI WHQA Market. However, the existing roll-out plans announced by SIRO indicate that their networks would have a limited coverage (compared to that of Eircom's) in the Area 2 MI WHQA Market.
- 6.169 This factor and the sparse demand for MI LLs by End-Users in the Area 2 MI WHQA Market means that Access Seekers' demand for hypothetical MI WHQA products offered by alternative SPs may be limited.⁶³⁹

⁶³⁸ See <http://siro.ie/> for details.

⁶³⁹ See Annex 4.

Using upstream inputs such as ducts and poles to offer MI WHQA products in the Area 2 MI WHQA Market

- 6.170 ComReg notes that Access Seekers are already using upstream inputs for extending their networks albeit on a limited scale and primarily in the Area 1 MI WHQA Market. For example, [§< ██████████] as well as other Access Seekers are purchasing dark fibre inputs from enet in order to provide LL services to End-Users. Eircom, until recently, had a usage restriction on the access to its ducts and poles whereby, access to these inputs for the purpose of selling LLs was prohibited. In January 2017, Eircom removed this restriction, but ComReg is not aware of any Access Seeker currently using Eircom’s ducts and poles at a material level for their access network extension on a significant scale. ComReg also notes that in its WLA/WCA Decision⁶⁴⁰ (which followed the 2018 Further Consultation), ComReg set out a set of access remedies in the WLA and WCA markets and in particular, enhanced Civil Engineering Infrastructure (‘CEI’)⁶⁴¹ access remedies in the WLA market⁶⁴².
- 6.171 In relation to access to Eircom’s dark fibre, ComReg notes an agreement between [§< ██████████
██████████
██████████ ██████████ ██████████
██████████
██████████ ██████████]. Other Access Seekers currently do not use Eircom’s dark fibre, although in the WLA/WCA Consultation ComReg proposed to enhance obligations governing access to Eircom’s dark fibre in locations where access to ducts and poles is not available and where fibre was reasonably available.

⁶⁴⁰ See “ [Market Review: Wholesale Local Access \(WLA\) provided at a Fixed Location, Wholesale Central Access \(WCA\) provided at a Fixed Location for Mass Market Products, Response to Consultation and Decision, ComReg Document 18/94](#) ”, dated 19 November 2018 (‘WLA/WCA Decision’).

⁶⁴¹ “CEI” or “Civil Engineering Infrastructure” also known as passive access infrastructure means the physical access path facilities deployed by Eircom to host cables such as copper wires, optical fibre and co-axial cables. It includes but is not limited to, subterranean and/or above ground assets such as Sub-Ducts, Ducts, Chambers and Poles.

⁶⁴² See paragraphs 7.511 to 7.516 WLA/WCA Decision.

⁶⁴³ [§< ██████████
██████████]

6.172 Thus, while there is evidence of some upstream inputs usage by Access Seekers to provide MI WHQA services, ComReg is of the view that, over the period of this market review, the extent to which alternative networks expansion using upstream inputs would effectively constrain Eircom's suggested SMP position in the Area 2 MI WHQA Market is likely to be limited. Nevertheless, ComReg recognises the potential for increased take-up of Eircom's regulated WLA products such as ducts and poles over the period of this market review. In this context, ComReg will continue to monitor industry activity with respect to the uptake of upstream inputs for the purpose of providing MI WHQA services and revisit this analysis and/or adjust any remedies as appropriate to reflect any substantial network roll-out in the Area 2 MI WHQA Market.

Conclusion on Potential Competition in the Area 2 MI WHQA Market

6.173 In paragraphs 6.155 to 6.172 above, ComReg has considered the extent to which potential competition would, over the period of this market review, be likely to effectively constrain Eircom's behaviour in the Area 2 MI WHQA Market such that it would mitigate Eircom's suggested SMP position in this market. Overall, ComReg's view is that absent regulation in this market, it is unlikely that Eircom would be sufficiently constrained by potential competition such that it would prevent Eircom from behaving, to an appreciable extent, independently of competitors, customers and consumers.

6.174 ComReg considers it unlikely that alternative network operators would enter or significantly expand their networks in the Area 2 MI WHQA Market over the period of this review given that the demand for retail MI LLs is limited in this market. As such, ComReg considers that existing alternative independent network operators would be unlikely to exert a sufficient competitive constraint on Eircom in the Area 2 MI WHQA Market.

CBP Assessment

6.175 Below, ComReg considers whether bargaining power on the buyer side of the Area 2 MI WHQA Market is likely to impose a sufficiently effective competitive constraint on Eircom, such that it would credibly offset Eircom's suggested power to behave, to an appreciable extent, independently of competitors, customers, and ultimately consumers.

6.176 In so doing, ComReg examines whether sufficient CBP exists such that Eircom would not be able to sustain prices in the Area 2 MI WHQA Market that are above the competitive level, i.e. the effective exercise of CBP is one which results in such Area 2 MI WHQA product prices being constrained to the levels that would be achieved in a competitive market outcome.

- 6.177 The framework for CBP assessment is set out in paragraphs 6.62 to 6.72. In line with this framework, it is ComReg's view that effective CBP results from buyers/customers that:
- (a) Account for a significant proportion of the supplier's total output;
 - (b) Are well-informed about credible alternative sources of supply; and
 - (c) Are able to switch to other suppliers at little cost to themselves, or to self-supply the relevant product relatively quickly and without incurring substantial sunk costs.
- 6.178 The above factors are considered below (note that (b) and (c) are considered together), along with any evidence of effective CBP being exercised in negotiations between Eircom and Access Seekers.

Size of the Buyer and its Relative Importance to the Seller

- 6.179 The strength of CBP can be influenced by the relative size of the buyer, with this being measured according to the buyer's share of MI WHQA purchased from the SP (in this case, Eircom) relative to total purchases of MI WHQA from the same SP. The degree to which high shares of MI WHQA purchases are concentrated amongst one or more buyers could also be relevant.
- 6.180 In the Area 2 MI WHQA Market, Eircom's retail business with a [3< [REDACTED]]⁶⁴⁴ market share of MI LL purchases is the largest purchaser. Other large purchasers of Eircom's MI WHQA products are BT and Vodafone. The remaining shares of WHQA purchases in the Area 2 MI WHQA Market are split amongst a number of smaller Access Seekers (in terms of purchases).
- 6.181 Therefore, while two Access Seekers represent a relatively sizeable proportion of Eircom's MI WHQA sales⁶⁴⁵, Eircom is a vertically integrated SP that also earns revenue from supplying retail services. Eircom is not, therefore, solely reliant on MI WHQA revenues. Indeed, absent regulation, it is ComReg's view that MI WHQA Access Seekers' retail customers would likely purchase retail LL services from Eircom. Assuming that Eircom's retail division is profitable, then Eircom would be likely to increase its profitability and revenue by gaining a retail customer at the expense of MI WHQA revenue.

⁶⁴⁴ Between 20% and 30%.

⁶⁴⁵ [3< [REDACTED]]

6.182 Having regard to the above, ComReg's view is that while, Vodafone and BT are the largest external purchasers of MI WHQA products from Eircom, this is not likely to strengthen their bargaining position as any dependency by Eircom on wholesale revenues earned from BT and Vodafone could be largely converted to retail revenues through foreclosing access to BT and Vodafone to the products in the Area 2 MI WHQA Market and so gaining the retail demand currently being met by these SPs. It should also be noted that such foreclosure could lead to further increased retail revenues for Eircom in the retail MI LL market as Multi-site retail LL customers tend to purchase LL services from the same SP⁶⁴⁶. Overall, the retail LL customers affected are more likely to face higher prices, a reduced quality of service or both as a result of an Eircom outright or constructive refusal to supply MI WHQA products to competitors.

Credible Alternative Sources of Supply

6.183 Above, ComReg noted that Eircom is the largest supplier of MI WHQA services in Area 2. Access Seekers purchasing such products have limited options for switching to another supplier⁶⁴⁷ as highlighted by the limited network reach of alternative wired networks⁶⁴⁸. In this respect, ComReg notes that despite BT (and, to a limited extent, Vodafone) being able to self-supply MI WHQA products they, nonetheless, buy a significant portion of such lines from Eircom, thereby suggesting their own network reach is insufficient to fulfil their downstream demand. As noted previously, Eircom's competitors in the Area 1 MI WHQA Market are unlikely to enter or significantly expand their networks into the Area 2 MI WHQA Market given that the demand for MI LLs is limited and spread throughout this market. Thus, ComReg is of the view that effective potential competition in the Area 2 MI WHQA Market is not likely to emerge within the period of this market review.

⁶⁴⁶ See Figure 16 above.

⁶⁴⁷ Given that BT and Vodafone are the largest consumers of Eircom's MI WHQA products and that these are relatively large organisations having significant experience of operating within electronic communications markets, they are likely to be reasonably well informed about alternative sources of supply, were they to exist.

⁶⁴⁸ See Figure 16 above which highlights that combined reach of alternative networks in terms of Multi-site purchasers of LLs premises is less than 30%.

- 6.184 Access Seekers therefore, are highly reliant on Eircom's MI WHQA services in the Area 2 MI WHQA Market to provide retail LL services to their customers, and, in the absence of regulation, are unlikely to be in a position to credibly threaten to respond to changes in Eircom's commercial terms and conditions by seeking an alternative source of supply. As discussed throughout this Section, in response to a MI WHQA products' price increase by Eircom, barriers to entry would be likely to inhibit Access Seekers from switching to self-supplied MI WHQA LLs.

Evidence of bargaining power from operator negotiations

- 6.185 ComReg has considered whether effective CBP being exercised is evident from bargaining in WHQA negotiations between Eircom on the one hand and Access Seekers on the other. In this respect, in paragraph 6.152 ComReg examined Eircom's MI WHQA pricing behaviour and set out its view that there is no firm behavioural evidence to suggest that Eircom would face effective pricing constraints in the provision of MI WHQA services in the Area 2 MI WHQA Market. This also suggests that effective CBP is not likely to be a relevant factor in constraining Eircom's behaviour in this market.
- 6.186 In paragraph 6.83 ComReg noted SPs' views that Access Seekers tend to negotiate with suppliers of MI WHQA services on prices and SLAs. However, ComReg considers that Access Seekers' bargaining position (having regard to the absence of credible alternative sources of supply) is unlikely to be sufficiently strong such that it would result in MI WHQA pricing being prevented from rising above a level that would pertain in a competitive market outcome in the absence of regulation in the Area 2 MI WHQA Market.

Conclusion on CBP Assessment in the Area 2 MI WHQA Market

- 6.187 Having regard to the analysis in paragraphs 6.175 to 6.186 above, ComReg's view is that it is unlikely that Eircom would be sufficiently constrained by CBP such that it would prevent it from behaving, to an appreciable extent, independently of competitors, customers and consumers.

Overall Conclusion on SMP Assessment on the Area 2 MI WHQA Market

- 6.188 Having considered the lack of existing or potential competition, as well as the absence of sufficiently effective CBP in the Area 2 MI WHQA Market, ComReg is of the view that Eircom has SMP in this market.

6.7 SMP Assessment in the Area 3 MI WHQA Market

- 6.189 In this Section ComReg presents its views on the assessment of competition and SMP in the Area 3 MI WHQA Market.

- 6.190 ComReg examines in particular:
- (a) existing competition in the Area 3 MI WHQA Market (discussed in paragraph 6.194 below);
 - (b) potential competition in the Area 3 MI WHQA Market (discussed in paragraphs 6.195 to 6.196 below); and
 - (c) CBP in the Area 3 MI WHQA Market (discussed in paragraphs 6.197 to 6.198 below).
- 6.191 There are no connected premises in Area 3, consequently there is no effective existing demand for MI WHQA services.
- 6.192 ComReg attempted to judge future demand for MI WHQA services in the 2018 Further Consultation by creating a forecast database of premises likely to require MI WHQA services in the future. However, this database proved to be unreliable and this portion of the analysis was abandoned⁶⁴⁹.
- 6.193 As there is no information on existing or potential demand characteristics of MI WHQA services in Area 3, ComReg is unable to assess the competitive characteristics of this market based on demand-side considerations. In practice, it is impossible to gauge whether any future demand would be near or far (more than 50 metres) from ANs as no assumption can be made regarding the specific location of any such demand. However, in the event that demand does arise in this market, there are at least 2ANs that may be in a position to compete for such demand. As a result, ComReg is unable to reach a view that any operator holds SMP in this Market.

Existing competition

- 6.194 There are no connected premises and consequently no existing demand in Area 3. As a result, there is no existing competition in this market.

Potential competition

- 6.195 ComReg is of the view that barriers to entry have been largely overcome as evidenced from the existing installed infrastructure. The delineation of the Area 3 MI WHQA Market is predicated, in part, on the presence of rival network infrastructure.

⁶⁴⁹ See Annex 3

6.196 Moreover, as ComReg must take a forward looking view of competition in this assessment, it considers that the prospects for competition in the Area 3 MI WHQA Market are favourable. ComReg notes that as the roll-out of the SIRO network advances, the Area 3 MI WHQA Market should, to the extent it can be utilised to provide MI WHQA LLs, further strengthen the presence of increased independent infrastructure based competition which can be used to supply any demand for MI WHQA services in this market.

CBP Assessment

6.197 In the case of the Area 3 MI WHQA Market, the delineation of its geographic scope is based on the presence of alternative networks. However, as there is no demand for MI in Area 3, ComReg cannot carry out a CBP assessment.

6.198 However, the delineation of the Area 3 MI WHQA Market is also predicated on the absence of connected premises, which act as a source of demand for MI WHQA services. In the absence of any information on demand characteristics, ComReg is unable to assess if CBP is present in this market or whether it would be effective.

Overall Conclusions on Competition in the Area 3 MI WHQA Market

6.199 In paragraphs 6.189 to 6.198 above, ComReg has assessed existing competition, potential competition and CBP in the Area 3 MI WHQA Market. Having regard to this analysis, it is ComReg's overall view that the available evidence is suggestive of no SP being likely to have SMP in the Area 3 MI WHQA Market.

6.200 This is due to the presence of alternative infrastructure to supply any potential demand for MI WHQA services and hence the presence of existing competition. As such, ComReg has insufficient evidence of any SP having market power commensurate with a designation of SMP, and is thus unable to prove the presence of SMP in this market.

6.8 SMP Assessment in the Area 4 MI WHQA Market

6.201 In this Section ComReg presents its views on the assessment of competition and SMP in the Area 4 MI WHQA Market.

6.202 ComReg examines in particular:

- (a) existing competition in the Area 4 MI WHQA Market (discussed in paragraph 6.205 below);
- (b) potential competition in the Area 4 MI WHQA Market (discussed in paragraphs 6.206 to 6.207 below); and

(c) CBP in the Area 4 MI WHQA Market (discussed in paragraphs 6.208 to 6.209 below).

- 6.203 There are no Connected Premises in Area 4, consequently there is no effective existing demand in this area and insufficient supply (due to the only one or no ANs begin present) to create any possible competitive tension if demand was to appear. ComReg attempted to ascertain future demand for MI WHQA services in the 2018 Further Consultation by creating a forecast database of premises likely to require MI WHQA services in the future. However, this database was insufficiently robust when tested and this portion of the 2018 assessment was removed from the 2019 approach⁶⁵⁰. In the Area 4 MI WHQA Market, ComReg has shown in Section 5 that in each WPZ within this market there are less than two ANs present. As such, even if there were Connected Premises, there are insufficient competitors such that it would not be suggestive of effective competition. This is contrast to the situation in Area 3, where there are 2ANs that may be in a position to service any future demand.
- 6.204 Furthermore, ComReg is of the view that the evidence on the absence of existing and potential competition suggests that Eircom is likely to have SMP in the Area 4 as it would be able to meet the vast majority of any future demand with little or no competitive constraint, given the dearth of ANs in the this area. ComReg considers that Eircom is likely to retain this SMP in the MI WHQA Market in Area 4 over the lifetime of this market review.

Existing competition

- 6.205 There are no connected premises and consequently no existing demand in Area 4. As a result, there is no existing competition in this market. In the Area 4 MI WHQA Market, ComReg has shown in Section 5 that in each WPZ within this market there are less than two ANs present. As such, even if there were Connected Premises, there are insufficient competitors such that it would be suggestive of effective competition.

⁶⁵⁰ See Section A.1.5.2 below

Potential Competition

- 6.206 ComReg considers there to be significant barriers to entry and expansion of network infrastructure for alternative SPs in the Area 4 MI WHQA Market. As was noted in paragraph 6.205, there is no existing demand for MI WHQA services in this area. This lack of demand means that alternative SPs have fewer incentives to build network infrastructure in Area 4, whether that entails the expansion of an existing network or the building of a new one. This means that Eircom is likely to remain the only SP with network infrastructure in the Area 4 MI WHQA Market.
- 6.207 ComReg, which must take a forward looking view of competition in its SMP assessments, thus considers it unlikely that any alternative SPs will build the network infrastructure required to impose a significant competitive constraint on Eircom in the Area 4 MI WHQA Market.

CBP Assessment

- 6.208 The geographic scope of the Area 4 MI WHQA Market was delineated, in part, on the absence of sufficient alternative networks that could readily act as an alternative source of supply to the majority of current and potential demand in a WPZ. As such, there are not sufficient alternative possible suppliers of MI WHQA, such that the threat of switching supply is credible.
- 6.209 The geographic delineation of Area 4 was also predicated on the absence of connected premises, which act as a source of demand for MI WHQA services. In the consequent absence of any information on demand characteristics, ComReg is unable to assess the presence of CBP in this market.

Overall Conclusions on Competition in the Area 4 MI WHQA Market

- 6.210 In paragraphs 6.201 to 6.209 above, ComReg has assessed existing competition, potential competition and CBP in the Area 4 MI WHQA Market. Having regard to this analysis, it is ComReg's overall view that Eircom is likely to have SMP in the Area 4 MI WHQA Market.
- 6.211 This is mostly due to the significant barriers to the introduction or expansion of alternative network infrastructure in this market. ComReg does not consider it likely that these barriers will weaken over the lifetime of this market review. Therefore no SP is likely to build alternative network infrastructure which would provide a significant competitive constraint on Eircom.

6.9 Designation of Eircom with Significant Market Power in the LB TI WHQA Market, Area 2 MI WHQA Market, and Area 4 MI WHQA Market

Designation of Eircom with Significant Market Power in the LB TI WHQA Market

6.212 In paragraphs 6.16 to 6.86 above, ComReg has considered a wide range of factors to identify whether any Undertaking enjoys a position of SMP in the LB TI WHQA Market. These factors have included:

- (a) Existing competition in the LB TI WHQA Market;
- (b) Potential competition in the LB TI WHQA Market; and
- (c) The strength of any CPB.

6.213 ComReg's view is that the LB TI WHQA Market is not likely to be effectively competitive and that Eircom would not be sufficiently constrained by the above factors such that it would prevent it from behaving, to an appreciable extent, independently or competitors, customers and consumers.

6.214 Where ComReg determines, as a result of a market analysis carried out by it in accordance with Regulation 27 of the Framework Regulations, that a given market identified in accordance with Regulation 26 of the Framework Regulations is not effectively competitive, ComReg is obliged to designate one or more Undertaking under Regulation 27(4) of the Framework Regulations as having significant market power.

6.215 Having regard to the conclusions reached above, ComReg's position is that Eircom should be designated as having SMP in the LB TI WHQA Market.

Designation of Eircom with Significant Market Power in the Area 2 MI WHQA Market

6.216 In paragraphs 6.132 to 6.188 above, ComReg has considered a wide range of factors to identify whether any Undertaking enjoys a position of SMP in the Area 2 MI WHQA Market. These factors have included:

- (a) Existing competition in the Area 2 MI WHQA Market;
- (b) Potential competition in Area 2 MI WHQA Market; and
- (c) The strength of any CBP.

- 6.217 ComReg's position is that the Area 2 MI WHQA Market is not likely to be effectively competitive and that Eircom would not be sufficiently constrained by the above factors such that it would prevent it from behaving, to an appreciable extent, independently of competitors, customers and consumers.
- 6.218 Where ComReg determines, as a result of a market analysis carried out by it in accordance with Regulation 27 of the Framework Regulations, that a given market identified in accordance with Regulation 26 of the Framework Regulations is not effectively competitive, ComReg is obliged to designate one or more Undertaking under Regulation 27(4) of the Framework Regulations as having significant market power.
- 6.219 Having regard to the conclusions reached above, ComReg's position is that Eircom should be designated as having SMP in the Area 2 MI WHQA Market.

Designation of Eircom with Significant Market Power in the Area 4 MI WHQA Market

- 6.220 In paragraphs 6.201 to 6.211 above, ComReg has considered a wide range of factors to identify whether any Undertaking enjoys a position of SMP in the Area 4 MI WHQA Market. These factors have included:
- (a) Existing competition in the Area 4 MI WHQA Market;
 - (b) Potential competition in Area 4 MI WHQA Market; and
 - (c) The strength of any CBP.
- 6.221 ComReg's position is that the Area 4 MI WHQA Market is not likely to be effectively competitive and that Eircom would not be sufficiently constrained by the above factors such that it would prevent it from behaving, to an appreciable extent, independently of competitors, customers and consumers.
- 6.222 Where ComReg determines, as a result of a market analysis carried out by it in accordance with Regulation 27 of the Framework Regulations, that a given market identified in accordance with Regulation 26 of the Framework Regulations is not effectively competitive, ComReg is obliged to designate one or more Undertaking under Regulation 27(4) of the Framework Regulations as having significant market power.
- 6.223 Having regard to the conclusions reached above, ComReg's position is that Eircom should be designated as having SMP in the Area 4 MI WHQA Market.

Subsequent Analysis of the Competition Problems and Remedies

- 6.224 As noted later in Section 9, following the SMP assessment, for the purpose of considering competition problems and the imposition of remedies, as appropriate,
- (a) the Area 1 MI WHQA Market and Area 3 MI WHQA Market are collectively referred to in this Decision as the '**Zone A MI WHQA Markets**'; and
 - (b) the Area 2 MI WHQA Market and Area 4 MI WHQA Market are collectively referred to in this Decision as the '**Zone B MI WHQA Markets**'.

7 Competition Problems in the LB TI WHQA Market and Impacts on Competition and Consumers

7.1 Overview

- 7.1 In this Section ComReg now seeks to identify those competition problems which, absent regulation⁶⁵¹, could potentially arise in the LB TI WHQA Market and, having done so, ComReg proceeds in Section 8 to consider the imposition of appropriate remedies to address the identified competition problems.
- 7.2 Five (ALTO, BT, Eircom, enet, and Vodafone) of the seven Respondents to the 2018 Further Consultation commented on ComReg's assessment of competition problems in the LB TI WHQA Market. Of these five Respondents, four agreed (ALTO, BT, enet and Vodafone) with ComReg's preliminary views, while one Respondent (Eircom) disagreed. Respondent's views, along with ComReg's assessment of them is set out in Section A.1.7 of Annex 1 of this Decision.
- 7.3 In summary, ComReg has decided to maintain its preliminary view on competition problems described in its 2016 Consultation and 2018 Further Consultation in the LB TI WHQA Market that Eircom, as the designated SMP operator, could:
- (a) exploit customers by setting excessive wholesale charges;
 - (b) exclude competition in downstream retail and/or horizontal wholesale markets; and
 - (c) engage in exclusionary behaviour which would deter entry and investment into the LB TI WHQA market.
- 7.4 In Section 6, ComReg set out its position that, in accordance with Regulation 27(4) of the Framework Regulations, this market is not effectively competitive and decided to designate Eircom with SMP in this market, thereby meaning that it has the ability to act independently of its competitors, customers and consumers.

⁶⁵¹ WHQA products have to date been provided by Eircom pursuant to regulatory obligations imposed on it under the 2008 Decision (and subsequent decisions). The assessment carried out in this Section of the Decision is carried out in the context of what competition problems would be like assuming that such SMP obligations were not in place.

- 7.5 In accordance with Regulation 27(4) of the Framework Regulations, where an Undertaking is designated as having a position of SMP in a relevant market, ComReg is required to impose on that Undertaking each of the obligations (or remedies) set out in Regulations 9 to 13 of the Access Regulations, as ComReg deems appropriate.
- 7.6 As noted in the European Commission's Explanatory Note to the 2014 Recommendation, the underlying purpose of the *ex ante* regulatory framework is to deal with predictable competition problems that have their origin in structural factors in the sector. For example, the finding of an absence of effective competition in the LB TI WHQA Market indicates the potential for competition problems to arise within them over the review period in question, thereby justifying the imposition of *ex ante* regulation.
- 7.7 It is ComReg's position that Eircom's underlying ability and incentive to potentially engage in anti-competitive behaviour, absent regulation, is due to the lack of effective competition in the LB TI WHQA Market, coupled with Eircom's position as a vertically integrated supplier competing with its wholesale customers and in downstream markets.
- 7.8 ComReg would note that it is neither necessary to catalogue examples of actual abuse nor to provide exhaustive examples of potential abuse. Rather, the purpose of *ex ante* regulation is to prevent the possibility of abuse of dominance given that Eircom has been identified as having SMP in the LB TI WHQA Market.

7.2 Types of Competition Problems

- 7.9 In determining what form of *ex ante* regulatory remedies are justified in the LB TI WHQA Market, ComReg has carried out an assessment of potential competition problems that are likely to arise, assuming regulation is absent and taking account of the structure and characteristics of this market.
- 7.10 In the absence of regulation in the LB TI WHQA Market, ComReg considers that Eircom would have the ability and incentive to influence competition through effects on prices, innovation, output and the variety or quality of goods and services provided. In general, there are a number of competition problems that may arise when an SMP operator seeks to:
- (a) exploit customers or consumers by virtue of its SMP position;
 - (b) leverage its market power into adjacent vertically or horizontally related markets with a view to foreclosing or excluding competitors in downstream and/or upstream markets; and
 - (c) exclude or delay investment and market entry in the LB TI WHQA Market (and ultimately downstream markets).

- 7.11 In considering the above competition problems that could arise⁶⁵², ComReg has also been guided by experience in the market. Although it is not necessary *per se* to demonstrate actual abuse, examples of competition problems which have previously arisen, even in the presence of existing regulation, can help ground the analysis in actual experience.

Exploitative Practices

- 7.12 Economic theory suggests that where a firm holds market power it is in a position to increase prices above competitive levels and/or reduce output below competitive levels, thereby earning higher than normal profits. These higher profits effectively create a wealth transfer from the consumer to the firm with market power. It is ComReg's position that Eircom, as the Undertaking with SMP in the LB TI WHQA Market, and, given its presence in a number of adjacent markets, has the ability and incentive to engage in exploitative practices. Such exploitative practices could include excessive pricing, inefficiency or inertia to the ultimate detriment of End Users. These potential concerns are considered below.

Excessive Pricing

- 7.13 According to EU competition case law, excessive pricing refers to a situation where the prices charged by a dominant Undertaking are not closely related to the value to the consumer and/or the cost of producing or providing the relevant service.⁶⁵³ Concerns about excessive pricing arise where, absent regulation, price levels are likely to be persistently high with no effective pressure (e.g. from new entry or innovation) to bring them down to competitive levels over the period of the review.

⁶⁵² Such issues are also considered in Section 8 in the context of appropriate remedies (regulatory obligations) to address competition problems.

⁶⁵³ Case C 27/76 United Brands v. Commission, [1978] ECR 207, [1978] 1 CMLR 429, paragraph 250. In United Brands the Court of Justice of the European Union held that: "...charging a price which is excessive because it has no reasonable relation to the economic value of the product supplied would be... an abuse".

- 7.14 Eircom's presence in the LB TI WHQA Market is characterised by a high market share (as set out in Section 6, at the end of 2018 Eircom's market share, which has remained high and stable over time, was [redacted] ⁶⁵⁴, an absence of existing effective competition, high and non-transitory barriers to entry associated with control over infrastructure not easily replicated, limited scope for potential competition and insufficient Countervailing Buyer Power ("CBP"). Thus, there is insufficient pressure to constrain Eircom from behaving, to an appreciable extent, independent of its customers, competitors or consumers. There is also insufficient pressure to prevent Eircom from engaging in excessive pricing behaviour in the LB TI WHQA Market ⁶⁵⁵. Hence, ComReg considers that Eircom is likely to have incentives to exploit its WHQA customers in this manner as it competes with these SPs in downstream retail and/or wholesale markets.
- 7.15 For example, by raising the price of LB TI WHQA inputs above the competitive level, this would raise input costs for those SPs that purchase Eircom's LB TI WHQA products/services (assuming Eircom would provide them with such inputs absent regulation) in order to offer services in the downstream retail and/or wholesale markets. Given that such inflated wholesale prices may be passed on by SPs to their retail and/or wholesale customers via higher prices, it could lead to reduced revenues for these SPs and possibly their exit from or contraction in the downstream retail and/or wholesale markets. This way, Eircom's excessive pricing of LB TI WHQA inputs could lead to the exclusion of competitors who purchase these inputs from the downstream retail and/or wholesale markets, and ultimately hinder effective competition in these markets.
- 7.16 Excessive prices can pose a deterrent to entry and also distort investment incentives as the higher charges raise costs of production for the operators that purchase from Eircom and constrain their ability and incentive to invest in additional infrastructure. However, this may be less of a concern in the LB TI WHQA Market where LL products are largely based on legacy technologies and, as noted in Section 6, new entry to the LB TI WHQA Market is unlikely.

⁶⁵⁴ Between 80% and 90%.

⁶⁵⁵ As noted in paragraphs 8.25 and 8.26 Eircom's wholesale prices in the LB TI WHQA Market are currently regulated under the 2008 Decision and 2012 Pricing Decision.

- 7.17 To address the potential for excessive pricing in the LB TI WHQA Market, ComReg considers that *ex ante* regulation is required. Competition law applied on an *ex post* basis is often unsuitable in preventing excessive pricing, and this is evidenced by the scarcity of successful *ex post* excessive pricing cases within EU jurisprudence. An *ex post* approach to excessive pricing in markets such as the LB TI WHQA Market which is characterised by a lack of effective competition and high and non-transitory entry barriers, is not likely to offer adequate protection for consumers or promote effective competition. This is because addressing the issue of excessive pricing through competition law approaches (if it is proven to the required competition law standard) would likely occur substantially after the occurrence of the competition problem itself, thereby contributing to significant uncertainty amongst downstream market participants in the interim and undermining the development of effective competition to the detriment of consumers.
- 7.18 As noted in the analysis in Section 8, Eircom's LB TI WHQA products are currently regulated via various price control obligations⁶⁵⁶. Absent such regulation, ComReg considers that prices for such products would not be reduced to a competitive level. Given the ability and incentives for Eircom, as the SMP Undertaking, to engage in excessive/exploitative pricing, transparency, price control and related cost accounting obligations are therefore considered justified by ComReg to ensure that prices are set at levels that are reflective of the underlying efficient cost of providing these products and that such charges are applied in a non-discriminatory fashion to other Access Seekers, and between Access Seekers and Eircom to itself.

Leveraging

- 7.19 Where a vertically integrated Undertaking has SMP in one market that has close links with other adjacent markets either at a similar (e.g. horizontal) or different (e.g. vertical) level in the production or distribution chain, the SMP Undertaking may attempt to transfer (leverage) its market power to such vertically and/or horizontally related markets. This could enable the SMP Undertaking to strengthen its position in those related markets and/or potentially reinforce its existing market power in the SMP market in question.

⁶⁵⁶ See discussion on exiting price control obligations in paragraphs 8.25 and 8.26.

- 7.20 Given the close relationship between the LB TI WHQA Market and other horizontally related markets (e.g. MI WHQA⁶⁵⁷) and vertically related markets (e.g. WLA⁶⁵⁸ and retail LL market(s)), there is potential for leveraging to occur, absent regulation. Leveraging may raise rivals' costs, introduce barriers to effective access to LB TI WHQA products, services and facilities in a timely manner, reduce competitive pressures on related wholesale/retail services and enable the SMP Undertaking to extract additional revenues from its competitors, customers and ultimately consumers.

Horizontal Leveraging

- 7.21 Horizontal leveraging arises where an Undertaking with market power in one market is able to use it to exert undue influence into other markets that are at a similar level in the production or distribution chain. Examples of horizontal leveraging can include certain tying/bundling practices, cross subsidisation/predatory-type behaviour and/or where the SMP Undertaking may seek to foreclose infrastructure-based competitors by way of an insufficient economic space⁶⁵⁹ between the relative pricing of different upstream/intermediate inputs.
- 7.22 In the context of this market review, horizontal leveraging may occur where Eircom, which ComReg has decided has SMP in the LB TI WHQA Market, is competing in adjacent wholesale markets and has the ability and incentive to negatively impact the position of its competitors in these markets. Horizontal leveraging in this case could for instance involve tying LB TI WHQA products to other WHQA products. So an Access Seeker, in purchasing LB TI WHQA LLs from Eircom, must also purchase MI WHQA LLs or other facilities from Eircom, thereby impacting the ability of other MI WHQA providers to compete effectively.
- 7.23 ComReg considers that some of these concerns exist given that Eircom could have the ability and incentive to price its wholesale inputs in a way that increases uncertainty.

⁶⁵⁷ For example, an Access Seekers may purchase both TI and MI WHQA services from the same supplier. Absent a wholesale supplier having the ability to serve these needs, its position in the TI WHQA Market (or both markets) may be undermined, particularly where a retail End User will only contract with a single supplier for these services.

⁶⁵⁸ Wholesale Local Access.

⁶⁵⁹ "Economic space" refers to an appropriate space between the pricing of related wholesale or intermediate products/services sufficient to promote sustainable infrastructure competition to the benefit of End Users.

Vertical Leveraging

- 7.24 Vertical leveraging arises where a vertically integrated Undertaking is able to leverage its SMP position at one level in the production or distribution chain into downstream markets in which it is also active.
- 7.25 In the context of the LB TI WHQA Market, vertical leveraging may occur given that Eircom, as the SMP Undertaking, has the incentive to use its market power in this market to affect the competitive conditions in downstream retail markets, in particular, through its ability to control the key network inputs used by Access Seekers - which compete against Eircom in the downstream markets. This could result in a distortion of or reduction in competition in these downstream markets, potentially resulting in harm to consumers in the form of higher prices, lower output/sales, reduced quality or consumer choice.
- 7.26 ComReg considers that, absent regulation, vertical leveraging could arise in the LB TI WHQA Market because Eircom is a vertically-integrated Undertaking, has SMP in this market, and has the ability and incentive to leverage that market power into downstream markets, including (but not limited to) the provision of retail LL services. This would serve to enhance its market power in these downstream markets.

Price Based Vertical Leveraging Behaviour

- 7.27 Vertical leveraging may also be evident in pricing behaviour and, absent regulation, Eircom could attempt to foreclose competition in a downstream market by offering LB TI WHQA products at a price that would not allow an efficient Access Seeker to earn a sufficient margin and recover their efficiently-incurred costs. This could result in the foreclosure of competition from an Access Seeker through a margin squeeze.
- 7.28 A margin squeeze could distort competition and have an adverse effect on consumers in a number of ways:
- (a) foreclosure of competitors, leading to higher prices;
 - (b) setting higher prices for LB TI WHQA products to negate rivals' competitive advantages;
 - (c) raising rivals' uncertainty, through the threat of a margin squeeze to deter competition.

Non-Price Based Vertical Leveraging Behaviour

- 7.32 Vertical leveraging could be undertaken by Eircom in a number of ways, absent regulation in the LB TI WHQA Market. For example, vertical leveraging can manifest as an outright refusal to supply or a constructive refusal to supply. Refusal to supply is particularly relevant when the SMP operator is vertically integrated which facilitates the SMP operator to gain strategic advantage over rivals in the downstream markets.
- 7.33 Other examples of non-price vertical leveraging, which can be closely related to each other, can amount to constructive rather than outright denial of access, including:
- (a) **Delaying tactics:** this relates to issues such as protracted negotiations in respect of the supply of existing or new LB TI WHQA products, services or associated facilities to downstream competitors. Another example would be the use of retail contract terms to effectively dissuade a customer from moving to a competing SP in a timely manner, thereby undermining the effectiveness of access to LB TI WHQA products, services and facilities. An SMP operator has the ability and incentive to engage in a 'first mover advantage' by offering a retail offering before an equivalent wholesale product is made available to potential Access Seekers. This first mover advantage has the potential to raise the Access Seekers' costs relative to the SMP operator and restrict the Access Seekers potential future retail sales.
 - (b) **Quality discrimination:** providing competitors with LB TI WHQA at a lower quality of service (or inferior information) to that which Eircom provides to its own downstream arm (or to certain other competitors). For example, the SMP operator could give priority to its own customers when repairing faults or upgrading network assets.
 - (c) **Creating or exploiting information asymmetries and the withholding of relevant information:** where competitors are dependent on Eircom to provide LB TI WHQA LLs and need certain (quality or technical) information in order to effectively compete in the downstream retail and/or wholesale market, a lack of transparency or asymmetry in the provision of relevant information can impede competition. For example, a lack of transparency in the terms and conditions of supply for LB TI WHQA products that are self-supplied by the SMP provider could make it difficult for Access Seekers to make effective commercial or operational decisions that involve the use of LB TI WHQA inputs in the provision of their own downstream services. Such a lack of transparency could also fail to assure Access Seekers that LB TI WHQA products are provided on a non-discriminatory basis (including whether Eircom is in a position to demonstrate that there is equivalence of access).

- (d) **Disproportionate entry criteria:** This may, for example, include Eircom setting unreasonable terms and conditions for supply/use of access to LB TI WHQA products (including associated facilities). An example of this behaviour would include an undue requirement to use a particular (more expensive) technology beyond the extent which might be economically or technically justified.
- (e) **Unwarranted withdrawal of access already granted:** Eircom could seek to unreasonably withdraw access to facilities already granted.
- (f) **Unreasonable product bundling/tying:** this could include the bundling/tying of LB TI WHQA products in such a way that it damages the ability of Access Seekers to compete downstream. For example, if Eircom required Access Seekers using LB TI WHQA services to also purchase additional and unnecessary services that raises Access Seekers' costs of providing downstream retail services, this could damage their ability to compete effectively.

7.34 Further examples of the above non-price leveraging behaviours arise where a vertically-integrated SMP Undertaking may create or exploit information asymmetries to the detriment of downstream competition. This could include for example any differences in interface between the SMP Undertaking's internal access to IT systems, and wholesale customers' access. The infrastructure associated with Operational Support Systems ('OSS') and Business Support Systems ('BSS') is supported by IT systems, which evolve over time. Where, for example, Access Seekers do not have visibility or input into relevant Eircom's IT system changes and are not aware of the IT development process and its timetable, they will be unable to contribute or to make a request for service at the appropriate point. Moreover, it may be the case that operational changes of this kind are not implemented simultaneously or to the same standard for external and internal access.

Information Asymmetries

- 7.35 Given that Eircom is vertically integrated, it may also be difficult to compare the LB TI WHQA products (and associated facilities) its uses internally with those offered to Access Seekers, as well as to compare how LB TI WHQA products are developed and implemented. A lack of transparency in how products are both developed and implemented internally could also make it difficult to demonstrate equivalence and could provide an incentive for non-price means of leveraging market power. For example, in terms of product offerings, absent regulation, Eircom, as the Undertaking to be designated with SMP in the LB TI WHQA Market, could make downstream retail products using LB TI WHQA inputs which Access Seekers could not match, because no wholesale equivalent has been made available. In terms of product implementation, if Access Seekers are not aware of all the features of the wholesale products which are available to Eircom internally, they will not know that they can request these features themselves, and ultimately may find themselves offering an inferior product at the retail level. Furthermore, where certain LB TI WHQA services/information necessary for preparing a bid/tender proposal for a customer contract are not made available to competitors in sufficient time, this could also impede their ability to compete with the SMP operator for important downstream customers.
- 7.36 Another example of information asymmetries could include situations where Access Seekers require metrics on order processing, service delivery and fault repair to view the overall performance of Eircom's LB TI WHQA products from a provisioning and service assurance perspective. Failure by Eircom to provide such data to its wholesale customers would likely impair their ability to compare the performance of Eircom's supply of wholesale products. Uncertainty for Access Seekers (and their retail and/or wholesale customers) as to the performance and quality of their purchased LB TI WHQA inputs relative to the services and information made available internally to Eircom's retail arm could potentially discourage participation in markets dependent upon Eircom's wholesale products (for example, through a lack of visibility of average line-fault repair time between Eircom retail and wholesale customer faults).

- 7.37 Information asymmetries may also apply to future planning by the SMP Undertaking. For example, changes by Eircom to its network topography such as its location of points of interconnect may have significant implications for Access Seekers using LB TI WHQA products. Insufficient notice of network and process changes relevant to the delivery of services in the retail market could significantly impede the ability of LB TI WHQA Access Seekers to launch corresponding retail products and to compete with Eircom on an equivalent basis in downstream markets. A lack of information and the associated uncertainty may discourage Access Seekers from investing in or expanding their network footprint (to avail of WHQA products)⁶⁶⁰ or downstream footprint (since there may be a perceived risk of stranded assets). However, as noted in Section 6, given that Analogue and TDM LLs are based on a legacy technology, ComReg considers it unlikely that existing Access Seekers would expand the network footprints given the risk of non-recovery of investments in a declining market. Furthermore, such information asymmetries may lead to a delayed consideration of Access Seekers' wholesale requirements as part of such network developments, also delaying/impeding their ability to respond to any new downstream offerings by the SMP Undertaking.
- 7.38 A vertically-integrated SMP Undertaking could also have an incentive to frustrate the retail/wholesale switching process through which retail customers can switch to an alternative product or an alternative SP. Access seekers may wish to migrate their downstream customers between wholesale products (or from wholesale products onto products offered on their own network), and may wish to carry out single or bulk migration of their customer base (for example, migrations from TI WHQA products to MI WHQA products). This should involve minimal disruption or delay from the downstream customer's perspective. Examples of actions which could disrupt the migration process could include rejecting migration orders on the basis of technicalities which were not made known to the requesting Access Seekers, requesting additional customer authorisation agreements, or preventing the shift of a large number of retail customers to alternative service provision. This type of action would impose an additional and unnecessary switching cost on Access Seekers and ultimately retail customers.

⁶⁶⁰ Access Seekers' use of LB TI WHQA products depends on the extent of their backhaul network. Investing in backhaul depends on the location of Eircom's Points of Interconnection.

- 7.39 Further examples of potential leveraging behaviour related to the above could include possible disruption of customer migration processes such as failing to switch bundles of services in a seamless and co-ordinated manner (such that any service loss by the switching retail customer is minimised, if not entirely eliminated) and practices aimed generally at raising rivals' costs.⁶⁶¹
- 7.40 ComReg considers that, absent regulation, these types of issues could arise in the LB TI WHQA Market given that Eircom is competing in downstream markets within which Access Seekers also compete or may seek to compete.

Exclusionary Practices

- 7.41 The SMP WHQA provider may also have the ability and incentive to behave in such a way that delays/deters network investment and entry into the downstream retail and/or wholesale markets. The LB TI WHQA provider may attempt to defend its existing SMP position in the LB TI WHQA Market by engaging in conduct aimed at foreclosing the market.
- 7.42 ComReg's position is that exclusionary behaviour that is likely to take place in the LB TI WHQA Market is behaviour closely associated with the ability and incentives of a vertically-integrated SMP Undertaking, as discussed above, in the context of leveraging and the exclusionary impacts in horizontally or vertically related markets. These include (but are not limited to) foreclosing competition by:
- (a) refusing to supply access, applying unreasonable or discriminatory terms and conditions of access, and/or creating or exploiting information asymmetries;
 - (b) engaging in exclusive contracts with downstream customers and exclusionary actions aimed generally at raising customer or consumer switching costs thereby impacting on potential competition; and
 - (c) raising costs of those competitors that rely on Eircom's Low Bandwidth TI WHQA inputs in providing downstream retail and/or wholesale services;

⁶⁶¹ Unlike predatory pricing, certain practices can be employed which unfairly raise rival's costs and reduce competition but which do not necessarily require the SMP Undertaking to incur short run losses. For example, an integrated firm with market power in an upstream market may have incentives to raise the price of the inputs it sells to its downstream rivals, thereby potentially raising their costs and reducing demand for their products. Furthermore, the integrated operator could potentially give priority to its own traffic at network bottlenecks or apply standards that are easier for its own retail affiliate to meet than for its downstream competitors. (See Krattenmaker, T.G. and S.C. Salop (1986) "Anticompetitive Exclusion: Raising Rival's Costs To Achieve Power over Price", Yale Law Journal, 96:209-93; Salop, S.C. and D.T. Scheffman (1987), "Cost-Raising Strategies", Journal of Industrial Economics, 36:19-34).

- 7.43 ComReg's position is that, as the vertically integrated Undertaking with SMP in the LB TI WHQA Market, Eircom has both the ability and incentives to restrict or distort the development of competition in the LB TI WHQA Market.

7.3 ComReg's Position on Competition Problems in the LB TI WHQA Market

- 7.44 Having regard to the analysis set out in paragraphs 7.9 to 7.43 above, ComReg's position is that, absent regulation, Eircom, as the SMP Undertaking in the LB TI WHQA Market has the ability and incentive to engage in actions which could negatively impact on competition and customers in related retail and/or wholesale markets, as well as having the potential to reinforce its market power in the LB TI WHQA Market over time.
- 7.45 Respondent's views, along with ComReg's assessment of them is set out in Section A.1.7 of Annex 1 of this Decision.
- 7.46 ComReg has presented examples of such behaviour and therefore considers that it is justified and proportionate to impose robust obligations on Eircom in the LB TI WHQA Market relating to access, transparency, non-discrimination, price control and cost accounting and accounting separation. The detail of these obligations is discussed in Section 8 below.

8 Imposition of Remedies in the Low Bandwidth ('LB') Traditional Interface ('TI') Wholesale High Quality Access ('WHQA') Market

8.1 Introduction

- 8.1 The Low Bandwidth ('LB') Traditional Interface ('TI') WHQA Market refers to the wholesale market for TI LLs with speeds up to and including 2Mb/s.
- 8.2 In Section 6 of this Decision ComReg set out its view that Eircom should be designated with Significant Market Power ('SMP') in this market.
- 8.3 In Section 7 of this Decision, ComReg has identified and set out a range of competition problems in the LB TI WHQA Market and related markets.
- 8.4 In Section 8 of the 2016 Consultation and Section 7 of the 2018 Further Consultation, ComReg set out its preliminary views in relation to the imposition of remedies to address the competition problems in the LB TI WHQA Market and related markets (with such competition problems having been identified in Section 7 of the 2016 Consultation and Section 6 of the 2018 Further Consultation).
- 8.5 ComReg's view in Section 7 of the 2018 Further Consultation was that imposition of a full suite of Access obligations including access, non-discrimination, transparency, price control and accounting separation is warranted to address the identified competition concerns.
- 8.6 Furthermore, ComReg was of the preliminary view in the 2016 Consultation that, due to the trivial number of wholesale analogue TI LLs then in place (4 in total)⁶⁶² and the fact that there had been no new orders for such products since 2002, it was proportionate to forbear on the imposition of access and/or any other remedies for this TI LL product⁶⁶³. ComReg maintained this position in its 2018 Further Consultation as it was not presented with any evidence which would cause to alter its view.

⁶⁶² Based on data obtained from operators (end 2018) in response to ComReg's Statutory Information Request issued on 14 March 2019.

⁶⁶³ See paragraph 8.31 below.

- 8.7 Of the 7 Submissions received, 6 Respondents (namely ALTO, BT, Eircom, enet, Verizon and Vodafone) provided comments regarding ComReg's approach to implementing remedies and provided comments on the Draft Decision Instrument attached at Appendix 4 of the 2018 Further Consultation. An overview of these Submissions, along with ComReg's assessment of them, is provided in Annex 1 of this Decision.
- 8.8 This Section is set out as follows:
- (a) Approach to Specifying and Implementing Remedies (discussed in Section 8.2 below);
 - (b) Legal Framework for Imposing Remedies (discussed in Section 8.3 below);
 - (c) Existing Remedies (discussed in Section 8.4 below);
 - (d) Assessment of Regulatory Approaches to Imposing Remedies in the LB TI WHQA Market (discussed in Section 8.5 below);
 - (e) Access Remedies (discussed in Section 8.6 below);
 - (f) Non-Discrimination Remedies (discussed in Section 8.7 below);
 - (g) Transparency Remedies (discussed in Section 8.8 below);
 - (h) Price Control and Cost Accounting Remedies (discussed in Section 8.9 below); and
 - (i) Accounting Separation Remedies (discussed in Section 8.10 below).

8.2 Approach to Specifying and Implementing Remedies

- 8.9 In Sections 6 of this Decision, ComReg set out its position that Eircom has SMP in the LB TI WHQA Market, while in Section 7 it has identified a range of competition problems and competition or consumer impacts that, in the absence of regulation, could arise in this and related markets. These competition problems related to, amongst other things, Eircom having the ability and the incentive to foreclose competition and/or exploit wholesale (and retail) customers, ultimately to the detriment of competition and consumers. In this Section, ComReg outlines in detail the regulatory remedies it intends to impose upon Eircom in order to address these competition problems.
- 8.10 Prior to doing so, ComReg sets out the legal framework for imposing remedies below.

8.3 Legal Framework for Imposing Remedies

- 8.11 In accordance with Regulation 8(1) of the Access Regulations⁶⁶⁴, where an operator is designated as having SMP in a relevant market, ComReg is required⁶⁶⁵ to impose on such an operator the obligations set out in Regulations 9 to 13 as ComReg considers appropriate. In this regard, the obligations that may be imposed by ComReg on SMP Undertakings are those relating to:
- (a) Access;
 - (b) Non-Discrimination;
 - (c) Transparency;
 - (d) Price Control and Cost Accounting; and
 - (e) Accounting Separation.
- 8.12 In addition, Regulation 8(6) of the Access Regulations provides that any of the above obligations imposed must:
- (a) be based on the nature of the problem identified;
 - (b) be proportionate and justified in the light of the objectives laid down in Section 12 of the Communications Regulation Acts 2002 (as amended) and Regulation 16 of the Framework Regulations⁶⁶⁶; and

⁶⁶⁴ European Communities (Electronic Communications Networks and Services) (Access) Regulations 2011 (S.I. No. 334 of 2011) (the ‘**Access Regulations**’).

⁶⁶⁵ Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services, 2018/C 159/01 (the “[SMP Guidelines](#)”). The SMP Guidelines state at paragraph 12 that:

“In practice, it cannot be excluded that parallel procedures under ex ante regulation and EU competition law may apply with respect to different types of competition problem(s) identified on the underlying retail market(s). In this respect, ex ante obligations imposed by NRAs on Undertakings designated as having significant market power aim to remedy market failures identified and fulfil the specific objectives set out in the Framework”.

⁶⁶⁶ Pursuant to Section 12 of the Communications Regulation Acts 2002 (as amended), ComReg’s relevant objectives in relation to the provision of electronic communications networks and services are: (i) to promote competition, (ii) to contribute to the development of the internal market, and (iii) to promote the interests of users within the Community. Regulation 16 of the Framework Regulations further specifies ComReg’s objectives.

- (c) only be imposed following public consultation and notification of the draft measures to the European Commission, BEREC⁶⁶⁷ and other NRAs in accordance with Regulation 12 and 13 of the Framework Regulations.
- 8.13 Regulations 12(1) and 12(4) of the Access Regulations also provide statutory criteria that ComReg must take into account before imposing Access obligations on an SMP Undertaking. These criteria include, *inter alia*, examining the technical and economic viability of using or installing competing facilities; the feasibility of providing access; the initial outlay of investment by the Undertaking; and the need to safeguard competition in the long term.
- 8.14 Regulation 6(1) of the Access Regulations provides that ComReg shall, acting in pursuit of its objectives set out in Section 12 of the Communications Regulation Act 2002 (as amended) and Regulation 16 of the Framework Regulations, encourage and, where appropriate, ensure adequate access, interconnection and the interoperability of services in such a way as to:
- (a) promote efficiency,
 - (b) promote sustainable competition,
 - (c) promote efficient investment and innovation, and
 - (d) give the maximum benefit to End Users.
- 8.15 Regulation 13(2) and Regulation 13(3) of the Access Regulations provide that ComReg is also required, when imposing price control obligations, to take into account:
- (a) the investment made by the SMP operator which ComReg considers relevant and allows such an operator a reasonable rate of return on capital employed, taking into account any risks involved specific to a particular new investment network project⁶⁶⁸; and
 - (b) ensure that any cost recovery mechanism or pricing methodology that ComReg imposes serves to promote efficiency and sustainable competition and maximise consumer benefits⁶⁶⁹.

⁶⁶⁷ Body of European Regulators for Electronic Communications.

⁶⁶⁸ Pursuant to Regulation 13(2) of the Access Regulations.

⁶⁶⁹ Pursuant to Regulation 13(3) of the Access Regulations.

- 8.16 These considerations are taken into account throughout this Section, as appropriate, when assessing whether and what form of remedy to impose, and are also discussed in further detail in the context of the Regulatory Impact Assessment found in Section 12 of this Decision. ComReg has also taken the following into account in considering the imposition of remedies on the SMP operator:
- (a) the BEREC common position on the approach to appropriate remedies in the electronic communications networks and services regulatory framework and its common position on the best practice in remedies for the wholesale leased lines markets⁶⁷⁰;
 - (b) any relevant comments letters issued by the European Commission pursuant to Articles 7 and 7a of the Framework Directive in its review of regulatory measures notified by Member States under the EU consultation mechanism for electronic communications service; and
 - (c) the European Commission's 2005 Accounting Separation and Cost Accounting Recommendation⁶⁷¹.

8.4 Existing Remedies

Existing Access Remedies

- 8.17 Eircom is currently subject to a range of access obligations having been designated with SMP in the wholesale terminating segment Leased Line Market as described in Section 8 of the 2008 Decision⁶⁷². These remedies were designed to address various competition problems that were identified at that time. The obligations imposed under the 2008 Decision require Eircom to, amongst other things, provide:

⁶⁷⁰ BEREC Common Position on best practice in remedies imposed as a consequence of a position of significant market power in the relevant markets for wholesale leased lines, Document BOR(12) 126 published 26 November 2012, available at:

http://bereg.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/common_approaches_positions/1096-revised-berec-common-position-on-best-practices-in-remedies-as-a-consequence-of-a-smp-position-in-the-relevant-markets-for-wholesale-leased-lines.

⁶⁷¹ European Commission Recommendation of 19 September 2005 on accounting separation and cost accounting systems under the regulatory framework for electronic communications (2005/698/EC) the '2005 Accounting Separation and Cost Accounting Recommendation'.

⁶⁷² See "[Market Analysis – Leased Lines Market Review, ComReg Document 08/103, Decision D06/08](#)", dated 22 December 2008 ('**2008 Decision**').

- (a) Wholesale Leased Lines ('WLLs')⁶⁷³;
- (b) Partial Private Circuits ('PPCs')⁶⁷⁴, including handover; and
- (c) to meet all reasonable requests for Access to network elements or associated facilities in the market.

8.18 The 2008 Decision and subsequent decisions also imposed obligations upon Eircom:

- (a) to give third parties Access to products, services, network elements or facilities in the market including Access to any additional wholesale inputs which are necessary for the provision of end-to-end LLs to End Users;
- (b) to negotiate in good faith with Undertakings requesting Access;
- (c) not to withdraw Access to facilities already granted without ComReg's prior approval;
- (d) to continue to make available the in-situ transfer of end-to-end LLs;
- (e) to grant open Access to technical interfaces, protocols or other key technologies that are indispensable for the interoperability of services or virtual network services;
- (f) to provide Access to Operational Support Systems ('OSS') and similar software systems necessary to ensure fair competition in the provision of services;
- (g) to interconnect with networks or network facilities;
- (h) to comply with a set of Key Performance Indicators ('KPIs') which were further refined in the 2011 KPI Decision⁶⁷⁵; and

⁶⁷³ A Wholesale Leased Line is a service provided by Eircom whereby Eircom supply the leased line from one End User premises to another.

⁶⁷⁴ A Partial Private Circuit ('PPC') is an interconnection service providing dedicated capacity between an End User premises to an Access Seeker's Point of Handover. It consists of 2 components, namely an End User Link and a Transport Link. It is described in Eircom's PPC Product Description currently published at: http://www.openeir.ie/Products/Data/Partial_Private_Circuits/.

⁶⁷⁵ See "Introduction of Key Performance Indicators for Regulated Markets", Response to Consultation and Decision, ComReg Document No 11/45, Decision D05/11, June 2011 (the '2011 KPI Decision').

- (i) to invoice other authorised operators on a monthly basis, one month in advance of provision of the service with the credit terms remaining at thirty (30) days, as specified in the 2011 Access and Transparency Decision⁶⁷⁶.

8.19 ComReg also imposed the following obligations on Eircom with respect to the access obligations:

- (a) to conclude legally binding and fit-for-purpose Service Level Agreements ('SLAs')⁶⁷⁷ with Other Authorised Operators⁶⁷⁸ ('OAOs');
- (b) to negotiate in good faith with OAOs in relation to the conclusion of legally binding SLAs;
- (c) to ensure that SLAs include provisions for service credits⁶⁷⁹ arising from a breach of the SLA;
- (d) to update and publish the industry SLA as required; and
- (e) to provide to ComReg and publish on a monthly basis, performance statistics as specified by ComReg.

8.20 The list of Urban Centres (originally 15 Urban Centres were listed in Annex A of the 2008 Decision) which related to defining the market for the trunk segment of wholesale LLs was amended and increased to 16 and later to 20 Urban Centres, under the 2010 Urban Centres Decision⁶⁸⁰ and the 2013 Urban Centres Decision⁶⁸¹.

⁶⁷⁶ ComReg Document 11/22, Decision D02/11, Amendments to the transparency obligation and the access obligation in the market for wholesale terminating segments of leased lines, ComReg document No.11/22 published 22 March 2011 ('**2011 Access and Transparency Decision**').

⁶⁷⁷ An SLA is essentially a legally binding contract in relation to the service levels that Eircom would commit to when supplying Wholesale TI LLs to Access Seekers, as more particularly set out in Eircom's LLRO, as may be amended from time to time.

⁶⁷⁸ "Other Authorised Operator(s)" or "OAO(s)" means an Undertaking that is not Eircom, providing or intending to provide an ECN or an ECS, and that is deemed to be authorised under Regulation 4 of the Authorisation Regulations;

⁶⁷⁹ A service credit is a financial credit which is provided by Eircom to an Access Seeker where Eircom has failed to meet the service levels which Eircom commits to from time to time in its SLA.

⁶⁸⁰ ComReg Document 10/12, Decision D02/10, Leased Line Markets: Review of Urban Centres Response to Consultation 09/86 and Final Decision, published 15 February 2010 ('**2010 Urban Centres Decision**').

⁶⁸¹ ComReg Document No. 13/27, Decision D12/13, Leased Line Markets: Further review of Urban Centres, published 29 July 2013 ('**2013 Urban Centres Decision**').

Existing Non-Discrimination Remedies

- 8.21 Eircom is also subject to non-discrimination obligations under the 2008 Decision. These include requirements on Eircom to:
- (a) apply equivalent conditions in equivalent circumstances to other Undertakings providing equivalent services;
 - (b) provide services and information to OAOs under the same conditions, according to the same timescales, on the same basis and quality, as Eircom provides for its own services or those of its subsidiaries or partners; and
 - (c) provide to OAOs information which is required to support existing and future products, services and associated facilities in an accurate and timely manner.

Existing Transparency Remedies

- 8.22 The 2008 Decision also subjected Eircom to a range of transparency obligations whereby it is required to make certain information available in relation to Interconnection and Access. These include specific obligations on Eircom to:
- (a) publish on its wholesale website, and keep updated, a Reference Offer ('**RO**'), which shall include a description of the relevant offerings broken down into component parts and a description of the associated terms and conditions, including prices;
 - (b) ensure that its RO is sufficiently unbundled so that Undertakings are not required to pay for facilities which are not necessary for the service requested;
 - (c) publish at least three (3) months in advance any proposed changes to the RO and any proposed changes to wholesale prices and the application of such prices. Furthermore, Eircom is required to notify ComReg five (5) working days in advance of any such publication as the prior approval of ComReg is necessary before the implementation of any such changes;
 - (d) publish information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices;
 - (e) publish all SLAs concluded and/or amended and publish a standard industry SLA on its wholesale website;
 - (f) publish KPIs to demonstrate that a product is continually fit-for-purpose; and
 - (g) provide information which is required to support existing and future products in an accurate and timely manner to OAOs.
- 8.23 The 2011 KPI Decision required Eircom to publish on a publicly available website a set of KPIs across a range of products including the terminating segments of the Wholesale Leased Line Market.

- 8.24 The 2011 Access and Transparency Decision, further amended the transparency obligations that existed under the 2008 Decision, removing the obligation to publish pricing information for WLLs (Eircom Wholesale Leased Line product) of bandwidths greater than 10Mb/s.

Existing Price Control and Cost Accounting Remedies

- 8.25 In the 2008 Decision ComReg imposed on Eircom price control and cost accounting obligations in relation to the Wholesale Leased Lines market. These obligations were maintained in the 2012 Pricing Decision⁶⁸². In particular, the 2012 Pricing Decision specified that the prices charged for WLLs up to and including bandwidths of 2Mb/s were to be no more than the prices in place at the effective date, as published in Annex A of this latter Decision. WLLs with bandwidths above 2Mb/s, were to be offered to OAOs on the same terms and conditions equivalent to those offered to Eircom's retail arm. PPC pricing was specified to be cost oriented based on costs calculated on a forward-looking long run incremental costs ('**FL-LRIC**') or an alternate model, pending a future consultation. An obligation not to cause a margin squeeze was also imposed.
- 8.26 In the 2012 Pricing Decision Eircom was also directed to charge not less than the minimum price floors, as specified in a Similarly Efficient Operator ('**SEO**') test,⁶⁸³ so as not to cause a margin squeeze between related WLL services, including (but not limited to) PPCs. Eircom was further directed to base charges for PPCs on the basis of a Bottom Up Long Run Average Incremental Cost plus ('**BU-LRAIC plus**') methodology based on the use SDH network technology.

Existing Accounting Separation Remedies

- 8.27 In the 2008 Decision ComReg specified that Eircom was subject to the then relevant accounting separation decisions which were existing at the time of publication. These decisions have been revised and updated in the 2010 Accounting Separation Decision.⁶⁸⁴ In addition, the obligation to retain Accounting Separation remedies for terminating segments in the leased line market, was re-iterated in the 2012 Pricing Decision.

⁶⁸² ComReg Document No. 12/03, Decision D02/12 Response to Consultation Document No. 10/70 and 11/32: A final decision further specifying the price control obligation in the market for wholesale terminating segments of leased lines, published 2 February 2012 ('**2012 Pricing Decision**')

⁶⁸³ A Similarly Efficient Operator ('**SEO**') test is a test which seeks to establish the costs that an efficient operator similar to the incumbent in terms of efficiency would incur in providing services/s

⁶⁸⁴ ComReg Document 10/67, Decision D08/10, Accounting Separation and the Cost Accounting Review of Eircom Limited, August 2010 ('**2010 Accounting Separation Decision**').

8.28 Eircom publishes its separated accounts in order to comply with its current requirement to publish the financial results for the Wholesale Leased Line Market, via an Income Statement and Statement of Mean Capital Employed for each financial year. Additionally, ComReg has directed Eircom to provide to ComReg on an annual basis Additional Financial Statements detailing the financial results in a form which segments the Income Statement and the Statement of Mean Capital Employed between PPCs and WLLs and Next Generation Network ('**NGN**') Ethernet products in the wholesale terminating segment of leased lines. ComReg, also in the context of the 2008 Decision, required Eircom to further separate financial results for PPC and WLL products based on the bandwidth threshold of 155Mb/s, being a key differentiator in the segmentation of TI services provided into the Trunk and Terminating segments of the leased line market. The resulting financial reports allows ComReg to monitor the returns realised in the MI WHQA Markets and in the remaining regulated elements of the wholesale TI LL markets.

8.5 Assessment of Regulatory Approaches to Imposing Remedies in the LB TI WHQA Market

8.29 In Section 6 of this Decision, ComReg sets out its final view that Eircom has SMP in the LB TI WHQA Market. In Section 7 of this Decision ComReg identified a range of potential competition problems that may arise in this market, absent regulation, arising from Eircom's ability and incentives as a vertically integrated SMP Undertaking that competes with Access Seekers⁶⁸⁵ in both the retail and wholesale LL markets. This Decision maintains the position outlined in the 2016 Consultation and in the 2018 Further Consultation.

8.30 In this Section, ComReg assesses the regulatory options for addressing the competition problems that have been identified, before then imposing (or not) specific regulatory obligations on Eircom.

⁶⁸⁵ The main SPs active in the LB TI WHQA Market are BT, Eircom, Colt and enet.

Option of 'No Regulation' in the LB TI WHQA Market

- 8.31 In the 2016 Consultation⁶⁸⁶, ComReg considered whether the option of de-regulation or regulatory forbearance is appropriate in the LB TI WHQA Market. In the 2016 Consultation, ComReg proposed to forbear from applying regulatory obligations with respect to wholesale Analogue LLs. ComReg noted that at the end of 2015 there were only four such wholesale Analogue LLs in-situ. ComReg noted that the most recent delivery date for any of these lines was in 2002, i.e. it had been 14 years since any live wholesale Analogue LL was last provided. ComReg considered that this clearly demonstrated that Access Seekers did not use Analogue LLs and had been competing with Eircom without using this wholesale input. Given the low number of such Analogue LLs remaining, ComReg considered that it is no longer reasonable or proportionate to continue to impose any obligations on Eircom to supply any wholesale variant of this service. ComReg's position is to withdraw all such related obligations for Analogue LLs. This situation has not changed during the intervening period.
- 8.32 Similarly, ComReg had proposed to forebear from imposing regulatory obligations on Eircom in respect to wholesale end-to-end digital leased lines (WLLs) and wholesale Channelised E1 (2Mb/s) Access⁶⁸⁷ LL services. In the 2016 Consultation, ComReg was of the preliminary view that given the extent of interconnects currently in place it was possible for OAOs, in the presence of regulation of the LB TI WHQA Market, to compete in the provision of digital leased lines using PPC inputs. As discussed later⁶⁸⁸, obligations with respect to the supply of PPCs are the access remedy which is to be applied to the LB TI WHQA Market. ComReg's position is that this PPC wholesale input is sufficient to allow an Access Seeker to replicate Eircom's retail TI LL services and thereby, compete at the retail level.

⁶⁸⁶ Paragraphs 8.27 to 8.32 of the 2016 Consultation.

⁶⁸⁷ This is the wholesale product listed in Issue 1.0 of Eircom's "Wholesale Leased Line Product Description" as currently published on its wholesale website as distinct to E1 Channelised Links required for the delivery of sub 2Mb/s PPC EULs.

⁶⁸⁸ Paragraphs 8.70 to 8.73 of this Decision.

- 8.33 As noted in paragraph 8.11 above, Regulation 8(1) of the Access Regulations and Regulation 27(4) of the Framework Regulations require ComReg to impose regulation on Undertakings designated as having SMP. In Section 6 of this Decision, ComReg set out its view that LB TI WHQA Market is not effectively competitive (and is not likely to become effectively competitive within the timeframe covered by this review). Also in Section 7, ComReg identified a range of competition problems that could occur in the LB TI WHQA Market and related markets, absent regulation.
- 8.34 In view of this assessment, it is ComReg's position that the LB TI WHQA Market (and downstream markets) would be unlikely to function effectively absent regulation. This would not be in the interest of promoting sustainable competition. ComReg has set out its position that Eircom has the ability and incentive to exclude or foreclose Access Seekers competing in the provision of wholesale and/or retail LB TI LLS by refusing to supply them with its LB TI WHQA products, services and facilities (including constructive refusal), or by setting prices at an excessive level⁶⁸⁹.
- 8.35 In the 2016 Consultation and 2018 Further Consultation, it was ComReg's view that the option of regulatory forbearance in the LB TI WHQA Market was not, therefore, appropriate or justified. ComReg maintains this position. The relevant issue which was considered, therefore, related to what form of regulation is appropriate. In particular, which of the remedies identified in paragraph 8.11 above are appropriate having regard to the particular circumstances of the LB TI WHQA Market, the associated competition problems and taking account of the relevant statutory requirements to which ComReg must have regard to when imposing remedies. ComReg sets out its position on these issues below. ComReg's position that the option of regulatory forbearance in the LB TI WHQA Market is not appropriate or justified.

Option to impose remedies in the LB TI WHQA Market

- 8.36 Eircom has to date been subject to a range of SMP based regulatory obligations as imposed primarily in the 2008 Decision and subsequent decisions. These obligations require Eircom to provide Access Seekers with access to TI LLS and to do so on non-discriminatory and transparent terms and conditions, including at regulated prices.
- 8.37 ComReg sets out below its position on the imposition (or not) of regulatory obligations on Eircom in the LB TI WHQA Market. These include:
- (a) Access obligations (discussed in paragraphs 8.38 to 8.116 below);

⁶⁸⁹ See Section 7 above.

- (b) Non-discrimination obligations (discussed in paragraphs 8.117 to 8.139 below);
- (c) Transparency obligations (discussed in paragraphs 8.140 to 8.195 below);
- (d) Price control and cost accounting obligations (discussed in paragraphs 8.196 to 8.274 below); and
- (e) Accounting separation obligations (discussed in paragraphs 8.275 to 8.285 below).

8.6 Access Remedies

Overview

- 8.38 As identified in Section 6 of this Decision, in providing retail and/or wholesale LB TI LLs, a number of Service Providers ('SPs') are largely dependent upon the use of Eircom's wholesale services due to its largely non-replicable, ubiquitous copper network. ComReg has already set out its view that Eircom has the ability and incentive to refuse to supply wholesale LB TI LLs to Access Seekers, either actually or constructively, or to provide these services on discriminatory or unreasonable terms and conditions (including in relation to price) and that this would likely hinder competition in the market. This would ultimately be detrimental to the interests of End Users, and would be contrary to the objectives set out in Section 12 of the Communications Regulation Acts 2002 (as amended) and Regulation 16 of the Framework Regulations.
- 8.39 ComReg's position is that there are likely to continue to be differences in bargaining power⁶⁹⁰ between Eircom and Access Seekers, particularly given the absence of credible alternative sources of supply within the timeframe of this review period.
- 8.40 Absent the presence of effective access remedies, ComReg would be left to address any such refusal by Eircom to supply wholesale LB TI LLs either through its general dispute resolution or compliance functions, all of which would occur after the fact, take time⁶⁹¹ to resolve, be specific to the bilateral circumstances between the relevant parties and not, thereby contributing to regulatory certainty amongst market players. As a consequence, this could be damaging to downstream competition and ultimately, to consumers.

⁶⁹⁰ ComReg considered the impact of CBP in Section 7 and considered it to be ineffective.

⁶⁹¹ Including time for ComReg to consider the dispute, along with possible public consultation and notification to the European Commission.

- 8.41 Such case-by-case interventions by ComReg would also be inefficient and ineffective in resolving the broader competition problem of denial/delayed access by an SMP operator. In this regard, it is worth noting that the European Commission has made several comments⁶⁹², under Article 7/7a of the Framework Directive, on the imposition by NRAs of SMP-type obligations pursuant to the exercise of dispute resolution functions. Such European Commission decisions clearly highlight the need for effective remedies to be imposed through a formal market analysis process. This includes the imposition of access (and other) obligations on any operators found to have SMP.
- 8.42 Additionally, ComReg could seek to use its *ex post* competition law powers. However, such powers could ultimately result in a finding by an Irish court that an Undertaking has abused its dominant position, but not necessarily require Access to be provided as an outcome to any such finding. Similar to the reasons above, a competition law approach would also take significant time to resolve, be specific to the relevant circumstances of the case and not contribute to regulatory certainty amongst market players.
- 8.43 Overall, therefore, ComReg considers that dispute resolution (which can be of relevance in resolving access and other issues in certain circumstances) and *ex post* competition law approaches would not be effective in resolving issues concerning denial of access in the LB Tl LL Markets.
- 8.44 Regulation 12(1) of the Access Regulations provides that ComReg may, in accordance with Regulation 8 of the Access Regulations, impose on an operator obligations to meet reasonable requests for Access to, and use of, specific network elements and associated facilities where ComReg considers that the denial of such access, or the imposition by operators of unreasonable terms and conditions having a similar effect, would:
- (a) hinder the emergence of a sustainable competitive retail market;
 - (b) not be in the interests of End Users; or
 - (c) otherwise hinder the objectives set out in Section 12 of the Communications Regulation Acts 2002 (as amended) and Regulation 16 of the Framework Regulations.

⁶⁹² See European Commission serious doubts/comments on Polish cases [PL/2010/1127](#), [PL/2011/1273](#), [PL/2011/1255-1258](#) and Latvian case [LV/2012/1296](#).

- 8.45 Obligations must also be proportionate and justified in the light of the objectives laid down in Section 12 of the Communication Regulation Act 2002 and Regulation 16 of the Framework Regulations.
- 8.46 Regulation 12(2)(a) to 12(2)(j) and Regulation 12(3) of the Access Regulations provide that ComReg can impose, where appropriate, additional access obligations and may attach conditions covering fairness, reasonableness and timeliness in relation to those access obligations.
- 8.47 As noted above, pursuant to Regulation 12(4) of the Access Regulations, when considering whether to impose obligations referred to in paragraphs (1) and (2) of Regulation 12 and, in particular, when assessing whether such obligations would be proportionate to the objectives set out in Section 12 of the Communications Regulation Acts 2002 (as amended), ComReg has to take the following factors into account:
- (a) the technical and economic viability of using or installing competing facilities, in light of the rate of market development, taking into account the nature and type of interconnection and access involved;
 - (b) the feasibility of providing the access proposed, in relation to the capacity available;
 - (c) the initial investment by the facility owner, bearing in mind the risks involved in making the investment;
 - (d) the need to safeguard competition in the long-term;
 - (e) where appropriate, any relevant intellectual property rights; and
 - (f) the provision of pan-European services.
- 8.48 The relevant provisions are taken into account below in ComReg's consideration of the access remedies that ComReg is imposing upon Eircom in order to address the competition problems identified in Section 7. An overview of Eircom's existing access obligations has also been provided in paragraphs 8.17 to 8.20 above.

Consideration of statutory criteria on proposed access obligations

- 8.49 In paragraphs 8.13 and 8.47 above, ComReg set out a range of statutory criteria that ComReg must consider when imposing access obligations. These criteria are considered below having regard to the proposed access obligations set out in paragraphs 8.61 to 8.116 below.

- (a) **Technical and economic viability of using or installing competing facilities:** In Sections 5 and 6, ComReg defined the LB TI WHQA Market and has set out its position that existing competition, potential competition and Countervailing Buying Power ('CBP') are unlikely to result in effective competition within such a market. In light of this, using or installing competing facilities to provide LB TI WHQA products is not likely to be economically feasible within the period of this review. This is evidenced by the lack of meaningful independent entry into the LB TI WHQA Market since the 2008 Decision and Eircom's high and persistent market share. On a forward-looking basis, ComReg does not consider that barriers to entry may sufficiently be eroded over time (given, for example, TDM is a legacy technology with demand for LLs declining, SPs are not likely to commit to investments given the risks they will be sunk and non-recoverable). However ComReg does not consider it likely that any market entry will materially alter the competitive position within the LB TI WHQA Market within the period of this review. Eircom has to date been providing LB TI WHQA products, services and facilities and it is, therefore, technically viable to do so for the period of the review.
- (b) **Feasibility of providing access in relation to capacity available:** Access to LB TI WHQA products, services and facilities are currently provided by Eircom, albeit on foot of existing regulatory obligations. On a forward-looking basis, ComReg is not aware that there would be any material capacity constraints that would give rise to Eircom facing difficulties in meeting the proposed access obligations. Indeed, as noted in Sections 5 and 6, given the overall decline in LB TI LLs since the 2008 Decision, it is likely that spare capacity exists on Eircom's network, such that capacity constraints are not likely to unduly restrict Eircom's ability to meet the proposed access obligations.
- (c) **The need to safeguard competition:** In Section 7 and throughout this Section, ComReg has highlighted the impact on downstream competition and the impacts on End Users that could arise given Eircom's ability and incentives to potentially engage in exploitative or exclusionary behaviours in the LB TI WHQA Market and related markets (absent regulation). These include, *inter alia*, actual or constructive denial of access, excessive pricing and other behaviours which could damage the development of sustainable competition in the LB TI WHQA Market. ComReg considers that imposing access (and other obligations) in the LB TI WHQA Market will ultimately promote competition in the retail LB TI WHQA Market, to the benefit of consumers.
- (d) **Intellectual property rights:** ComReg's position is that intellectual property rights are not likely to be a significant concern in the context of the provision of Access to LB TI WHQA products, services and facilities.

(e) **Pan European Services:** ComReg's position is that its proposed approach should facilitate the provision of pan-European services since the proposed approach is consistent with the policies of the European Commission and other NRAs. Consistent regulation of TI LLs across the EU will help to support a seamless provision of pan-European services by allowing SPs in other Member States to provide electronic communications services in Ireland.

8.50 In view of the above, ComReg's position is that the obligations being imposed requiring Eircom to provide Access to LB TI WHQA products, services and associated facilities, are proportionate and justified.

8.51 ComReg has also considered whether access obligations would be sufficient in themselves to resolve the identified competition problems. For the reasons set out in the discussion of the other remedies below, ComReg does not consider this to be the case. For example, the imposition of access obligations alone would not resolve issues such as excessive pricing, discrimination on price or quality grounds, or ensure transparency of terms and conditions of access.

8.52 An overview of existing access obligations is set out in paragraphs 8.17 to 8.20 above.

Imposition of Access Remedies

Introduction

8.53 In paragraphs 7.23 and 7.24 of the 2018 Further Consultation and paragraphs 8.36 to 8.93 of the 2016 Consultation, ComReg outlined its preliminary views on the imposition of access remedies upon Eircom in the LB TI WHQA Market.

8.54 In Annex 1, paragraphs A1.411 to A1.452 of this Decision, ComReg summarises the main views of Respondents on the Access obligations that were proposed in the 2018 Further Consultation, followed by ComReg's assessment of Respondents' views.

8.55 Of the seven Respondents to the 2018 Further Consultation, six expressed views on issues relating to the proposed access remedies as set out in the 2018 Further Consultation (namely ALTO, BT, Eircom, enet, Verizon and Vodafone).

8.56 Four Respondents (Eircom, enet, Verizon and Vodafone) agreed with ComReg's proposal for access remedies in the LB TI WHQA Access Market.

8.57 Two Respondents (ALTO, BT) broadly agreed with ComReg's proposal for access remedies in the LB TI WHQA market. However, they disagreed with certain aspects of ComReg's proposal.

8.58 Zayo did not express any views.

8.59 Respondents' views on the access remedies are grouped into the following themes:

- (a) High Level Feedback (summarised in paragraphs A1.419 to A1.421 of Annex 1);
- (b) Channelised E1 (2Mb/s) LLs should not be deregulated (summarised in paragraphs A1.427 to A1.430 of Annex 1);
- (c) Obligation to negotiate in good faith should mirror the obligation in the MI WHQA Markets (summarised in paragraphs A1.433 to A1.435 of Annex 1);
- (d) Retirement of Legacy Services process to be transparent (summarised in paragraphs A1.438 to A1.440 of Annex 1);
- (e) Requirements governing fairness, reasonableness and timeliness of Access should mirror the obligation in the MI WHQA Markets (summarised in paragraphs A1.446 to A1.448 of Annex 1); and
- (f) Interconnect Regulation (summarised in paragraph A1.451 of Annex 1 below).

8.60 Having regard to the analysis carried out in the 2016 Consultation and 2018 Further Consultation and having assessed Respondents views (see Annex 1, paragraphs A1.411 to A1.450), ComReg has maintained its position as set out in the 2016 Consultation and 2018 Further Consultation. ComReg's position is that it is imposing upon Eircom the access obligations set out in paragraphs 8.61 to 8.116 below.

Access Remedies to be imposed

- 8.61 ComReg is imposing the following access remedies upon Eircom in the LB TI WHQA Market:
- (a) To meet reasonable requests for Access to LB TI WHQA products, services and facilities (discussed in paragraphs 8.63 to 8.65 below); and
 - (b) Additional Access Remedies (discussed in paragraphs 8.66 to 8.110 below).
- 8.62 The access remedies ComReg is imposing on Eircom in the LB TI WHQA Market are set out in Section 7 of the Decision Instrument⁶⁹³.

To meet reasonable requests for Access to LB TI WHQA products, services and facilities

- 8.63 ComReg considers it necessary to impose a range of access obligations upon Eircom which are ultimately intended to facilitate sustainable competition in downstream markets.

⁶⁹³ The Decision Instrument is set out in Annex 8 of this Decision.

- 8.64 ComReg's position is that, pursuant to Regulation 12(1) of the Access regulations, Eircom shall be required to meet all reasonable requests from Undertakings for the provision of Access to LB TI WHQA products, services and facilities.
- 8.65 As noted in Section 6, ComReg does not consider that existing or potential competition would effectively constrain Eircom's market power within the lifetime of this market review. In particular, ComReg has noted that competition has and, for the period of this review, is likely to continue to be heavily dependent on availability of wholesale Access to LB TI WHQA products, services and facilities. In this respect, Access to these elements is necessary to maintain competition and to minimise foreclosure concerns that could arise, absent such regulation.

Additional Access Remedies

- 8.66 In addition, apart from the general obligation above to meet reasonable requests for Access to LB TI WHQA products, services and facilities, ComReg is imposing requirements upon Eircom to provide a range of specific products, services and facilities, as well as more general requirements governing this.
- 8.67 In this respect, ComReg is imposing the following specific obligations upon Eircom in order to address identified competition problems and ultimately to promote the development of competition to the benefit of End Users:
- (a) an obligation to meet reasonable requests for Access and to provide Access to Partial Private Circuits (discussed in paragraphs 8.70 to 8.80 below);
 - (b) an obligation to negotiate in good faith (discussed in paragraphs 8.81 to 8.89);
 - (c) an obligation not to withdraw Access to facilities already granted (discussed in paragraphs 8.90 to 8.93);
 - (d) an obligation to grant open Access to technical interfaces, protocols or other key technologies (discussed in paragraph 8.94);
 - (e) an obligation to provide Access to OSS or similar software systems (discussed in paragraphs 8.95 to 8.97); and
 - (f) an obligation to meet certain conditions dealing with fairness, reasonableness and timeliness of Access (discussed in paragraphs 8.98 to 8.110 below),
- 8.68 ComReg is also removing existing obligations to provide Access to digital end-to-end WLLs, Channelised E1 (2Mb/s) LLs (as distinct from PPC E1 Channelised Links⁶⁹⁴) and Analogue LLs (discussed in paragraphs 8.111 to 8.116 below).

⁶⁹⁴ This service allows Access Seekers to nominate an individual 2Mb/s timeslot on a Transport Link bearer which can be subdivided in order to allow connection to sub 2Mb/s EULs

- 8.69 The consideration of and justification for the imposition of the above access remedies and the withdrawal of other obligations is discussed below. Where Respondent made specific comments on the obligations, ComReg makes reference (see Annex 1) to these comments below.

An obligation to meet reasonable requests for Access and to provide Access to PPCs

- 8.70 In addition to the general obligation to meet reasonable requests for Access ComReg is requiring, pursuant to Regulation 12 of the Access Regulations, that Eircom must provide Access to LB PPC EULs (64Kb/s up to and including 2Mb/s) and associated PPC Transport Link interconnect circuits (further described in paragraphs 8.74 to 8.80 below).
- 8.71 The access obligations that ComReg is imposing here, and elsewhere in this Section, effectively results in a continuation of Eircom's offer of the existing LB TI WHQA products called PPCs (EULs up to and including 2Mb/s), in accordance, with the product descriptions and terms and conditions of supply or use, as specified in the current version of the Eircom's Leased Line Reference Offer ('LLRO')⁶⁹⁵ and Partial Private Circuit Product Description⁶⁹⁶, and in addition, in accordance with the obligations to be imposed discussed elsewhere in this Decision.
- 8.72 ComReg's position is that obligations requiring Eircom to provide access to these products is necessary to ensure the development of sustainable and effective downstream competition and to minimise foreclosure concerns that could arise, absent regulation. Otherwise, absent regulation, it is ComReg's position that given Eircom is a vertically integrated Undertaking with SMP in the LB TI WHQA Market, it has the ability and incentive to refuse to provide access to LB TI WHQA products, services and facilities.
- 8.73 For these reasons, ComReg has decided that Eircom should continue to be required, pursuant to Regulation 12(2) of the Access Regulations, to provide access to LB TI WHQA products identified in paragraph 8.71 above.

⁶⁹⁵ Currently LLRO version 3 dated 1 July 2019, as published at https://www.openeir.ie/Reference_Offers/?selectedtab=llro, as may be amended from time to time and in accordance with the obligations proposed elsewhere in this Decision. The LLRO is the offer of contract by Eircom to Undertakings in respect of the provision of Wholesale TI LL products, services and facilities.

⁶⁹⁶ The relevant products are described in Eircom's PPC Product Description, as published at http://www.openeir.ie/Products/Data/Partial_Private_Circuits/.

- 8.74 Pursuant to Regulation 12(2)(f) and 12(2)(i) of the Access Regulations, ComReg's position is that Eircom is to be required to provide Access to a range of specific PPC related Interconnection Services that are associated with the provision of Access to LB TI WHQA LLs.
- 8.75 Interconnect Services relate to the physical and/or logical connectivity between network aggregation points (typically Exchanges or their equivalents) to facilitate the handover of LLs within or between Undertakings' networks.
- 8.76 Eircom currently supplies a range of Interconnection Services ⁶⁹⁷ (referred to as PPC Transport Links) to Access Seekers purchasing PPC EULs pursuant to its existing SMP obligations. The PPC Transport Link variants provided are as follows:
- (a) In-Span Handover ('**ISH**') which means the connection between the Eircom Exchange⁶⁹⁸ or node and the Access Seeker's nominated Point of Handover. In this instance, the Access Seekers extends its network to a point close to the Eircom node (this can be in an underground chamber, for example);
 - (b) Customer-Sited Handover ('**CSH**') which means that Eircom provide the transmission path from the Eircom Exchange or node to the Access Seekers premises, without the requirement for the Access Seeker to extend their network;
 - (c) 2Mb/s Transport Links, which are a form of CSH which provide a 2Mb/s connection between Eircom's Exchange and the Access Seeker's nominated Point of Handover; and
 - (d) STM-x Transport Links, which are a form of CSH which provide a 155/4*155/16*155Mb/s connection between Eircom's Exchange and the Access Seeker's nominated Point of Handover.
- 8.77 ComReg notes that Eircom is currently developing a PPC Transport Link In-Building Handover ('**IBH**')⁶⁹⁹ in response to an Access request.

⁶⁹⁷ The range of Interconnect Services (including 2Mb/s and STM-X) currently supplied by eircom are described in the LLRO (V3.0, dated 1 July 2019). STM-X refers to the following capacities: STM-1, STM-4 and STM-16 as described in the LLRO.

⁶⁹⁸ "Exchange" means an Eircom network premises or equivalent facility used to house network and associated equipment and includes an Aggregation Node or WDM Node. The Exchange sometimes, but not always, houses the Metropolitan Point of Presence (MPoP);

⁶⁹⁹ Eircom commenced development of a PPC Transport Link In-Building Handover ('IBH'), RAP ID 567 on 11 October 2018.

- 8.78 The Transport Link product supports the supply of EULs to Access Seekers and in the context of this review, it is ComReg's position that the continued imposition of obligations to provide such interconnection products is necessary to enable Access Seekers to purchase and connect to the EULs and thereby to compete in the LB TI LL markets.
- 8.79 For the avoidance of doubt while ComReg's position is to remove the obligation to supply wholesale Channelised E1 (2Mb/s) Access services (see further discussion in paragraphs 8.111 to 8.116 below) it is ComReg's position that Eircom continue to supply the Channelised E1 link service as part of its Transport Link product. This service allows Access Seekers purchasing Transport Links to nominate an individual 2Mb/s timeslot on the Transport Link bearer which can be subdivided in order to allow connection to sub 2Mb/s EULs. Eircom are also obliged to continue the provision of Transport Links as described in paragraph 8.76 above
- 8.80 Absent regulation, ComReg considers that Eircom would have the ability and incentive to leverage its SMP position in the LB TI WHQA Market by denying (outright or constructive) Access to the Interconnection Services described above or by acting in a discriminatory manner (say through offering preferential terms and conditions, including prices, to one group of purchasers over another).

To negotiate in good faith

- 8.81 Pursuant to Regulation 12(2)(b) of the Access Regulations ComReg's position is to continue to impose an obligation on Eircom to negotiate in good faith⁷⁰⁰ with Undertakings requesting Access to LB TI WHQA products, services and facilities.
- 8.82 Having regard to the competition problems identified in Section 7 of this Decision, ComReg considers this measure to be proportionate and justified in order to ensure that genuine bona fide negotiations take place between Eircom and Access Seekers in relation to access.
- 8.83 Eircom has the ability and incentive to expressly or constructively refuse to provide Access to LB TI WHQA. The obligation will also somewhat address imbalances between the bargaining powers of the respective parties in the negotiation process by reducing incentives to unnecessarily prolong negotiations and should also facilitate a more efficient and effective consideration of reasonable requests for Access and provision of such Access.

⁷⁰⁰ Amongst the factors that ComReg may have regard to in any assessment of Eircom's compliance with its obligation to negotiate in good faith, ComReg may consider the extent to which Eircom has adequately resourced such negotiations.

8.84 ComReg also notes that the obligation to negotiate in good faith implies that the responsibility rests with Eircom to demonstrate that its approach to negotiation with Undertakings is in good faith and that any unmet access requests can be shown to be unreasonable by reference to objective criteria. In this regard, recital 19 of the Access Directive states with respect to requests to SMP Undertakings for access that:

“...such requests should only be refused on the basis of objective criteria such as technical feasibility or the need to maintain network integrity.”

8.85 ComReg, therefore, proposes that should an access request be refused, or only partially met, then the objective criteria for refusing same should also be provided by Eircom to the requesting Access Seeker at the time of refusal. This will also improve regulatory effectiveness and efficiency should any complaint or dispute be raised with ComReg, as it will provide a useful audit trail for compliance-monitoring purposes.

8.86 ComReg notes ALTO and BT views (paragraphs A1.434 to A1.435) that the ‘to negotiate in good faith’ remedy in the LB TI WHQA market should be the same remedy as that specified in the MI WHQA Markets. ComReg’s position is that the ‘to negotiate in good faith’ remedy in the LB TI WHQA and MI WHQA Markets are identical, albeit the ‘to negotiate in good faith’ text in the MI WHQA Markets contains non-exhaustive examples where ComReg might draw inferences from Eircom’s behaviour and from the adequacy of the processes and controls if investigating an allegation of a failure to negotiate in good faith. Therefore, for the avoidance of doubt, ComReg has, in paragraphs 8.87 to 8.88 below, included these non-exhaustive examples of behaviours that ComReg might draw inferences from, if investigating an allegation of a failure to negotiate in good faith.

8.87 ComReg notes that the obligation to negotiate in good faith encompasses the way in which Eircom conducts the negotiations as well as the positions that it takes in them. In investigating an allegation of a failure to negotiate in good faith, ComReg might draw inferences from Eircom’s behaviour and from the adequacy of the processes and controls it has put in place to assure compliance with this obligation. For example, ComReg might draw adverse inferences from behaviours including, but not limited to the following:

- (a) a failure on the part of Eircom to behave in the way that a willing seller would behave when negotiating with a willing buyer;
- (b) a failure by Eircom to respond to proposals made by Access Seekers in a timely and constructive manner;

- (c) a failure by Eircom to deploy participants in the negotiations who had appropriate knowledge and authority, so that negotiations could proceed in a timely manner; the absence of effective controls to assure that decision-making processes within Eircom in relation to the negotiations could not be influenced by concerns about the commercial impact on Eircom's downstream retail business; and
- (d) the presence of incentives for individuals within Eircom who participated in or influenced the negotiations that might lead them to receive greater financial or other benefits if the negotiations were to be delayed, or to result in an outcome other than that which might have been freely negotiated between a willing buyer and a willing seller.

- 8.88 The precise nature of any investigation and the degree to which inferences might be drawn from behaviour would need to be assessed in the context of the actual circumstances of any particular case.
- 8.89 It is ComReg's position that the continuation of this remedy does not impose any significant burden on Eircom beyond that which would normally be expected to occur in circumstances involving fair commercial negotiations between parties.

An obligation not to withdraw Access to facilities already granted

- 8.90 Pursuant to Regulation 12(2)(c) of the Access Regulations, ComReg's position is that Eircom is to be subject to an obligation not, without the prior approval of ComReg, to withdraw Access to facilities already granted. For the avoidance of doubt, this does not mean there are no objectively justified circumstances for withdrawing Access to LB TI WHQA products, services and facilities (such as the unjustified non-payment of wholesale charges), however, this would have to be considered on the basis of the facts of the particular circumstances governing the proposed withdrawal of Access.
- 8.91 Having regard to the competition problems identified in Section 7, ComReg is of the view that Eircom would have the ability and incentive to delay, withdraw or refuse Access to LB TI WHQA products, services and facilities, either outright or constructively, resulting in restrictions and/or distortions in competition to the detriment of consumers. ComReg considers that the obligation, requiring Eircom to seek ComReg's approval prior to any withdrawal of Access, will promote regulatory certainty for all parties without unduly restricting investment incentives.
- 8.92 ComReg does not agree with Verizon's view (see paragraphs A1.439 to A1.440 of Annex 1) that ComReg had proposed a process by which Eircom can request ComReg to allow the retirement of legacy leased lines services in the LB TI WHQA Market during the course of the market review. ComReg outlines its reasons for disagreeing with Verizon's view in paragraphs A1.441 to A1.445 of Annex 1).

- 8.93 More specifically, ComReg position is that Eircom should notify ComReg, in writing, of any proposal to withdraw Access to facilities already granted, giving detailed reasons for the proposal, including the impacts that the withdrawal of Access is likely to have on existing purchasers of LB TI WHQA products, services and facilities. Where Eircom proposes to withdraw products, services or facilities, ComReg would retain the right to consult with relevant parties, prior to making a decision on whether to grant or to withhold its approval. ComReg also notes that within the period of this review it is possible that Eircom may seek to put in place a programme to commence the retirement of its copper infrastructure. Any such programme would be considered by ComReg having regard to the principles to be established on foot of ComReg's finalisation of the issues subject to the 2016 Transition from Eir's Copper Network⁷⁰¹ and subsequent consultation(s).

An obligation to grant open Access to technical interfaces, protocols and other key technologies

- 8.94 Pursuant to Regulation 12(2)(e) of the Access Regulations, ComReg's position is to impose an obligation on Eircom to grant open Access to technical interfaces, protocols and other key technologies that are indispensable for the interoperability of LB TI WHQA products, services and facilities. Having regard to the competition problems identified Section 7, ComReg considers that this remedy is both justified and proportionate in order to ensure that, in the context of the provision of Access to LB TI WHQA products, services and facilities, interoperability of networks and services is ensured.

To provide Access to OSS or similar software systems

- 8.95 Access to Eircom's Operational Support Systems ('**OSS**') plays an important role in the provisioning and service assurance of wholesale services both for Access Seekers and for Eircom's downstream business. This is because Access to OSS or similar software systems is essential to the effectiveness and efficiency of the supply of the products, services and facilities that are used as inputs to the supply of LB TI LL to End Users (or other wholesale customers).

⁷⁰¹ Transition from Eir's copper network, Proposed principles and notification procedures, [ComReg Document 16/01](#), 16 January 2016 ('**2016 Transition from Eir's Copper Network**').

- 8.96 In the absence of Access Seekers being able to gain effective and efficient Access to Eircom's OSS (or similar software systems), they would likely be at a significant competitive disadvantage relative to Eircom's own downstream businesses in providing retail LB TI LLs. Having regard to the competition problems discussed in Section 7, ComReg considers that this remedy is necessary to support Eircom's general access obligation because Eircom has the ability and the incentives to impede Access to its OSS in order to leverage its market power into downstream and adjacent markets.
- 8.97 As such, pursuant to Regulation 12(2)(h) of the Access Regulations, ComReg's position is that it is imposing an obligation on Eircom to provide Access to OSS or similar systems to ensure fair competition in the provision of services.

Requirements governing fairness, reasonableness and timeliness of Access

- 8.98 As noted in Section 7, ComReg considers that Eircom has the ability and incentive to constructively refuse to supply access (including delay or other behaviours which have the effect of raising rivals' costs) to LB TI WHQA products, services and facilities by engaging in non-price leveraging behaviours.
- 8.99 ComReg's position is that pursuant to Regulation 12(3) of the Access Regulations, certain conditions should, therefore, be attached to Eircom's access obligations in order to ensure that Access to LB TI WHQA products, services and facilities are provided in a fair, reasonable and timely manner. Such conditions should also ensure consistency in the treatment of requests for Access. ComReg considers that this remedy will ultimately contribute to the development of sustainable competition, to the ultimate benefit of consumers.
- 8.100 In the 2016 Consultation, ComReg was of the view to impose requirements obliging Eircom to conclude SLAs in respect of the LB TI WHQA products, services and facilities provided. Eircom was required:
- (a) to conclude, maintain or update, as appropriate, legally binding SLAs with Access Seekers;
 - (b) to ensure that the SLAs include provision for service credits to be provided by Eircom to Access Seekers in the event that committed service levels are not met;
 - (c) to ensure that SLAs detail the methodology for the calculation of service credits and also include the provision of an example calculation;
 - (d) to ensure that the application of Service Credits, where they occur, is applied automatically, and in a timely and efficient manner;
 - (e) to ensure that the level of the Service Credits are fair and reasonable;

- (f) to ensure that the SLAs include performance metrics, the latter being the measure of performance levels to be achieved by Eircom within a specified period, as calculated in accordance with the methodology and service parameter definitions set out in its SLAs; and
- (g) to negotiate in good faith with Access Seekers in relation to the conclusion of legally binding and fit-for-purpose SLAs.

8.101 In the 2018 Further Consultation⁷⁰², ComReg acknowledged that there have been a number of instances in other regulated markets where delays have arisen in SLA negotiations. While ComReg noted that this market is in decline and there are negligible volumes of new lines being ordered, ComReg considered appropriate to bring some of the SLA obligations more in line with current regulatory practice.

8.102 Hence, in the 2018 Further Consultation, ComReg updated the wording of the obligations relating to SLAs in the LB TI WHQA Market, in particular, that:

- (a) the requirement to conclude, maintain or update, as appropriate, legally binding SLAs with Access Seekers, also includes the requirement that such SLAs include committed service levels and that SLAs should encourage an efficient level of performance (i.e. this requirement replaced the requirement in paragraph 8.100(a) above);
- (b) service credits are to be provided by Eircom to Access Seekers in the event that committed service levels are not met. These refer to a financial credit which is provided by Eircom to an Access Seeker where Eircom has failed to meet the service levels which Eircom commits to from time-to-time in its SLA (i.e. this requirement replaces the requirement outlined in paragraph 8.100(b) above); and
- (c) the requirement to ensure that SLAs include performance metrics, was removed, given the clarification above that SLAs should include 'committed service levels' and having regard to the clarifications provided in the context of Transparency remedies (i.e. requirement outlined in paragraph 8.100(f) removed).

8.103 In this Decision, ComReg's position is to impose requirements obliging Eircom to conclude SLAs in respect of the LB TI WHQA products, services and facilities provided. This requirement is specified in more detail below, namely that Eircom is being required:

⁷⁰² Paragraphs 7.36 to 7.38 of the 2018 Further Consultation.

- (a) to conclude, maintain or update, as appropriate, legally binding SLAs with Access Seekers, which includes the requirement that such SLAs include committed service levels and that SLAs should encourage an efficient level of performance;
- (b) to ensure that service credits are to be provided by Eircom to Access Seekers in the event that committed service levels are not met. These refer to a financial credit which is provided by Eircom to an Access Seeker where Eircom has failed to meet the service levels which Eircom commits to from time-to-time in its SLA;
- (c) to ensure that SLAs detail the methodology for the calculation of service credits and also include the provision of an example calculation;
- (d) to ensure that the application of Service Credits, where they occur, is applied automatically, and in a timely and efficient manner;
- (e) to ensure that the level of the Service Credits are fair and reasonable; and
- (f) to negotiate in good faith with Access Seekers in relation to the conclusion of legally binding and fit-for-purpose SLAs.

8.104 ComReg has updated the wording⁷⁰³ of the obligations relating to SLAs in the LB TI WHQA Market, in particular, that:

- (a) Eircom is to be required to conclude, maintain and update, as appropriate, legally binding SLAs with Access Seekers⁷⁰⁴, including the requirement that such SLAs include committed service levels and should encourage an efficient level of performance;
- (b) service credits are to be provided by Eircom to Access Seekers in the event that committed service levels are not met. These refer to a financial credit which is provided by Eircom to an Access Seeker where Eircom has failed to meet the service levels which Eircom commits to from time-to-time in its SLA; and
- (c) the requirement to ensure that SLAs include performance metrics, has been removed, given the clarification above, in paragraph 8.104(b), that SLAs should include 'committed service levels' and having regard to the clarifications provided in paragraphs 8.105 to 8.108 below.

⁷⁰³ See paragraph 7.37 of the 2018 Further Consultation.

⁷⁰⁴ See paragraph 8.2 of the Draft Decision, Appendix 4 of the 2018 Further Consultation.

- 8.105 ComReg is also of the view that SLAs should incentivise Eircom to provide LB TI WHQA products, services and facilities to a standard that meet the needs of Access Seekers and allows them to provide services of the required quality in downstream markets. ComReg is of the view that SLAs should include committed service levels and Service Credits such that they adequately incentivise Eircom to deliver an efficient level of service quality.
- 8.106 A failure by Eircom to meet SLA committed service levels can result in costs being incurred by Access Seekers resulting from increased churn or payment of compensation to End Users by way of, for example, waiving service charges. ComReg's position is that it is reasonable that the Service Credits to be paid by Eircom to Access Seekers in the event that Eircom does not meet the committed service levels in its SLAs should be such that the Access Seekers can recover the reasonable costs incurred, arising from such a failure by Eircom.
- 8.107 SLAs should also specify the circumstances that trigger the payment of Service Credits, such as, but not limited to, a failure by Eircom to achieve committed service levels, or the occurrence of certain specified events (such as, but not limited to, incidents of service outage or deterioration), and/or other such criteria as appropriate.
- 8.108 SLAs also establish committed service levels against which the standards of performance achieved by Eircom can be readily measured and compared. ComReg is therefore also proposing, in the context of transparency obligations, to impose requirement on Eircom to publish its actual achieved aggregate levels of performance relative to the committed service levels in its SLAs.
- 8.109 These obligations will:
- (a) encourage Eircom to achieve acceptable levels of service performance in the provision of services to Access Seekers;
 - (b) ensure that Eircom engages in genuine bona fide negotiations with Access Seekers when seeking to agree appropriate SLAs;
 - (c) ensure that Eircom is adequately incentivised to achieve the targets set out in its SLAs by ensuring that any service credits to be paid by Eircom to Access Seekers are fair and reasonable; and
 - (d) hold Eircom accountable for its committed service levels by establishing a mechanism for Access Seekers to receive service credits where service levels are not achieved by Eircom.

- 8.110 ComReg does not agree with ALTO's and BT's views expressed in paragraphs Annex 1 paragraphs A1.447 (a), (c) and A1.448 respectively, that the SLA obligations such as those proposed for Zone B MI WHQA Markets should be imposed as remedies in the LB TI WHQA Market for the reasons outlined in Annex 1 paragraph A1.450.

Withdrawal of certain existing Wholesale TI LL access remedies (Analogue Leased Lines, WLLs, and Channelised E1s)

- 8.111 In paragraph 8.32 above, ComReg has already discussed the potential removal of the obligations to supply Wholesale LL and Channelised E1 (2Mb/s) Access services for TI digital end-to-end WLLs up to and including 2Mb/s. For the avoidance of doubt, this does not refer to PPC E1 Channelised Links required to deliver sub-2Mb/s EUL LLs. This proposed withdrawal refers specifically to Eircom's wholesale's digital end-to-end WLL product for bandwidths from 64Kb/s up to and including 2Mb/s and "Channelised E1 Access" products for bandwidths $N \times 64\text{Kb/s}$ (where N can be from a value of 1 up to 31).
- 8.112 ComReg's position is that the requirement to provide a PPC variant of these products is sufficient to ensure a competitive alternative to Eircom's TI digital retail LLs. An SP can enter the market by interconnecting with a Transport Link in one location and purchasing EULs from Eircom. All Access Seekers who would wish to provide a LB TI LL service (either at wholesale and/or retail level) are interconnected with Eircom for voice services using TDM based interconnection at/adjacent to Eircom Exchanges and these interconnects could be used to connect PPC EULs. There is therefore no significant barrier to Access Seekers gaining Access to the PPC remedy in the LB WHQA Market.
- 8.113 ComReg disagrees with ALTO and BT view (Annex 1 paragraphs A1.429 to A1.430) that Channelised E1 (2Mb/s) LLs should not be deregulated. ComReg's assessment of ALTO and BT views are outlined in Annex 1 paragraphs A1.431 to A1.432.
- 8.114 The obligation to provide Access to wholesale Analogue Leased Lines is being withdrawn. As discussed in paragraph 8.31 above, ComReg is also of the view that an obligation to provide a wholesale Analogue LL product is not warranted or reasonable in the current circumstances of the market (it follows logically that a requirement to provide a wholesale Analogue EUL, were it technically possible to do so, is not warranted or justified and ComReg does not impose obligations requiring the provision of such).

- 8.115 ComReg is withdrawing the obligation to provide in-situ transfer of end-to-end WLLs. This obligation was designed to facilitate the transfer of customers between SPs to foster the development of competition. ComReg decided on the removal of the requirement to provide end-to-end wholesale digital LLs due to the extremely low demand for new lines (no new deliveries in the past 2 years) in addition to the low volume of in-situ lines (less than 100). For these reasons, ComReg considers that this obligation is no longer proportionate or justified.
- 8.116 Having assessed Respondents views (see paragraphs A1.427 to A1.430 of Annex 1), ComReg's position is that these obligations should not be re-imposed. These remedies will be withdrawn, after a 'sunset' or withdrawal period in order to facilitate purchasers making any necessary adjustments at the wholesale and/or retail level. This is to avoid possible situations where End Users could be disconnected due to the proposed removal of access obligations, amongst others, and to allow Access Seekers a sufficient period in which to make other arrangements. This would provide adequate time for Access Seekers to negotiate commercial contracts with Eircom and/or alternate suppliers or to connect customers directly using their own networks.

8.7 Non-Discrimination Remedies

Overview

- 8.117 The application of an *ex ante* non-discrimination remedies seeks to prevent a dominant, vertically-integrated Undertaking from engaging in discriminatory (price or non-price) behaviour that could hinder the development of sustainable and effective competition in wholesale and retail markets.
- 8.118 In Section 7 ComReg identified that, absent regulation, Eircom has the ability and incentive to engage in behaviours that could adversely impact upon downstream competition and consumers. For example, Eircom could offer LB TI WHQA products, services and facilities at discriminatory prices, terms and conditions, and service/repair quality to different Access Seekers or between Access Seekers and its own downstream arm.
- 8.119 As noted in the Access Directive⁷⁰⁵, the principle of non-discrimination is designed to ensure that Undertakings with market power do not distort competition, in particular, where they are vertically integrated Undertakings that supply services to Undertakings with whom they compete on downstream markets.

⁷⁰⁵ Recital 17 of the Access Directive.

- 8.120 Regulation 10 of the Access Regulations provides that ComReg can impose non-discrimination remedies in relation to access or interconnection on an Undertaking designated with SMP, in particular to ensure it behaves in such a way that it:
- (a) applies equivalent conditions in equivalent circumstances to other Undertakings providing equivalent services; and
 - (b) provides services and information to others under the same conditions and of the same quality as it provides for its own services or those of its subsidiaries or partners.
- 8.121 In this respect, non-discrimination obligations can be standalone, but can also support other obligations such as those relating to access, transparency and price control.

Imposition of Non-Discrimination Remedies

Introduction

- 8.122 In paragraphs 7.53 to 7.54 of the 2018 Further Consultation and paragraphs 8.94 to 8.111 of the 2016 Consultation, ComReg outlined its views on the imposition of non-discrimination remedies upon Eircom in the LB TI WHQA Market.
- 8.123 Five of the seven Respondents expressed views on issues relating to the proposed non-discrimination remedies⁷⁰⁶ for the LB TI WHQA Market (namely ALTO, BT, enet, Verizon and Vodafone).
- 8.124 Three Respondents (enet, Verizon and Vodafone) agreed with ComReg's proposal for non-discrimination remedies in the LB TI WHQA Access market.
- 8.125 Two Respondents (ALTO, BT) broadly agreed with ComReg's proposal for non-discrimination remedies in the LB TI WHQA Access market. However, they disagreed with ComReg's proposal on the non-discrimination standard of Equivalent of Outputs ('**EoO**'). Both Respondents (ALTO, BT) sought the non-discrimination standard of Equivalent of Inputs ('**EoI**') (summarised in paragraphs A1.457 to A1.461, Annex 1).
- 8.126 Eircom and Zayo did not express any views.

⁷⁰⁶ Paragraphs 7.53 to 7.54 of the 2018 Further Consultation.

8.127 Having regard to the analysis carried out in the 2018 Further Consultation and having assessed Respondents views (see Annex 1, paragraphs A1.453 to A1.464), ComReg has maintained its position as set out in the 2016 Consultation and 2018 Further Consultation. ComReg's position is to impose upon Eircom the non-discrimination obligations set out in paragraphs 8.128 to 8.139 below.

Non-Discrimination Remedies to be imposed

8.128 ComReg's position is to continue to impose general non-discrimination obligations on Eircom in order to address identified competition problems (refer to Section 7 of this Decision) that could arise in the LB TI WHQA Market and adjacent markets.

General non-discrimination remedies

8.129 ComReg's position is that Eircom is to be required to:

- (a) apply equivalent conditions in equivalent circumstances to other Undertakings requesting, or being provided with Access (including Access to LB TI WHQA products, services and facilities) or requesting or being provided with information in relation to such Access; and
- (b) provide access (including Access to LB TI WHQA products, services and facilities) and information to all other Undertakings under the same conditions and of the same quality as Eircom provides to itself or to its subsidiaries, affiliates or partners.

8.130 The non-discrimination remedies ComReg is imposing on Eircom in the LB TI WHQA Market are set out in Section 9 of the Decision Instrument (Annex 8)

8.131 For the avoidance of doubt, it is ComReg's view that the non-discrimination obligations above should apply irrespective of whether or not a specific request for services or information has been made by an Undertaking to Eircom. For example, if information or a service is provided by Eircom following a request from one Undertaking, Eircom is obliged to offer this to other Undertakings, notwithstanding that such other Undertakings have not made a request for it (or known to make a request for it). This is to ensure fair treatment of all Undertakings.

8.132 These obligations are intended to ensure that Eircom does not favour its downstream arm, or unduly favour any particular Access Seeker in the provision of LB TI WHQA products, services and facilities such that it might otherwise restrict or distort competition in this market or any downstream or adjacent market, ultimately impacting on the development of sustainable retail competition.

Specification of the non-discrimination standard

- 8.133 ComReg does not agree with ALTO's and BT's views expressed in paragraphs Annex 1 paragraphs A1.458 to A1.462, that EoI and/or the Statement of Compliance ('SoC') should be imposed as remedies in the LB TI WHQA Market for the reasons outlined in Annex 1 paragraphs A1.463 to A1.464.
- 8.134 ComReg's position is that the non-discrimination obligations should be applied on, at least, an Equivalence of Outputs ('EoO')⁷⁰⁷ standards basis. When Eircom provides Access Seekers with Access to LB TI WHQA products, services and facilities, including Access to information, Eircom would be required to do so in a manner which achieves the same standards in terms of functionality, price, terms and conditions, service and quality levels as Eircom provides to itself, albeit potentially using different systems and processes.
- 8.135 ComReg considers that this EoO standard is appropriate in the context of LB TI WHQA products, services and facilities, particularly given that the existing provision of LB TI WHQA products, services and facilities is largely over a legacy network and legacy systems. ComReg considers that adopting an Equivalence of Inputs ('EoI')⁷⁰⁸ standard would not be proportionate at this time. In particular, the OSS and wholesale interfaces that are in place and used for the provision of Eircom's suite of existing legacy LB TI WHQA products, services and facilities have already been developed. These OSS and wholesale interfaces would require likely substantial investment in order to upgrade or replace them to meet an EoI standard. This would not be justifiable or proportionate in the circumstances of the LB TI WHQA Market as it would likely involve costly systems re-development, the incremental benefits of which would not likely be substantial.

⁷⁰⁷ Equivalence of Outputs ('EoO') essentially refers to provision of products, services, facilities, and information by an SMP Undertaking to Access Seekers such that such products, services, facilities, and information is provided to Access Seekers in a manner which achieves the same standards in terms of functionality, price, terms and conditions, service and quality levels as the SMP Undertaking provides to itself, albeit potentially using different systems and processes.

⁷⁰⁸ Equivalence of Inputs ('EoI') essentially refers to provision of products, services, facilities, and information by an SMP Undertaking to Access Seekers such that such products, services, facilities, and information is provided to Access Seekers in a manner which achieves the same standards in terms of functionality, price, terms and conditions, service and quality levels as the SMP Undertaking provides to itself, and using the same systems and processes.

KPI Obligations to Support Non-Discrimination

- 8.136 KPIs can support the monitoring of non-discrimination obligations and, in so doing, provide assurances to Access Seekers regarding the levels of service provided by Eircom to its downstream arm relative to that provided to Access Seekers. It also facilitates ComReg in fulfilling its role in monitoring the markets.
- 8.137 In addition to the full suite of Transparency obligations, as discussed later in paragraphs 8.151 to 8.195, ComReg is imposing a requirement on Eircom to publish a specific set of KPIs relevant to the LB TI WHQA Market on its public website in accordance with the existing requirements as set out in the 2011 KPI Decision remedies (subject to modifications as outlined in paragraphs 8.183 to 8.187 below).
- 8.138 Published KPIs will provide evidence that Eircom is delivering products, services, features or facilities in non-discriminatory manner. In addition, KPIs are a measure of the quality and efficiency of access to LB TI WHQA products, services and facilities. As such, it will help minimise the risk of Eircom engaging in actual or constructive refusal to supply. Ultimately, this will support the aim of ensuring fair competition in the provision of services by allowing Access Seekers to compete on a level playing field with Eircom.
- 8.139 ComReg has decided to modify the KPI requirement taking into account that there is little demand for new supply of LB TI WHQA products. This modification is discussed in paragraphs 8.183 to 8.190 below.

8.8 Transparency Remedies

Overview

- 8.140 Regulation 9 of the Access Regulations provides that ComReg may, inter alia, specify obligations to ensure transparency in relation to access or interconnection requiring an SMP Undertaking to make public specified information such as accounting information, technical specifications, network characteristics, prices, and terms and conditions for supply and use, including any conditions limiting Access to or use of services and applications where such conditions are permitted by law.
- 8.141 Transparency obligations can be standalone, but can also support other obligations being imposed and usually relate to requirements to make specified information publicly available.
- 8.142 An overview of existing transparency obligations is set out in paragraph 8.22 to 8.24 above.

Imposition of Transparency Remedies

Introduction

- 8.143 In paragraphs 7.74 of the 2018 Further Consultation and paragraphs 8.112 to 8.149 of the 2016 Consultation, ComReg outlined its views on the imposition of transparency remedies upon Eircom in the LB TI WHQA Market.
- 8.144 In Annex 1 paragraphs A1.465 to A1.477 of this Decision, ComReg summarises the main views of Respondents on the transparency obligations that were proposed in the 2018 Further Consultation, followed by ComReg's assessment of Respondents' views.
- 8.145 Of the seven Respondents to the 2018 Further Consultation, six expressed views on issues relating to the proposed transparency remedies as set out in the 2018 Further Consultation (namely ALTO, BT, Eircom, enet, Verizon and Vodafone).
- 8.146 Four Respondents (Eircom, enet, Verizon and Vodafone) agreed with ComReg's proposal for transparency remedies in the LB TI WHQA Access Market.
- 8.147 Two Respondents (ALTO and BT) disagreed with ComReg's proposal for transparency remedies in the LB TI WHQA market.
- 8.148 Zayo did not express any views.
- 8.149 Respondents' views on the transparency remedies are grouped into the following themes:
- (a) Monitoring of KPIs (summarised in paragraph A1.468 of Annex 1); and
 - (b) Respondents' comments relating to Modern Regulatory Standards (summarised in paragraphs A1.470 to A1.471 of Annex 1);
- 8.150 Having regard to the analysis carried out in the 2016 Consultation, 2018 Further Consultation and having assessed Respondents views (see Annex 1, paragraphs A1.465 to A1.472) ComReg has maintained its position as set out in the 2018 Further Consultation with the exception of the amendment specified in paragraphs 8.165 to 8.166 below. ComReg's position is to impose upon Eircom the transparency obligations set out in paragraphs 8.151 to 8.195 below.

Transparency Remedies to be imposed

- 8.151 In Section 7, ComReg identified that Eircom has the ability and incentive to engage in a range of exploitative and exclusionary behaviours which can impact adversely on competition and consumers.

- 8.152 A transparency obligation is considered necessary in order to monitor and ensure the effectiveness of any access, non-discrimination (and other obligations such as price control) as it allows ComReg to monitor the compliance of an SMP Operator's pricing and other behaviour (such as with respect to terms and conditions of use, quality or technical parameters) with non-discrimination and access obligations, and to address potential competition problems relating to price or quality discrimination.
- 8.153 Apart from the above, as noted in the Access Directive⁷⁰⁹, transparency of terms and conditions for Access and Interconnection, including prices, also serve to speed-up negotiations between Undertakings, avoid disputes and give confidence to market players that a service is not being provided on discriminatory terms. Openness and transparency of technical interfaces can also be particularly important in ensuring interoperability. Transparency on prices (and changes to them) is also likely to provide the necessary clarity to Access Seekers in order that they can consider impacts on the structure or level of retail prices. Transparency also provides the means for Eircom to demonstrate that Access to LB TI WHQA products, services and facilities is being provided in a non-discriminatory manner.
- 8.154 ComReg's position is that Eircom shall be required to comply with a range of transparency obligations in order to minimise information asymmetries and facilitate effective Access to LB TI WHQA products, services and facilities and to ultimately promote effective competition in downstream and related markets.
- 8.155 ComReg position is that Eircom must, as specified by ComReg in writing from time to time, make available on its publicly available wholesale website, information that is relevant to the provision of access to LB TI WHQA products, services and facilities such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices.
- 8.156 Additionally, at a specific level, ComReg's has decided that the following obligations are to be imposed on Eircom:
- (a) Transparency requirements concerning the LLRO and LLRO Price Changes (paragraphs 8.158 to 8.166 below);
 - (b) Transparency requirements governing the LLRO and LLRO Price List change management process (paragraphs 8.167 to 8.175 below);
 - (c) Transparency requirements governing advance notification timeframes for LLRO changes and LLRO price changes (paragraphs 8.176 to 8.179 below);

⁷⁰⁹ Recital 16 of the Access Directive.

- (d) Transparency requirements on wholesale billing (paragraphs 8.180 to 8.182 below);
- (e) Transparency requirements regarding the publication of KPIs and SLAs (paragraphs 8.183 to 8.189 below); and
- (f) Transparency requirements to facilitate the legitimate sharing of confidential and/or commercial information through a non-disclosure agreement (paragraphs 8.190 to 8.195 below).

8.157 These obligations largely mirror those imposed under the 2008 Decision, the 2011 KPI Decision, and the 2011 Access and Transparency Decision are discussed in more detail below.

Transparency requirements concerning LLRO and Price Changes

8.158 ComReg's position is that Eircom is to be required to make publicly available and keep updated on its website, an LLRO, which should contain a specified minimum list of items. The key purpose of the LLRO is to provide current or potential Access Seekers with all relevant information about the LB TI WHQA products, services and facilities that are intended to be provided by Eircom. More specifically, ComReg considers that the LLRO should include at least the following items:

- (a) A description of the offer of contract for Access broken down into components according to market needs;
- (b) A description of any associated contractual or other terms and conditions for supply of Access and use, including prices, (the latter being a '**LLRO Price List**');
- (c) A description of the technical specifications and network characteristics of the Access being offered;
- (d) The terms, conditions, service level agreements, guarantees and other product related assurances associated for LB TI WHQA products, services and facilities; and
- (e) at least the elements set out Section B, C and D of the Schedule to the Access Regulations.

8.159 Eircom shall notify the updated LLRO to include information relating to any amendment to an existing obligation or new obligation imposed in this Decision (and other relevant documentation pertaining to the amended obligation/new obligation) to ComReg within six (6) months of the Effective Date of this Decision. The revised LLRO shall be published by Eircom one week after this notification. The updated LLRO will then become effective three months after this date, i.e., within nine (9) months and one (1) week of the Effective Date of this Decision. These periods may be varied with the agreement of ComReg or at ComReg's discretion.

- 8.160 For the avoidance of doubt and in order to provide certainty to Eircom on what documents need to be notified to ComReg and published to industry in advance of such documents becoming effective, ComReg clarifies here its position on what documents are included in the LLRO. ComReg's position is that the LLRO includes the documents which are expressly referred to as being part of the LLRO and any associated or subordinate documents relied upon to meet Eircom's Access obligations as set out in this Decision, including but not limited to product descriptions, industry process manuals, service level agreements, unified gateway interface guidelines, unified gateway data contract ("UG Data Contract") and associated licence documentation.
- 8.161 Overall, these obligations are largely consistent with existing obligations which ComReg considers are not unduly burdensome and are required for the efficient and effective operation of the market.
- 8.162 In order to address the potential competition problems discussed above, ComReg considers it important that both it and Access Seekers have visibility over the non-pricing and pricing terms and conditions associated with Eircom's LB TI WHQA products, services and facilities. Thereby supporting the effective monitoring and enforcement of Eircom's access, non-discrimination, pricing and other obligations and enabling Access Seekers to make purchasing decisions in a timely manner.
- 8.163 As set out in the 2018 Further Consultation⁷¹⁰, ComReg also considers that the LLRO and LLRO Price List should be sufficiently unbundled so as to ensure that Access Seekers are not required to pay for products, services or facilities which are not necessary for the Access requested.
- 8.164 Specifically in relation to the LB TI WHQA Market, ComReg considers that, with the exception described in paragraphs 8.173 and 8.174 below, the format of the LLRO and the LLRO Price List should be based on the versions that are currently published⁷¹¹ on Eircom's wholesale website (or at the date on which ComReg's decision concerning its LB TI WHQA Market analysis is published), thereby continuing the current practice.

⁷¹⁰ As set out in Section 10.3 of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation.

⁷¹¹ Eircom's LLRO (Version 3.0 01/07/2019) and Network Price List (Version 12.0 01/07/2019), as published at: https://www.openeir.ie/Reference_Offers/?selectedtab=llro

Amendments to proposed obligations

- 8.165 ComReg has further considered the timeline by which Eircom needs to update the LLRO following the Effective Date of this Decision. ComReg has decided that for the purposes of clarity and certainty, the wording of the Decision Instrument shall be amended to describe that Eircom shall notify the updated LLRO to include information relating to any amendment to an existing obligation or new obligation imposed in this Decision (and other relevant documentation pertaining to the amended obligation/new obligation) to ComReg within six (6) months of the Effective Date of this Decision. The revised LLRO shall be published by Eircom one week after this notification. The updated LLRO will then become effective three months after this date, i.e., within nine (9) months and one (1) week of the Effective Date of this Decision. These periods may be varied with the agreement of ComReg or at ComReg's discretion.
- 8.166 The transparency requirements concerning LLRO and LLRO price changes are more particularly set out in Section 10 of the Decision Instrument (Annex 8).

Transparency requirements governing LLRO and LLRO Price List change management process

- 8.167 ComReg is also imposing a number of transparency requirements governing change management of the LLRO and its associated elements/documentation in order to enable Access Seekers to have visibility of any changes to be made or made to the LLRO over time. This will also support monitoring and enforcement of compliance with SMP obligations.
- 8.168 In this respect, ComReg's position is that Eircom should:
- (a) continue to publish and keep updated on its publicly available website, its LLRO in the same form and format as version V3.0, dated 1 July 2019, including a searchable version, as may be amended from time to time, insofar as those products, services or facilities contained therein relate to the obligations set out in this Decision;
 - (b) publish and keep updated on its publicly available website both clean (or unmarked) and tracked changed (or marked) versions of its LLRO. The tracked change version of the LLRO must also be sufficiently clear to allow Access Seekers to clearly identify all actual and proposed amendments to regulated products from the preceding version of its LLRO;
 - (c) publish and keep updated on its publicly available website an accompanying LLRO change matrix which lists all of the amendments incorporated to regulated products or to be incorporated in any amended LLRO (the '**LLRO Change Matrix**');

- (d) publish and keep updated on its publicly available website both clean (unmarked) and tracked changed (marked) versions of the LLRO Price List(s) for LB TI WHQA products. The tracked change version of the LLRO Price must be sufficiently clear to allow Access Seekers to clearly identify all actual and proposed amendments from the preceding version of its LLRO Price List of regulated products. The tracked change (or marked) version of the LLRO Price List will state the proposed or effective prices as well as the previous most recent prices;
- (e) publish and keep updated on its publicly available website a LLRO Price List change matrix, which lists all of the amendments incorporated to regulated products or to be incorporated in any amended LLRO Price List (the '**Price List Change Matrix**');
- (f) maintain and make publicly available on its wholesale website a copy of historic versions of its LLRO, LLRO Price List, LLRO Change Matrix and LLRO Price List Change; and
- (g) Eircom shall state its effective and historical charges in separate LLRO documents.

8.169 In paragraphs A1.888 to A1.891, ComReg considered Vodafone's suggestion that Eircom should be obliged to publish all current prices in a document or spreadsheet which is separate from the historic records of price changes.

8.170 As described in paragraph A1.890, ComReg considers that while the historical information relating to the effective 'to' and 'from' dates for the application of charges still needs to be made available to Access Seekers, the current inclusion of this information in the various tables in the LLRO Price List document detracts from the clarity and ease of use of such tables. In ComReg's opinion, such historical information would be more appropriately published in a separate LLRO document(s) from that of the LLRO Price List.

- 8.171 ComReg has therefore decided to further define the transparency obligation in the Zone B MI WHQA Markets, proposed in the 2018 Further Consultation⁷¹², so that such an obligation will be imposed on Eircom. As described in paragraph 8.169, ComReg has decided to further define the transparency obligation proposed in the 2018 Further Consultation⁷¹³ for the LB TI WHQA Market, so that an equivalent obligation will be imposed on Eircom in this market. ComReg considers that this obligation is justified so that effective and historical prices are clearly presented to Access Seekers. In addition, ComReg considers that it is proportionate to impose this obligation in the LB TI WHQA Market as it is a disaggregation of existing information rather than an activity that will require development or be resource intensive. ComReg also considers that such an approach avoids the need for separate LLRO Price Lists to be published for the LB TI WHQA and Zone B MI WHQA markets. ComReg has therefore decided that, in accordance with Regulation 9(4) of the Access Regulations, an obligation shall be imposed on Eircom to state its effective and historical charges in separate LLRO documents.
- 8.172 For the avoidance of doubt, Eircom will also need to publish a tracked change (or marked) version of the LLRO Price List⁷¹⁴ that will state the proposed or effective prices as well as the previous most recent prices. This will provide Access Seekers with an immediate basis of comparison for new prices.

Amendments to proposed obligations

- 8.173 As described in paragraph 8.169, ComReg has decided to further define the transparency obligation, proposed in the 2018 Further Consultation⁷¹⁵, so that Eircom will state its effective and historical charges in separate LLRO documents.
- 8.174 Eircom will also need to publish a tracked change (or marked) version of the LLRO Price List⁷¹⁶ that will state the proposed or effective prices as well as the previous most recent prices.

⁷¹² As set out in Section 17.6(iv) of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation.

⁷¹³ As set out in Section 10.6(iv) of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation.

⁷¹⁴ As set out in paragraph 8.168(d) below.

⁷¹⁵ As set out in Section 10.6(iv) of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation.

⁷¹⁶ As set out in paragraph 8.168(d) below.

8.175 The transparency requirements with respect to the LLRO and LLRO Price List change management process are more particularly set out in Section 10 of the Decision Instrument (Annex 8).

Advance notification timeframes for LLRO and LLRO price changes

8.176 ComReg's has decided to impose obligations upon Eircom to provide advance notification of proposed amendments or changes to the LLRO and related prices according to specified timeframes (see paragraph 8.177 below). This is to provide sufficient notification to Access Seekers to allow them to factor in such proposed changes into the commercial decision making activities and to make any necessary adjustments or developments to billing or other systems, as appropriate. These advance notification requirements also provide a transparent and available mechanism according to which ComReg can monitor compliance by Eircom with its access, non-discrimination, pricing and other obligations outlined in this Decision.

8.177 ComReg's position is that Eircom should be subject to the following obligations with respect to changes to the LLRO and the LLRO Price List:

- (a) Eircom shall (unless otherwise agreed by ComReg) publish, on its publicly available website - at least three (3) months in advance - any proposed changes to the LLRO and any proposed changes to Wholesale prices and the application of such prices for the purposes of notifying all interested parties of such changes⁷¹⁷; and
- (b) Eircom shall notify ComReg at least five (5) working days in advance of any such publication taking place. The periods referred to in this Section may be varied with the agreement of ComReg or at ComReg's discretion.

8.178 The above transparency requirements require Eircom to notify ComReg in the event of material changes to the LLRO or changes to prices. However, it should be noted that this notification does not include an approvals process. For the avoidance of doubt, in relation to existing contracts, text changes proposed by Eircom, arising from the text change process as detailed above, apply to Eircom's obligations only and are not automatically incorporated into existing contracts, as changes to Access Seeker contractual obligations. Eircom may negotiate with Access Seekers regarding any such changes.

⁷¹⁷ With respect to changes to prices, SLAs, changes resulting from an Access request for a new or amended product, service or facility or a development for a new or amended product, service or facility initiated by Eircom.

- 8.179 The transparency requirements with respect to notification timeframes for LLRO and LLRO price changes are more particularly set out in Section 10 of the Decision Instrument (Annex 8).

Transparency requirements on wholesale billing

- 8.180 ComReg's position is to require Eircom to provide transparency in its billing charges for wholesale LB TI WHQA products, services and facilities to its wholesale customers, and to ensure that its wholesale invoices for such are sufficiently disaggregated, detailed and clearly presented so that an Access Seeker can reconcile the invoice to Eircom's LLRO and LLRO Price Lists.
- 8.181 This should ensure that Access Seekers have the clear ability to monitor the wholesale charges being levied on them and facilitate an auditable means of detecting any billing anomalies and/or non-compliance with regulatory obligations. Eircom should therefore, continue in its LLRO, the requirement to invoice OAOs on a monthly basis, one (1) month in advance of provision of the service with the credit terms remaining at thirty (30) days.
- 8.182 The transparency requirements with respect to wholesale billing are more particularly set out in Section 10 of the Decision Instrument Annex 8.

Transparency requirements regarding KPIs and SLAs

- 8.183 In the context of non-discrimination remedies discussed in paragraphs 8.136 and 8.139 above, KPIs and SLAs can support the monitoring of non-discrimination obligations and, in so doing, provide assurances to Access Seekers regarding the levels of service provided by Eircom to its downstream arm relative to that provided to Access Seekers.
- 8.184 ComReg has decided to require Eircom to continue to publish KPIs. However, ComReg is proposing to amend the current requirement, as set out in the 2011 KPI Decision, on Eircom to publish KPIs on its public website with respect to supply, order designation and fault repair for LB TI WHQA products, services and facilities. ComReg requires Eircom to publish KPIs on its public website with respect to fault repair⁷¹⁸ of LB TI WHQA products, services and facilities in accordance with the existing requirements as set out in the 2011 KPI Decision.

⁷¹⁸ Refer to Table 13 below.

8.185 The requirements regarding KPIs were specified in the 2011 KPI Decision which specified a range of metrics for various categories of LLs against which Eircom would report. ComReg's position is that Eircom will no longer be required to publish the provisioning⁷¹⁹ related metrics for the LB TI WHQA products, services and facilities as set out in the 2011 KPI Decision⁷²⁰ and the 2011 KPI Decision will be amended accordingly. ComReg is therefore, removing all the current KPIs specific to TI LLs in Annex 4 of the 2011 KPI Decision with corresponding tables 5, 7 and 9 contained in Annex 2 of the 2011 KPI Decision and replace these with the new repair metrics⁷²¹ and new table as outlined as follows⁷²²:

⁷¹⁹ Given the low volumes of new LB TI WHQA services ordered by Access Seekers.

⁷²⁰ As set out in tables, 5, 6, 7 and 8 of Appendix 2 of the Decision Instrument contained in ComReg Decision D05/11.

⁷²¹ Refer to Table 13 below.

⁷²² In addition, tables specified Section 17 of the Decision Instrument (Annex 8) with respect to KPIs for the Zone B MI WHQA Markets will also be published.

Table 13: Repair of LB TDM LLs ('KPI Table 7.1')

Title	Definition
Percentages of fault on PPC EULs of bandwidths up to 2Mb/s, repaired within 8, 24 and after 24 hours (excludes non-faults and co-op faults)	Percentage of faults (excludes non-faults and co-op faults) reported on PPC EUL's ≤2Mb/s repaired within 8, 24 and after 24 hours, of all faults reported, measured on a quarterly basis
Percentages of fault on retail digital leased lines of bandwidths up to 2Mb/s, repaired within 8, 24 and after 24 hours (excludes non-faults and co-op faults)	Percentage of faults (excludes non-faults and co-op faults) reported on retail digital leased lines ≤2Mb/s reported, repaired within 8, 24 and after 24 hours, of all faults reported, measured on a quarterly basis

	Retail			Wholesale (PPCs)		
Metrics associated with fault repair	<8 WHs	<24 WHs	>24 WHs	<8 WHs	<24 WHs	>24 WHs
Low Bandwidth (≤2M) digital leased lines	%	%	%	%	%	%

8.186 With respect to the wholesale LB TI WHQA LLs, ComReg has decided to modify the existing obligation taking into account the current dynamics in the market as follows:

- (a) The monthly volumes of LB TI WHQA LL orders are not currently of a sufficient volume such that comparisons of performance between wholesale supply and retail supply would be meaningful. ComReg therefore is removing the obligation to provide KPIs with respect to the supply of LB TI WHQA LLs (including therefore, those relating to order designation)⁷²³;
- (b) ComReg has decided that the interval of measurement of 'Service Assurance Metrics' for LB TI WHQA LLs will change from monthly to quarterly, with the report continuing to be published on a quarterly basis.

8.187 These modifications and obligations are justified as it provides confidence to Access Seekers that Eircom's performance in the repair of LB TI WHQA products, services and facilities will be measured against relevant performance indicators in a transparent way and therefore supports the non-discrimination and access obligations.

⁷²³ As set out in tables, 5, 6, 7 and 8 of Appendix 2 of the Decision Instrument contained in ComReg Decision D05/11.

Amendments to proposed obligations

- 8.188 ComReg has further considered the timeline by which Eircom needs to provide the KPIs arising as a result of this Decision and the timeline by which it must continue to provide the KPIs set out in the 2011 KPI Decision. ComReg has decided that KPIs as summarised in paragraphs 8.183 to 8.187 above, unless otherwise agreed with ComReg, must be provided to Access Seekers within 12 months of the Effective Date of this Decision. Eircom shall comply with its obligations to provide the LB TI WHQA KPIs as set out in the Sections of Annex 4 of the Decision Instrument contained in the 2011 KPI Decision titled “Metrics associated with Supply of Services”, “Metrics associated with Designation of Service Orders” and “Metrics associated with Repair of Services” for a period of 12 months⁷²⁴ following the Effective Date of this Decision. Thereafter, Eircom shall comply with its obligations to provide the LB TI WHQA KPIs as set out in the Sections of Annex 4 of the Decision Instrument contained in the 2011 KPI Decision by publishing “Metrics associated with Repair of Services”.
- 8.189 The transparency requirements with respect to KPIs are more particularly set out in Section 10 of the Decision Instrument (Annex 8).

Transparency requirement to facilitate the legitimate sharing of confidential and/or commercial information through a Non-Disclosure Agreement ('NDA')

- 8.190 ComReg also considers that Eircom, as the designated SMP operator, must provide information regarding technical developments, network rollout and wholesale services, insofar as it affects the provision of LB TI WHQA products, services and facilities (subject to the obligations set out in this Decision) and to do so with sufficient visibility to ensure that operators are in a position to prepare business or operational plans.
- 8.191 In this respect, ComReg would note that in some cases circumstances may arise where Eircom considers that certain information to be provided by it pursuant to its non-discrimination obligations is of a confidential and/or commercially sensitive nature. To cater for such circumstances, ComReg is requiring Eircom to meet the following requirements, which largely mirror those which have been recently imposed in other markets within which Eircom has SMP.

⁷²⁴ Unless otherwise agreed with ComReg.

- 8.192 Eircom shall, without delay, provide ComReg with complete details of such information along with objective reasons justifying why it considers it is confidential and/or commercially sensitive. ComReg will consider the information in accordance with its Confidentiality Guidelines⁷²⁵ as relevant or otherwise. If ComReg concludes that the information is confidential and/or commercially sensitive, the following provisions shall apply:
- (a) Eircom shall not be required to publish the information; or
 - (b) Notwithstanding paragraph 8.192(a), in circumstances considered appropriate by ComReg, Eircom shall publish general non-confidential details as to the nature of such information and shall make the information or, as agreed with ComReg, extracts of such information, available to an Access Seeker that has signed a Non-Disclosure Agreement ('**NDA**'), the terms and conditions of which shall be fair, reasonable and non-discriminatory. The NDA shall also be published on Eircom's publicly available wholesale website; and
 - (c) Any confidential and/or commercially sensitive information (or, as agreed with ComReg, extracts thereof) shall not be made available by Eircom to its downstream operations until such time as it is made available to an Access Seeker, or as otherwise agreed with ComReg.
- 8.193 If and when any commercially sensitive and/or confidential information referred to in paragraph 8.192 ceases to be commercially sensitive and/or confidential, it shall be made available by Eircom on its publicly available wholesale website without undue delay and without the need for an NDA to be signed.
- 8.194 This obligation is considered necessary to ensure that Eircom cannot circumvent compliance with its access, non-discrimination and transparency obligations on the grounds that it considers that certain information is commercially sensitive and/or confidential.

⁷²⁵ See "Guidelines on the treatment of confidential information" ComReg Document 05/24, March 2005.

Amendments to proposed obligations

- 8.195 As described in paragraph A1.475 in Annex 1, ComReg has decided to amend the specific wording of the obligation set out in the 2018 Further Consultation⁷²⁶ with respect to requirements governing sharing of confidential and/or commercial information through a non-disclosure agreement. The amended wording is reflected in paragraphs 8.190 to 8.194 above and is more particularly set out in Section 10 of the Decision Instrument (Annex 8). ComReg considers the amendments are required so as to make the obligation less burdensome on Eircom and to cater for scenarios where Eircom may otherwise have to share inappropriate information with Access Seekers.

⁷²⁶ As set out in Sections 10.16 to 10.18 of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation.

8.9 Price Control and Cost Accounting remedies

Overview

- 8.196 ComReg has identified in Section 7 of this Decision that Eircom has the ability and incentive to potentially engage in a range of anti-competitive pricing behaviours to the ultimate detriment to competition and consumers. These included the risk that Eircom could charge excessive prices for LB TI WHQA products, services and associated facilities. In view of this, ComReg considers that the imposition of obligations of price control and cost accounting on Eircom is justified.
- 8.197 Furthermore, in view of the declining demand for LB TI WHQA services and the migration to Modern Interface equivalent services, ComReg is of the view that, having regard for its statutory objectives, a price control obligation needs to be specified in such way as to ensure that appropriate “build/buy” signals are provided which do not undermine or discourage a migration from these services to Modern Interface (**MI**) equivalents, thus facilitating the development of the MI market.
- 8.198 ComReg’s decision is to impose a range of access obligations upon Eircom, including (but not limited to) the requirement to provide the following LB TI WHQA products, services and associated facilities:
- (a) Partial Private Circuits (PPC) End User Links; and
 - (b) Partial Private (PPC) Transport Links.⁷²⁷
- 8.199 ComReg is required to consider whether price control and cost accounting obligations are appropriate for these services and, if so, what type of obligations best meets the regulatory objectives of promoting effective competition for the ultimate benefit of End Users.
- 8.200 Regulation 13 of the Access Regulations provides that ComReg may, *inter alia*, impose obligations relating to cost recovery and price controls on an SMP operator. These include (but are not limited to) obligations for cost orientation of prices and obligations concerning cost accounting systems, for the provision of specific types of access or interconnection in situations where a market analysis indicates that a lack of effective competition means that the operator concerned may sustain prices at an excessively high level or may apply a price squeeze to the detriment of End Users.

⁷²⁷ This includes all PPC Transport Links as described in paragraph 8.67, regardless of bandwidth.

- 8.201 In imposing any such obligations, ComReg is also required to consider a number of principles, in particular:
- (a) Take into account the investment made by the SMP operator which ComReg considers relevant and allow such operator a reasonable rate of return on adequate capital employed, taking into account any risks specific to a particular new investment network project; and
 - (b) Ensure that any cost mechanism or pricing methodology that ComReg imposes serves to promote efficiency and sustainable competition and maximise consumer benefits.
- 8.202 In this Section, ComReg sets out the specific price control remedies which has decided to impose on Eircom in relation to the TI LB WHQA Market and justifies its choices concerning the appropriate form of price control and costing methodologies. On this basis, ComReg sets out its decision in relation to its pricing approach. Furthermore, in deciding the specific remedies ComReg has taken into account the 2016 Consultation and the 2018 Further Consultation and the Respondents' views to both these consultations. In relation to the Respondents' views on the 2018 Further Consultation, ComReg's assessment of these views is discussed in Annex 1, Section A.1.8.4 of this Decision.
- 8.203 ComReg further notes that the appropriate implementation of specific price control obligations relies on an understanding of the SMP operator's costs incurred in the provision of the associated products and services. Obligations to maintain appropriate cost accounting systems generally support obligations of price control and accounting separation, and can also assist ComReg in monitoring the obligation of non-discrimination. As a result, ComReg's decision is for Eircom to ensure that it maintains appropriate cost accounting systems to justify its prices and costs.

Price Control Remedies

- 8.204 ComReg's final position, supported by the rationale laid out in the remainder of this Section, is that a price control obligation of cost orientation should apply in the LB TI WHQA Market, based on the derivation of cost oriented prices for PPC End User Links (EUL) products, services and associated facilities, including Transport Links. This final position is consistent with ComReg's preliminary conclusion set out in the 2016 Consultation⁷²⁸ and in the 2018 Further Consultation.⁷²⁹

⁷²⁸ See paragraphs 8.264 to 8.265 of the 2016 Consultation.

⁷²⁹ See paragraphs 7.121 of the 2018 Further Consultation.

- 8.205 ComReg is of the view that it is sufficient to apply the obligation of cost orientation on the PPC product suite, as the key wholesale input, in order to provide Access Seekers with cost orientated wholesale inputs, allowing them, for instance, to compete in downstream markets which rely on such inputs. The relativity of prices between PPCs (including associated Transport Links), WLLs and equivalent retail offerings is of less importance for a number of reasons:
- (a) TI legacy end-to-end digital LL products are largely purchased by Eircom's own downstream retail business, though this demand has reduced in recent years;⁷³⁰
 - (b) The demand for WLL products from other SPs is in decline, with no new net business expected over the remaining lifecycle of this review; and
 - (c) The PPC product suite is a sufficient remedy to allow SPs to replicate the end-to-end services currently provided by the WLL products.
- 8.206 With respect to connection charges for PPC products, ComReg's position is also that these be cost oriented, namely based on the actual costs incurred by Eircom, adjusted for efficiencies, plus a regulated rate of return. The adjustment for efficiencies is to ensure that Eircom is unable to recover inefficiently incurred costs.
- 8.207 The following paragraphs consider the mechanisms required to establish a price control obligation in the LB TI WHQA Market under the following headings:
- (a) Appropriate form of price control (discussed in paragraphs 8.208 to 8.232 below);
 - (b) Appropriate costing methodology (discussed in paragraphs 8.233 to 8.268 below); and
 - (c) Pricing Approach (discussed in paragraphs 8.269 to 8.272 below).

Appropriate Form of Price Control

- 8.208 This Section assesses the various potential forms of price control available and what form of price control is appropriate in the LB TI WHQA Market.
- 8.209 There are a number of price control options available to ComReg for the PPC products, services and associated facilities in the LB TI WHQA Market. The relevance and appropriateness of each are discussed below under the following headings:
- (a) **Option 1:** Regulatory Forbearance;

⁷³⁰ See Figure 4 in Section 3.

- (b) **Option 2:** Benchmarking;
- (c) **Option 3:** Retail Minus;
- (d) **Option 4:** Margin Squeeze Test; and
- (e) **Option 5:** Cost Orientation.

Option 1: Regulatory Forbearance

- 8.210 This option means that there are no *ex ante* price control obligations imposed on the SMP operator. In this option, Eircom (as the SMP operator) would be free to set prices in the LB TI WHQA Market. In this situation, ComReg would have no influence over, for example, the monthly rental prices of PPC EUL products or Transport Links.
- 8.211 ComReg's view is that Regulatory Forbearance is not an appropriate option to set prices for products, services and associated facilities in the LB TI WHQA Market for the reasons outlined in Section 7 above including the risks of excessive pricing to the detriment of competition and ultimately consumers.

Option 2: Benchmarking

- 8.212 Benchmarking is the process whereby the prices of services are set by reference to the prices of comparable services in other countries. Regulation 13(3) of the Access Regulations states in relation to benchmarking that:

“The Regulator shall ensure that any cost recovery mechanism or pricing methodology that it imposes under this Regulation serves to promote efficiency and sustainable competition and maximise consumer benefits. In this regard, the Regulator may also take account of prices available in comparable competitive markets”

- 8.213 This approach tends to be adopted by NRAs when there is an absence of sufficient data (e.g. costs, volumes) to allow the NRA to arrive at a suitably informed price. However, given that LB TI WHQA product volumes are in slow decline, the costs linked with these residual volumes may not be representative. In effect, the costs associated with LB TI WHQA services infrastructure contained in the accounting records of operators can be distorted by a number of factors, including:
- (a) Low product volumes in conjunction with high residual costs can indicate unrepresentative unit cost profiles;
 - (b) Assets directly associated with TI leased lines (LL) infrastructure may be fully depreciated;

- (c) Costs associated with small numbers of TI LL may become so immaterial relative to other business activities of SPs that the business integrates the costs and revenues for such products into the activities of more material product groups; and
- (d) The inability of operators to establish current cost values for legacy infrastructural elements which are no longer supplied by manufacturers.

8.214 This may be further compounded by factors such as the stage of development of next generation services and the ability of such modern alternatives to provide comparable services (although, as noted in Section 5, ComReg's decision is that MI WHQA services are part of a separate market).

8.215 In its 2012 Pricing Decision, ComReg, with the assistance of external consultants,⁷³¹ undertook extensive modelling of cost and volume data in relation to PPC EUL services. As a consequence, ComReg developed a BU-LRAIC plus cost model. This model was reviewed to reflect updated costs and volumes associated with TI WHQA EUL services. As a result, ComReg considers this BU-LRAIC Plus cost model to be robust and representative of the efficient costs incurred by Eircom in providing these services. Additionally, separate BU-LRAIC plus cost models were developed by Eircom and subsequently reviewed by ComReg to establish cost oriented prices for Transport Links and these are also available as a resource to update the respective prices.

8.216 Therefore, ComReg's view is that benchmarking is not an appropriate approach to set prices for products, services and associated facilities in the LB TI WHQA Market.⁷³²

Option 3: Retail Minus

8.217 In general, a retail-minus price control determines the appropriate margin between the wholesale charge and the related downstream retail prices by considering what proportion of retail and other downstream costs would need to be deducted from the retail price in order to be left with the appropriate wholesale price at which competitors, reliant on the upstream (wholesale) inputs, can effectively replicate the retail offer of the downstream arm of the operator with SMP.

⁷³¹ TERA Consultants.

⁷³² ComReg is of the view that this is consistent with the judgment of Cooke J. in *Vodafone Ireland Limited v Commission for Communications Regulation* [2013] IEHC 382.

- 8.218 An advantage of a retail minus price control in some contexts is that it can be comparatively easy to implement, as there is no need to develop a detailed cost model of the underlying network. However, in the case of leased lines services, it can be very difficult to identify the retail price associated with a particular wholesale service given that very often these services are bundled along with other unregulated services. It is also the case that such retail bundles of regulated and unregulated services are offered on a bespoke bid basis. However, as noted above, ComReg has already developed a network cost model to set cost oriented market prices for LB TI WHQA products, services and associated facilities. This model can be readily revised to reflect changes in costs and volumes.
- 8.219 These issues are even more complex in the case of PPC products (as opposed to end to end leased lines services) where network modelling would be required to estimate those network costs that an OAO would need to incur to supplement the connectivity provided by a PPC. This undermines arguments around the ease of use of a retail minus remedy.
- 8.220 Based on these considerations, ComReg is of the view that a retail minus form of price control is not appropriate to set prices for products, services and associated facilities in the LB TI WHQA Market.

Option 4: Margin Squeeze Test

- 8.221 A margin squeeze can occur where a vertically integrated operator with SMP at the wholesale level sets wholesale prices such that, given the prevailing retail prices, it does not allow retail competition to recover its retail costs (e.g. sales, marketing). This would likely foreclose existing competition and prevent entry to downstream markets.
- 8.222 Similarly, a SMP operator could set its downstream retail prices at a level such that a Similarly Efficient Operator ('**SEO**') is not able to recover the downstream retail costs that it incurs after acquiring the essential wholesale inputs from the SMP operator's wholesale business arm. This outcome would ultimately prevent the SEO from competing effectively in the retail market with the SMP operator. This again would likely foreclose existing competition and prevent entry and ultimately be detrimental to End Users.

- 8.223 A margin squeeze test can be set between retail and wholesale products and/or between different wholesale products. A retail margin squeeze test compares the retail revenues with the retail and wholesale costs to determine if the margin is positive or negative. If there is a negative margin the wholesale price and/or retail price may have to change. Likewise, a margin squeeze test between retail and wholesale products ensures economic replicability at each layer of the value chain (with adequate economic space between each layer). A well-constructed margin squeeze test can ensure that a deeply interconnected operator can reap the benefits of its network investments, while providing an important competitive constraint on the SMP operator along the value chain, in both wholesale and retail markets.
- 8.224 A margin squeeze test can be used as a price control obligation to set maximum wholesale prices or as a complementary test in conjunction with other regulatory tools (e.g. cost orientation).
- 8.225 Currently, a margin squeeze test is applied to set a floor on end-to-end wholesale leased line prices based on the input costs of wholesale PPC EULs products and associated interconnect facilities and on the input costs of a SEO with 25% market share. This is required to emulate an end-to-end, customer to customer leased lines product offering.
- 8.226 Presently, the majority of LB TI WHQA products, services and facilities supplied by Eircom are purchased by its own downstream business (but in low volumes with the number of circuit ceases far outnumbering new provisions in recent years). This fact - combined with the continuing decline in service demands for LB TI WHQA in wholesale markets - indicates that there is unlikely to be a need to retain a margin squeeze test for this market over the duration of this review, including in circumstances where [§< [REDACTED]].⁷³³
- 8.227 ComReg also notes that a margin squeeze test also faces the same implementation difficulties as outlined above for retail minus controls.

⁷³³ See Section 3 of this Decision.

Option 5: Cost Orientation

- 8.228 A cost orientation obligation means that the SMP operator has to ensure that its wholesale prices recover no more than its actual incurred costs adjusted for efficiency plus a reasonable rate of return. In the case of LB TI WHQA, where demand for these services is declining, productive efficiency remains a concern to ensure that only efficiently incurred costs are reflected in the provision of these services. A cost orientation obligation avoids the risk of market abuse through excessive price levels so that Access Seekers can purchase cost based inputs and compete in downstream markets, giving End Users the opportunity to purchase services from a range of service providers with differentiated prices in the retail market. In addition to this, a cost orientation obligation, as specified by ComReg in the following paragraphs, also ensures that competing investment is presented with “build/buy” signals, which do not undermine or discourage a migration from these services to Modern Interface equivalents.
- 8.229 The setting of cost oriented maximum prices for LB TI WHQA products, services and associated facilities is consistent with ComReg’s statutory objectives under Section 12 of the Communications Regulation Act, 2002 and Regulation 16 of the Framework Regulations (as amended). It is envisaged that this should facilitate greater regulatory certainty and avoid the risk of excessive pricing as identified in Section 7 of this Decision.
- 8.230 A disadvantage of a cost orientation price control is that it requires the update or the development of a cost model, which can be resource intensive. However, as outlined above, a BU-LRAIC plus cost model was developed by ComReg in its 2012 Pricing Decision and subsequently reviewed to reflect updated costs and volumes associated with LB TI WHQA EUL services. Additionally, separate BU-LRAIC plus cost models were developed by Eircom and subsequently reviewed by ComReg to establish cost oriented prices for Transport Links and these are also available as a resource to update the respective prices.
- 8.231 Hence, ComReg’s final position is that a cost orientation obligation is justified to set maximum price levels LB TI WHQA products, services and associated facilities. This obligation is intended to address the risk, as identified in Section 7 of this Decision, of a vertically-integrated operator with SMP in the wholesale market exploiting its position, by charging excessive prices for wholesale inputs. In addition to this, this cost orientation obligation has been specified by ComReg in such way as to provide appropriate “build/buy” signals, which do not undermine or discourage the migration of these services to modern equivalents.

Conclusion on form of price control

8.232 For the reasons set out above, ComReg's conclusion is that Eircom is to be subject to an obligation of Cost Orientation with respect to products, services and associated facilities pursuant to its obligations in the LB TI WHQA Market. Furthermore, having regard to ComReg's views set out in paragraphs 8.221 to 8.227, ComReg is withdrawing the margin squeeze obligation currently applied between end-to-end wholesale leased line services and wholesale PPC EULs services.

Appropriate Costing Methodology

Overview

8.233 After deciding that a Cost Orientation price control obligation is appropriate, the next issue to be addressed is to ascertain the correct costing methodology to be applied. The costing methodology determines the costs that should be included in any cost model and how this is converted into a unit price.

8.234 When considering the options available to ComReg in determining the most appropriate costing methodology there is a need to ensure compliance with the price control obligations for services in the LB TI WHQA Market. There is also a need to balance a number of objectives, including the promotion of competition, incentivising infrastructure investment, ensuring appropriate cost recovery for Eircom and ensuring that the interests of End Users are protected.

8.235 ComReg is of the view that effective competition in the downstream markets that rely on inputs from the LB TI WHQA Market, in particular PPC EULs and associated Transport Links, would be best served by applying price ceilings on wholesale inputs required to provide retail leased lines. In effect, cost orientated prices for LB TI WHQA products, services and associated facilities should be established, and these in turn set as maximum wholesale price levels.

8.236 In determining the appropriate costing methodology, the following options were considered:

(a) What is the appropriate cost standard: Should costs be set, for example, on a LRIC basis or on another basis? (discussed in paragraphs 8.237 to 8.245 below);

(b) What is the appropriate cost approach: Should historic costs or current costs be used? (discussed in paragraphs 8.246 to 8.252 below);

- (c) What is the appropriate cost modelling approach: Should a Top Down (“**TD**”)⁷³⁴ model, bottom up (“**BU**”)⁷³⁵ model or hybrid model be applied? (discussed in paragraphs 8.253 to 8.261 below); and
- (d) What is the appropriate cost model? (discussed in paragraphs 8.262 to 8.268 below).

Appropriate Cost Standard

- 8.237 Cost standards refer to the method by which costs are allocated to services with the objective of allowing the operator to recover all the efficiently incurred costs associated with its network.
- 8.238 Certain assets and resources can be traced directly to a specific product/service and can, therefore, be considered as direct costs which are attributable to a specific product/service. However, other assets and resources that can be used by many different products/services require allocation rules to share such costs amongst the range of products/services that these assets and resources support. These costs can be generally categorised as follows:
- (a) **Common costs:** costs that in general are not attributable to any product/service (i.e. costs incurred across the whole organisation regardless of product). Examples include corporate overheads, general finance function costs, CEO salary, regulatory licence fees, redundancy and voluntary severance costs; and
 - (b) **Joint costs:** costs that are variable and incurred by some, but not all products/services, but cannot be directly attributed to one particular service (e.g. cable and trench costs for core network connectivity providing a highway for traffic for a range of services, such as broadband and LLs, but not attributable to local access services such as Local Loop Unbundling).
- 8.239 The options for the choice of the appropriate cost standard for the purposes of a price control typically involve the following:
- (a) Average Variable Cost (**‘AVC’**);
 - (b) Average Avoidable Cost (**‘AAC’**);
 - (c) Long Run Average Incremental Cost (**‘LRAIC’**);

⁷³⁴ Top Down refers to the situation whereby the source of financial information being used is taken from the SMP operator accounting records.

⁷³⁵ Bottom Up in general refers to a scenario whereby the costs are those incurred by an efficient operator when building an up to date and modern network.

- (d) LRAIC plus; or
- (e) Average Total Cost ('**ATC**').

8.240 Each of the above cost standards is discussed below.

Average Variable Cost

8.241 AVC approximates to the variable cost of producing an additional unit of output. However, it does not consider fixed costs, which by definition do not vary with output and which can be a significant cost component faced by operators. ComReg, as a result, is of the view that the application of this cost standard, when used to establish wholesale product prices could prevent new market entrants and existing operators from recovering their investment costs. This, in turn, would significantly constrain the potential for entry by efficient entrants and could also lead to an exit of existing operators who cannot sustain a strategy that may, for example, involve short term losses. Hence, ComReg considers that the use of an average variable cost approach might be sustainable for an operator in the short term but would not be reasonable approach to establish cost oriented prices.

Average Avoidable Cost

8.242 AAC are the short-run avoidable variable and incremental fixed costs of the additional sales of the product/service under review. The inclusion of short-run fixed costs, distinguishes the AAC approach from the AVC approach. Furthermore, the exclusion of a mark-up for overall fixed and common costs, distinguishes AAC from ATC. As the AAC standard does not include provision for (non-avoidable) fixed costs and common costs in an *ex ante* margin squeeze test, it could be argued that this provides the SMP operator with an advantage given the broad range of products and services over which it could conceivably recover such common costs. ComReg is of the view that the decision to enter the market depends on the expectation that fixed and common costs can be recovered at least in the long term. Cost measures such as AAC do not ensure this, as the total costs of an operator are not covered. Thus, ComReg is of the view, that to apply an AAC cost rule in an *ex ante* context would be to the detriment of investment and competition overall and ultimately to End Users. However, as noted above, ComReg does not envisage that there would be any significant new entry in the retail LB TI Market and/or the LB TI WHQA Market as both are in decline. Therefore, the main reason for excluding this option is the inability of operators to recover fixed and common unavoidable costs.

LRAIC, LRAIC plus or ATC

8.243 The European Commission in its ‘Guidance on the Commission’s enforcement priorities in applying Article 82 of the EC Treaty [now Article 102 of the Treaty on the Functioning of the European Union (TFEU)] to abusive exclusionary conduct by dominant Undertakings’⁷³⁶ noted that:

“Long-run average incremental cost is the average of all the (variable and fixed) costs that a company incurs to produce a particular product. LRAIC and average total cost (ATC) are good proxies for each other, and are the same in the case of single product Undertakings. If multi-product Undertakings have economies of scope, LRAIC would be below ATC for each individual product, as true common costs are not taken into account in LRAIC. In the case of multiple products, any costs that could have been avoided by not producing a particular product or range are not considered to be common costs. In situations where common costs are significant, they may have to be taken into account when assessing the ability to foreclose equally efficient competitors.”

8.244 Given that one of the regulatory objectives is to promote infrastructure competition the only three available options that ComReg believes are consistent with its objectives in this context are LRAIC, LRAIC plus and ATC. ComReg is of the view that the differences between LRAIC, LRAIC plus and ATC are as follows:

- (a) LRAIC is the average efficiently incurred variable and fixed costs that are directly attributable to the activity concerned over the long-run. This approach does not include an apportionment for common costs. LRAIC is a forward-looking approach, but does not permit an operator to recover all of its efficiently incurred costs. Significant common costs which are not directly attributable to the product in scope would be excluded under this approach. This could deter an operator from entering the market due to the inability to fully recover investment costs;
- (b) LRAIC plus is the average efficiently incurred variable and fixed costs that are directly attributable to the activity concerned over the long-run, plus a mark-up for joint and common costs. This approach avoids the risk of being unable to recover investment costs associated with joint and common costs;

⁷³⁶ C (2009) 864 dated 9 February 2009 - at footnote 18.

- (c) ATC is the average total cost and includes variable, fixed, joint and common costs based on historical cost data but with no adjustments for efficiencies. This approach considers all relevant historic costs and so may encourage inefficient investments by operators.

Conclusion on the appropriate cost standard

- 8.245 ComReg is of the view that LRAIC plus is the appropriate cost standard for setting maximum prices in the TI WHQA Market. LRAIC Plus reflects the efficient level of costs, including an appropriate allocation of common costs, for PPC products, services and associated facilities, thus encouraging efficient and sustainable investment and – in the context of a decline of LB TI WHQA services – ensuring that correct “build/buy” signals are in place which do not undermine or discourage a migration of demand from these services to Modern Interface equivalents.

Appropriate Cost Approach: Historic Costs or Current Costs

- 8.246 ComReg now considers whether Historic Costs or Current Costs should be used in setting cost-oriented prices.

Historic Costs

- 8.247 Under the historic cost approach, an operator will recover costs that were incurred at the time of the relevant transaction in the provision of products, services or associated facilities, along with a reasonable return on investment.
- 8.248 The historical cost accounts (**‘HCA’**) are based on the actual reported financial results of an operator for a particular expired period of time.
- 8.249 One of the main concerns with the HCA accounts is their lack of granularity and therefore their suitability for cost modelling. In addition, while HCA has an advantage in that there is a reduced risk of an operator being compensated for costs it did not incur, the European Commission (BEREC) suggested that the use of historic costs is not appropriate for decision making of the NRA as these may include inappropriate costs, inter alia, inefficient investments.⁷³⁷
- 8.250 Therefore, ComReg is of the view that the use of historic costs to derive wholesale prices would not send the correct signals to the market to encourage cost reductions nor would it provide operators with a suitable benchmark for investment decisions.

⁷³⁷ BEREC Report on Regulatory Accounting in Practice 2014, Doc. No. BoR(14) 114, published 29 September 2014, Page 64.

Current Costs

8.251 The current cost approach values assets at the current market value, reflecting changes in asset prices. The current cost approach is normally implemented based on the current cost accounting ('**CCA**') system of the SMP operator (or incumbent) or based on a modern equivalent asset ('**MEA**') approach, with the aim of reflecting the costs that a hypothetical entrant would incur through investing in a modern network functionally equivalent to the legacy network. ComReg notes that Eircom no longer produces CCA accounts. With regards to the alternative MEA approach, ComReg notes that in the case of some components of network technology used for the delivery of legacy services such as TI LLS, modern equivalents no longer exist, as a result of manufacturers' supply chains having over time migrated to next generation technologies and no longer supporting legacy systems. In this context, ComReg is of the view that a modified current cost approach should be adopted, whereby the network cost model continues to be based on legacy SDH network technology with two modifications implemented. Firstly, current costs are calculated based on the legacy asset prices and price trends last provided by suppliers prior to market exit. Secondly, network service demands are calculated based on existing demands for legacy TI services and Next Generation Network ('**NGN**') Ethernet LLS, using equivalent SDH bandwidth demands, plus demands from voice services and broadband traffic. ComReg is of the view that this approach provides appropriate "build/buy" signals, which do not undermine or discourage migration incentives towards NGN Ethernet services rather than an alternative option of using a model based on an NGN Ethernet technology only. This cost model is referred to as the "**TI PPC EUL Modified Technology Cost Model**".

Conclusion on the appropriate cost approach

8.252 For the reasons set out in the preceding paragraphs, ComReg's position is that the modified current cost approach is the most relevant cost base to adopt to determine charges for LB TI WHQA products, services and associated facilities as it will continue to promote competition and appropriately reward investment by Eircom and Access Seekers.

Appropriate Cost Modelling Approach

8.253 Given ComReg's position that LRAIC Plus based on Current Costs is more appropriate where infrastructure investment is concerned, ComReg must then consider the type of model that is appropriate to adopt to determine the costs associated with the provision of LB TI WHQA services

8.254 ComReg has considered two options:

- (a) A top down ('**TD**') model; and
- (b) A bottom up ('**BU**') model.

Top-Down Model

- 8.255 A top down model uses as a starting point the current financial information of the SMP operator (or incumbent) as an input. The information required can be obtained from the financial accounts (e.g. income statement, balance sheet). One advantage in this approach is that it links the cost recovery to the actual costs incurred by an SMP operator.
- 8.256 However, the disadvantages of this approach are as follows:
- (a) The accounting information may include inefficient costs incurred by an SMP operator;
 - (b) It relies on significant amounts of detail from the SMP operator;
 - (c) It relies heavily on the robustness of the data provided by the SMP operator; and
 - (d) It cannot be converted into a forward-looking approach and may therefore provide the wrong “build/buy” signal to industry.
- 8.257 TD models can be constructed on Historic Costs or Current Costs. In a TD model based on HCA accounts, the net book value of assets is derived from the SMP operator’s fixed asset register (depreciated over their remaining useful life). In a TD model based on CCA accounts, the assets are revalued to their current costs, and discounted (via depreciation charged to date) to reflect the period of use since the initial investment. This results in a change in the depreciation and return on capital charges associated with a CCA approach rather than one based on HCA.

Bottom-Up Model

- 8.258 A BU model does not rely on historical financial data. Instead, it reflects the choices of a hypothetical, forward-looking efficient operator from both a technical and operational point of view.
- 8.259 Several approaches can be adopted. The most commonly used approaches are as follows:
- (a) **Scorched Earth:** This approach considers the theoretical situation of developing a new network with the existing network functionality but with 100% efficiency. Operators’ networks develop incrementally over many years, dealing with immediate local demands in a region and often leveraging available assets to minimise immediate costs. This leads to inevitable inefficiencies in the network design and costs when considered in retrospect.

(b) **Scorched Node:** A scorched node approach considers what and where demand exist today and allows for the design of an optimal network configuration. In the scorched node approach the existing nodes are said to be fixed whereas all other network elements can be optimised. An optimised network is then built within the constraints of the existing nodes.

8.260 A scorched node approach is often considered to be the preferred approach as it allows for the modelling of efficient costs and scale while maintaining the nodes or footprint assumptions faced by an SMP operator.

Conclusion on the appropriate cost modelling approach

8.261 ComReg's conclusion on the appropriate cost modelling approach is that a scorched node BU approach should be used in developing the appropriate cost models. Scorched node BU models provide the opportunity to exclude inefficient costs which a SMP might incur and are better suited than TD models to provide appropriate "build/buy" signals to the market. In the case of LB TI WHQA segments, as stated previously, ComReg is of the view that is desirable not to undermine or discourage an efficient migration from these legacy services to its modern equivalents and for this reason is of the view that the appropriate approach to use is the BU approach, since it is more reflective of the conditions faced by Access Seekers.

Appropriate Cost Model

8.262 In the paragraphs above ComReg reviewed the costing methodology options available to it in order to determine the appropriate costing methodology to assess the level of costs relevant to LB TI WHQA PPC products, services and associated facilities. ComReg is of the view that it is appropriate to use a BU-LRAIC plus costing methodology to implement the price control obligation of cost orientation in the LB TI WHQA Market.

8.263 In the 2012 Pricing Decision⁷³⁸ ComReg outlined the approach used to develop BU LRAIC plus cost models for 'legacy' LL products, including PPCs EULs and associated Transport Links.

⁷³⁸ See Sections 4.1 and 4.2 of 2012 Pricing Decision.

- 8.264 The respective 2012 PPC EUL cost model was revised in 2015 in light of current network service demands for both legacy and Next Generation Network ('NGN') Ethernet LLs. The revised cost model is based on legacy SDH network technology, catering for the demands of both legacy and next generation services and this approach was adopted to provide appropriate migration incentives towards NGN Ethernet services (as outlined in paragraph 8.251). As noted, this cost model is referred to as the **"TI PPC EUL Modified Technology Cost Model"**.⁷³⁹
- 8.265 In addition to the 2015 review outlined above, ComReg has further reviewed the PPC EUL components in 2017⁷⁴⁰ and assessed that there was no requirement to update prices pursuant to the price control obligations imposed in the 2012 Pricing Decision. In this respect, ComReg compared the revenues derived from PPC EUL products against the costs determined in the underlying cost model and found the existing prices to be aligned with costs. In particular, these revenues were derived by taking the existing price schedule for PPC EUL products and equivalents for WLL products (within the 64Kb/s and 2Mb/s bandwidth range), as listed in Eircom's LLRO⁷⁴¹, and applying it to the volume and mix of LB TI LLs.⁷⁴²
- 8.266 In relation to Transport Links, ComReg notes there is a requirement for Eircom to complete a review of the BU-LRAIC plus cost models used to determine cost oriented prices for these services. These cost models were originally developed by Eircom and subsequently reviewed by ComReg and its consultants. Therefore, it is ComReg's view that Eircom must update these models and derive revised cost oriented prices for Transport Links.

⁷³⁹ Details of this model and ComReg's approach to reviewing the 2012 PP EUL model are outlined in the 2016 Consultation ("Market Review - Wholesale High Quality Access at a Fixed Location, Consultation, ComReg Document 16/69, 18 August 2016"), paragraphs 8.233 to 8.253, and are not repeated in this Decision.

⁷⁴⁰ ComReg notes that there was no price changes in 2018 with respect to PPC EULs.

⁷⁴¹ http://www.openeir.ie/Products/Data/Leased_Lines/.

⁷⁴² Note that the cost base of the model was designed to cater for the demands of both TI leased lines and NGN equivalents.

Overall conclusion on Appropriate Cost Model

- 8.267 ComReg's conclusion is that BU-LRAIC plus cost models are the basis for establishing the maximum prices for PPC products, services and associated facilities in the LB TI WHQA Market. The model used for deriving the costs associated with TI PPC EUL products is referred to as the "**TI PPC EUL Modified Technology Cost Model**". ComReg is of the view that the modelling approach should continue to focus on the use of SDH network technology in order to maintain the incentive to migrate service demands to MI LL products in the future.
- 8.268 In relation to Transport Links the suite of existing BU-LRAIC plus cost models is the appropriate basis for deriving the costs for Transport Link services and it is ComReg's view that Eircom must complete a review of the associated capital and operating costs and update these models accordingly.

Pricing Approach

Pricing approach for PPCs, PPC equivalents and related Transport Links

- 8.269 ComReg's most recent review of the updated BU-LRAIC plus cost model has shown that the current PPC EUL prices were aligned with the efficient costs of providing these services. Furthermore, ComReg notes the continuing decline in overall product service demands for LB TI LLs.⁷⁴³ Therefore, ComReg's final position is that the most proportionate implementation of the cost orientation obligation for TI LB PPC EULs is for the existing prices as set out in Eircom's LLRO⁷⁴⁴ to apply as price ceilings for these services.
- 8.270 Transport Links prices should also be based on the existing suite of Eircom provided BU LRAIC plus cost models. However, as it was noted previously, this suite of cost models require a review of both the operating and capital costs, so that the prices adhere to the obligation of cost orientation. ComReg's final position is that this obligation should be addressed by Eircom, by submitting a proposal to ComReg with the updated cost oriented prices for these services within five (5) months from the date of this Decision, including an explanation demonstrating how the new prices are in compliance and supported by detailed calculations.

⁷⁴³ See Section 3.

⁷⁴⁴ Specifically and for clear reference, these are the prices contained in Eircom's Network price list version v.12 Network Price List V12_0 marked 01072019 (Network Price List V12_0 unmarked 01072019), effective from 1st July 2019, available at: http://www.openeir.ie/Products/Data/Leased_Lines/

- 8.271 With respect to connection charges for PPCs, ComReg's final position is that these charges be cost oriented, based on the actual costs incurred by Eircom, adjusted for efficiencies, plus a regulated rate of return. The adjustment for efficiencies is to ensure that Eircom is unable to recover inefficiently incurred costs.
- 8.272 Furthermore, as stated in paragraph 8.232, ComReg's decision is to withdraw the margin squeeze test currently applied between end-to-end wholesale leased line prices and wholesale PPC EULs products, with immediate effect upon publication of this Decision. ComReg may carry out a periodic review of the main aggregated model inputs, such as costs and volumes to assess if any material or exceptional changes associated with model inputs are required to re-assess the risk of cost over-recovery.

Summary of Price Control and Cost Accounting Remedies

- 8.273 Having regard to the analysis set out in paragraphs 8.204 to 8.272 above, ComReg's position is that price control obligations of cost orientation, including cost accounting, are proportionate and justified. This position is consistent with the preliminary conclusions set out in the 2016 Consultation and in the 2018 Further Consultation.
- 8.274 Therefore, ComReg's decision is to continue the imposition of a price control obligation of cost orientation, including cost accounting, on Eircom with respect to LB TI WHQA products, services and associated facilities:
- (a) The price control obligation of cost orientation, including cost accounting, will continue to apply to LB TI WHQA PPC products, services and associated facilities, including EULs and Transport Links;⁷⁴⁵
 - (b) Cost orientation is to be based on a BU-LRAIC plus cost modelling approach, based on current cost data and on the costs of a SDH network;
 - (c) Eircom's existing prices in respect of LB TI WHQA EULs will apply as price ceilings for these services;
 - (d) With respect of TI WHQA Transport Links Eircom shall submit within five (5) months from the date of this Decision a proposal with updated cost oriented prices;
 - (e) The margin squeeze test obligations, currently applied between end-to-end wholesale leased line prices and wholesale PPC EULs products, will be withdrawn with immediate effect from the date of this Decision.

⁷⁴⁵ See paragraph 8.67 above.

8.10 Accounting Separation Remedies

Overview

- 8.275 In Section 7 ComReg identified that Eircom has the ability and incentive to potentially engage in a range of anti-competitive pricing behaviours to the ultimate detriment to competition and consumers. These included the risk that Eircom could charge excessive prices for LB TI WHQA products, services and facilities. In view of this, ComReg considers that the imposition of obligations of accounting separation on Eircom is justified, in addition to the imposition of the price control obligation of cost orientation and cost accounting.
- 8.276 ComReg also concluded in the 2016 Consultation that the imposition of obligations of accounting separation and cost accounting on Eircom was justified.⁷⁴⁶ This position was maintained in ComReg's 2018 Further Consultation, supported by a review of the 2016 Respondents' views to the 2016 Consultation.⁷⁴⁷
- 8.277 In deriving a decision to impose accounting separation and cost accounting remedies for LB TI WHQA products, ComReg has taken into account the 2016 Consultation and the 2018 Further Consultation and the Respondents' views to both these consultations. In relation to the Respondents' views on the 2018 Further Consultation, ComReg's assessment of these views is discussed in Annex 1, Section A.1.8.4 of this Decision.
- 8.278 In general, if specific price control obligations, via cost orientation, are to be meaningful, it may be necessary to have a clear and comprehensive understanding of the SMP operator's costs incurred in the provision of the associated products and services. Obligations to maintain appropriate cost accounting systems generally support obligations of price control and accounting separation, and can also assist ComReg in monitoring the obligation of non-discrimination.

⁷⁴⁶ See paragraphs 8.258 to 8.263 of the 2016 Consultation.

⁷⁴⁷ See paragraphs 7.131 and 7.138 of the 2018 Further Consultation.

ComReg's Position on Accounting Separation Remedies

- 8.279 Having regard to the need to support the effectiveness of the proposed price control obligations set out above, ComReg's final position is to impose accounting separation and cost accounting obligations upon Eircom in the LB TI WHQA Market. In this respect, Eircom shall ensure that it maintains appropriate cost accounting systems to justify its prices and costs. This position is consistent with the preliminary conclusions set out in the 2016 Consultation⁷⁴⁸ and in the 2018 Further Consultation.⁷⁴⁹
- 8.280 The burden of proof rests in law with Eircom to show that its prices/charges for LB TI WHQA LL and related interconnection facilities are cost oriented, having regard to the nature of the proposed price control obligations. Furthermore, for the purpose of calculating the costs of efficient provision of PPC services, in accordance with Regulation 13(4) of the Access Regulations, ComReg notes that it may also use cost accounting methods independent of those used by any service provider in the market. Additionally, ComReg can also issue direction requiring an operator to provide full justification for its prices, and may, where appropriate, require prices to be adjusted.

Accounting Separation Remedies

- 8.281 ComReg's decision is to retain the obligation requiring Eircom to publish in its Separated Accounts a Consolidated Income Statement and Consolidated Statement of Mean Capital Employed for Wholesale Leased Lines (WHQA). This arises in light of the decision for ongoing cost orientation regulation of TI Market based PPC products at bandwidths of 2Mb/s and below, and of the decision for the price control obligation of cost orientation to continue to apply in the Zone B MI WHQA Markets.

⁷⁴⁸ See paragraphs 8.263 of the 2016 Consultation.

⁷⁴⁹ See paragraph 7.139 of the 2018 Further Consultation.

8.282 ComReg recognises the declining materiality of wholesale revenues realised by Eircom from LB TI WHQA products and the removal of obligations applicable to wholesale HB TI and Wholesale Leased Lines (WLLs). Therefore, to ensure that the accounting separation obligations remain proportionate, ComReg's decision is that Eircom retain the obligation to publish in the HCA Separated Accounts⁷⁵⁰ a Consolidated Income Statement and Consolidated Statement of Mean Capital Employed for Wholesale Leased Lines (WHQA). In addition, ComReg notes that the existing statement of average revenues and average costs by service included in the published Separated Accounts is segmented to include four classifications of TI leased line products (PPC EUL and Leased Lines equal or less than 155Mb and PPC EUL and Leased Lines greater than 155Mb). This Decision identifies that only low bandwidth EUL products (equal to or less than 2Mb) within the classification PPC EULs Rental equal or less than 155Mb will retain SMP obligations. In this regard, ComReg's view is that it is sufficient to only require accounting separation of LB TI products equal or less than 2Mb in the Additional Financial Information (AFI) statements. Following from this, it is ComReg's decision that in the published statement of average revenues and average costs ('Statement of average cost and revenue by service') that the existing four categories noted above can be consolidated into one TI WHQA category, with no obligation to report volumes and average revenues and average costs (i.e. similar to the existing treatment of the segment Wholesale Ethernet Rental). Similarly, the Wholesale Leased Lines statements contained in the Additional Financial Statements, which also currently provides revenues and costs for the four classifications of TI Leased Line products can be consolidated in one single Income Statement for TI leased line products and reported instead within the Additional Financial Information submissions. Further to this, it is ComReg's decision to require accounting separation for PPC EULs of bandwidths equal or less than 2Mb in the Additional Financial Information (AFI) statements, with a reporting requirement to provide total revenue and costs, and average revenues and average costs. This will ensure that ComReg will retain the capacity to monitor this market.

Summary of Accounting Separation Remedies

8.283 Having regard to the analysis set out in paragraphs 8.279 to 8.282 above, ComReg's position is that accounting separation obligations are proportionate and justified. This position is consistent with the preliminary conclusions set out in the 2016 Consultation and in the 2018 Further Consultation.

⁷⁵⁰ <https://www.comreg.ie/media/2018/11/Note1.pdf>

- 8.284 Therefore, ComReg's decision is to continue the imposition of accounting separation obligations on Eircom with respect to LB TI WHQA products, services and associated facilities.
- 8.285 Existing accounting separation obligations continue to apply. However, a number of changes will apply in relation to the disclosure of revenues and costs associated with LB TI WHQA products. These include:
- (a) The consolidation of revenue and costs of the existing four classifications of TI leased line products into a single TI WHQA classification in the existing 'Statement of average cost and revenue by service', in the published Separated Accounts, or HCA Statements;
 - (b) The removal of the obligation to report volumes and average revenues and average costs for TI WHQA products in the existing 'Statement of average cost and revenue by service', in the published Separated Accounts, or HCA Statements;
 - (c) The consolidation of revenue and costs of the existing four classifications of TI leased line products into a single TI WHQA classification in the Wholesale Leased Lines Income Statement within the Additional Financial Statements;
 - (d) The removal of the above Wholesale Leased Lines Income Statement from the Additional Financial Statements and its inclusion within the Additional Financial Information (AFIs) statements;
 - (e) The provision of a statement of volumes and average revenues and average costs for PPC EUL products, with bandwidths of 2Mb or less, within the Additional Financial Information statements.

9 Competition Problems in the Zone B MI WHQA Markets and Impacts on Competition and Consumers

9.1 Overview

- 9.1 In this Section ComReg now seeks to identify those competition problems which, absent regulation⁷⁵¹, could potentially arise in the Zone B MI WHQA Markets and, having done so, ComReg proceeds in Section 10 to consider the imposition of appropriate remedies to address these identified competition problems.
- 9.2 Of the Seven Submissions received from Respondents in response to the 2018 Further Consultation, Five Respondents (ALTO, BT, Eircom, enet and Vodafone) commented on ComReg's assessment of competition problems in the Zone B MI WHQA Markets. Four Respondents (ALTO, BT, Eircom, enet and Vodafone) agreed with ComReg's assessment while One Respondent (Eircom) disagreed. ComReg summarises and assesses these comments in Section A.1.9 of Annex 1 of this Decision.
- 9.3 In summary, ComReg has decided to maintain its preliminary view on competition problems described in its 2016 Consultation and 2018 Further Consultation in the now identified Zone B MI WHQA Markets that Eircom, as the Undertaking designated with SMP, has the ability and incentive to:
- (a) exploit customers by setting excessive wholesale charges;
 - (b) exclude competition in downstream retail and/or horizontal wholesale markets; and
 - (c) engage in exclusionary behaviour which would deter entry and investment into the Zone B MI WHQA Markets.

⁷⁵¹ WHQA products have to date been provided by Eircom pursuant to regulatory obligations imposed on it under the 2008 Decision (and subsequent decisions). The assessment carried out in this Section of the Consultation is carried out in the context of what competition problems would be likely assuming that such SMP obligations were not in place.

- 9.4 In Section 6 of this Decision, ComReg set out its position that, in accordance with Regulation 27(4) of the Framework Regulations, the Zone B MI WHQA Markets are not likely to be effectively competitive and has decided that Eircom should be designated as having SMP in these markets.
- 9.5 In accordance with Regulation 27(4) of the Framework Regulations, where an Undertaking is designated as having a position of SMP in a relevant market, ComReg is required to impose on that Undertaking one or more of the obligations (or remedies) set out in Regulations 9 to 13 of the Access Regulations, as ComReg deems appropriate.
- 9.6 As noted in the European Commission's Explanatory Note to the 2014 Recommendation, the underlying purpose of the *ex ante* regulatory framework is to deal with predictable competition problems that have their origin in structural factors in the industry. For example, the finding of an absence of effective competition in the Zone B MI WHQA Markets indicates the potential for competition problems to arise within them over the review period in question, thereby justifying the imposition of *ex ante* regulation as appropriate.
- 9.7 It is ComReg's position that the underlying ability and incentives for Eircom to potentially engage in anti-competitive behaviour absent regulation is due to the lack of effective competition in the Zone B MI WHQA Markets, coupled with Eircom's position as a vertically integrated supplier competing with its wholesale customers in the horizontally related Zone A MI WHQA Markets and related downstream markets such as the Retail MI LL market.
- 9.8 ComReg would note that it is neither necessary to catalogue examples of actual abuse nor to provide exhaustive examples of potential abuse. Rather, the purpose of *ex ante* regulation is to prevent the possibility of Eircom engaging in anti-competitive behaviour given that Eircom has been identified as having SMP in the Zone B MI WHQA Markets and its ability and incentives to do so as noted above.

9.2 Types of Competition Problems

- 9.9 In determining what form of *ex ante* regulatory remedies are justified in the Zone B MI WHQA Markets, ComReg has carried out an assessment of potential competition problems that are likely to arise, assuming regulation is absent and taking account of the structure and characteristics of the Zone B MI WHQA Markets.
- 9.10 In the absence of regulation in the Zone B MI WHQA Markets, ComReg considers that Eircom would have the ability and incentive to influence competition through effects on prices, innovation, output and the variety or quality of goods and services provided. In general, there are a number of competition problems that may arise when an SMP operator seeks to:

- (a) exploit customers or consumers by virtue of its SMP position;
- (b) leverage its market power into adjacent vertically or horizontally related markets with a view to foreclosing or excluding competitors in downstream markets; and
- (c) exclude or delay investment and market entry in the Zone B MI WHQA Markets (and ultimately downstream markets) .

9.11 In considering the above competition problems that could arise⁷⁵², ComReg has also been guided by experience in the market. Although it is not necessary *per se* to demonstrate actual abuse, examples of competition problems which have previously arisen even in the presence of existing regulation, can help ground the analysis in actual experience.

Exploitative Practices

9.12 Economic theory suggests that where a firm holds market power it is in a position to increase prices above competitive levels and/or reduce output below competitive levels, thereby earning higher than normal profits. These higher profits effectively create a wealth transfer from the consumer to the firm with market power. It is ComReg's position that Eircom, as the Undertaking with SMP in the Zone B MI WHQA Markets, and, given its presence in a number of adjacent markets, would have the ability and incentive to engage in exploitative practices. Such exploitative practices could include excessive pricing, inefficiency or inertia to the ultimate detriment of End Users. These potential concerns are considered below.

Excessive Pricing

9.13 According to EU competition case law, excessive pricing refers to a situation where the prices charged by a dominant Undertaking are not closely related to the value to the consumer and/or the cost of producing or providing the relevant service.⁷⁵³ Concerns about excessive pricing arise where, absent regulation, price levels are likely to be persistently high with no effective pressure (e.g. from new entry or innovation) to bring them down to competitive levels over the period of the review.

⁷⁵² Such issues are also considered in Section 10 in the context of appropriate remedies (regulatory obligations) to address completion problems.

⁷⁵³ Case C 27/76 United Brands v. Commission, [1978] ECR 207, [1978] 1 CMLR 429, paragraph 250. In United Brands the Court of Justice of the European Union held that: "...charging a price which is excessive because it has no reasonable relation to the economic value of the product supplied would be... an abuse".

- 9.14 Eircom's presence in the Zone B MI WHQA Markets is characterised by a high and stable aggregate market share (as set out in Section 6, at the end of 2018 Eircom's market share was [redacted] ⁷⁵⁴), highlighting an absence of existing effective competition, high and non-transitory barriers to entry associated with control over infrastructure not easily replicated, and limited scope for potential competition and insufficient Countervailing Buyer Power ("CBP"). Thus, there is likely to be insufficient pressure to constrain Eircom from behaving, to an appreciable extent, independent of its customers, competitors or consumers.
- 9.15 Furthermore, there is also insufficient pressure to prevent Eircom from engaging in excessive pricing behaviour in the Zone B MI WHQA Markets ⁷⁵⁵. Hence, ComReg considers that Eircom is likely to have incentives to exploit its Zone B MI WHQA customers in this manner as it competes with these SPs in downstream retail and/or related wholesale markets.
- 9.16 For example, by raising the price of Zone B MI WHQA inputs above the competitive level, this would raise input costs for those SPs that purchase Eircom's MI WHQA products/services (assuming Eircom would provide them with such inputs absent regulation) in order to offer services in the downstream retail and/or wholesale markets (or indeed as own network inputs). Given that such above cost wholesale prices may be passed on by SPs to their retail and/or wholesale customers via higher prices, it would raise their input costs. These would likely have to be passed on to downstream customers (or potentially absorbed by the SP in the short-run), and ultimately lead to distortions of competition in downstream retail and/or wholesale markets – for example, SPs' customers could, in response to price increases, switch to Eircom potentially undermining the SPs revenues and cause them to potentially contract within or exit from the relevant market. In this way, Eircom's excessive pricing of MI WHQA inputs could lead to the exclusion of competitors (who purchase these MI WHQA inputs) from the downstream retail and/or wholesale markets, and ultimately hinder effective competition in these markets.
- 9.17 Excessive prices can pose a deterrent to entry in downstream markets and also distort investment incentives as the higher charges raise costs of production for the SPs that purchase from Eircom and thereby constrain their ability and incentive to invest in additional infrastructure.

⁷⁵⁴ Between 60% and 70%.

⁷⁵⁵ As noted in Section 10.4 of this Decision, Eircom's wholesale prices in the MI WHQA Markets are currently regulated under the 2008 Decision and the 2012 Pricing Decision.

- 9.18 To address the potential for excessive pricing in the Zone B MI WHQA Markets, ComReg considers that *ex ante* regulation is required. Competition law applied on an *ex post* basis is often unsuitable in preventing excessive pricing, and this is evidenced by the scarcity of successful *ex post* excessive pricing cases within EU jurisprudence. An *ex post* approach to excessive pricing in markets such as the Zone B MI WHQA Markets which is characterised by a lack of effective competition and high and non-transitory entry barriers, is not likely to offer adequate protection for consumers or promote effective competition. This is because addressing the issue of excessive pricing through competition law approaches (if it is proven to the required competition law standard) would likely occur substantially after the occurrence of the competition problem itself, thereby contributing to significant uncertainty amongst downstream market participants in the interim and undermining the development of effective competition to the detriment of consumers.
- 9.19 Eircom's MI WHQA products are currently regulated via various price control obligations as set out in Section 10.4 below. Absent such regulation, ComReg considers that prices for such products would not likely be set at a competitive level⁷⁵⁶. Given the ability and incentives for Eircom, as the SMP Undertaking, to engage in excessive/exploitative pricing, transparency, price control and related cost accounting obligations are therefore considered justified by ComReg to ensure that prices are set at levels that are reflective of the underlying efficient cost of providing these products and that such charges are applied in a non-discriminatory fashion to other Access Seekers and between Access Seekers and Eircom to itself.

Leveraging

- 9.20 Where a vertically integrated Undertaking has SMP in one market that has close links with other adjacent markets either at a similar (e.g. horizontal) or different (e.g. vertical) level in the production or distribution chain, the SMP Undertaking may attempt to transfer (leverage) its market power to such vertically and/or horizontally related markets. This could enable the SMP Undertaking to strengthen its position in those related markets and/or potentially reinforce its existing market power in the SMP market in question.

⁷⁵⁶ For example, pricing that allows Eircom to recover its efficiently incurred costs plus a reasonable rate of return.

- 9.21 Given the close relationship between the Zone A MI WHQA Markets and other horizontally related markets (e.g. Zone B MI WHQA⁷⁵⁷) and vertically related markets (e.g. WLA and retail LL market(s)), there is potential for leveraging to occur, absent regulation. Leveraging may raise rivals' costs, introduce barriers to effective access to MI WHQA products, services and facilities in a timely manner, reduce competitive pressures on related wholesale/retail services and enable the SMP Undertaking to extract additional revenues from its competitors, customers and ultimately consumers.

Horizontal Leveraging

- 9.22 Horizontal leveraging arises where an Undertaking with market power in one market is able to use it to exert undue influence into other markets that are at a similar level in the production or distribution chain. Examples of horizontal leveraging can include certain tying/bundling practices, cross subsidisation/predatory-type behaviour and/or where the SMP Undertaking may seek to foreclose infrastructure-based competitors by way of an insufficient economic space⁷⁵⁸ between the relative pricing of different upstream/intermediate inputs.
- 9.23 In the context of this market review, horizontal leveraging may occur where Eircom, the designated SMP Undertaking in the Zone B MI WHQA Markets, is competing in the horizontally adjacent Zone A MI WHQA Markets and has the ability and incentive to negatively impact the position of its competitors in this market. Absent regulation in the Zone B MI WHQA Markets, Eircom could be incentivised to cross-subsidise retail and/or wholesale services offered in the Zone A MI WHQA Markets (e.g. lower prices for MI LLs). This would allow it to gain market share in the Zone A MI WHQA Markets and by leveraging its position in the Zone B MI WHQA Markets where it faces less infrastructure based competition from other SPs.
- 9.24 Furthermore, where SPs who compete in the Zone B MI WHQA Markets require MI WHQA services for network extension – such as for backhaul⁷⁵⁹ – Eircom is likely to have the ability and incentive to foreclose access to such services thus dampening competition in the Zone B MI WHQA Markets for related services, such as MI WHQA to premises.

⁷⁵⁷ For example, an Access Seeker may purchase MI WHQA services in both the Zone A MI WHQA Markets and the Zone B MI WHQA Markets from the same supplier. Absent a wholesale supplier having the ability to serve these needs, its position in both these markets may be undermined.

⁷⁵⁸ “Economic space” refers to an appropriate space between the pricing of related wholesale or intermediate products/services sufficient to promote sustainable infrastructure competition to the benefit of End Users.

⁷⁵⁹ Including for mobile backhaul.

- 9.25 ComReg considers that, absent regulation, these types of issues could arise in the Zone B MI WHQA Markets given that Eircom is competing in downstream markets within which Access Seekers also compete or may seek to compete.

Vertical Leveraging

- 9.26 Vertical leveraging arises where a vertically integrated Undertaking is able to leverage its SMP position at one level in the production or distribution chain into downstream markets in which it is also active.
- 9.27 In the context of the Zone B MI WHQA Markets, vertical leveraging may occur given that Eircom, as the designated SMP Undertaking, has the incentive to use its market power in this market to ultimately affect the competitive conditions in downstream retail markets, in particular, through its ability to control the key network inputs used by Access Seekers - which compete against Eircom in these downstream markets. This could result in a distortion of, or reduction in, competition in these downstream markets, thus potentially resulting in harm to consumers in the form of higher prices, lower output/sales, reduced quality or consumer choice.
- 9.28 ComReg considers that, absent regulation, vertical leveraging could arise in the Zone B MI WHQA Markets, because Eircom is a vertically-integrated Undertaking, has SMP in this market, and has the ability and incentive to leverage that market power into downstream markets, including (but not limited to) the provision of retail LL services. This would serve to enhance its market power in these downstream markets.
- 9.29 In this regard, ComReg notes that most of retail LLs are purchased by Multi-site customers⁷⁶⁰. As noted in Section 4 above, the majority of these customers tend to select one retail SP for the provision of retail LL services to all of their premises that can frequently be located in both the Zone A MI WHQA and the Zone B MI WHQA Markets. Thus, ComReg considers that the nature of the demand for retail MI LL services, further enhances Eircom's ability and incentive to leverage its market power in the Zone B MI WHQA Markets into the retail MI LL market as Eircom has a strong competitive advantage in terms of its network reach to Multi-site retail LL customers' premises when compared to the reach of other SPs' networks⁷⁶¹. ComReg considers that Eircom is likely to have the ability and incentive to foreclose access to Zone B MI WHQA services and leverage its market power into the retail MI LLs markets.

⁷⁶⁰ See paragraph 4.126 above.

⁷⁶¹ See paragraph 5.244 above and Section A.1.2.3 below.

Price Based Vertical Leveraging Behaviour

- 9.30 Vertical leveraging may also be evident in pricing behaviour and, absent regulation, Eircom could attempt to foreclose competition in a downstream market by offering MI WHQA products at a price that would not allow an efficient Access Seeker to earn a sufficient margin and recover their efficiently-incurred costs.
- 9.31 This could result in the foreclosure of competition from an Access Seeker through margin squeeze. However, ComReg's position is that access to MI WHQA services in the Zone B MI WHQA Markets at cost orientated prices is sufficient to ameliorate the competition problems that could arise in the retail MI LLs market due to Eircom's likely SMP in that market.
- 9.32 This is because, in the context of multi-site customers, competitors of Eircom in the retail MI LL market should be able to leverage the effective competition in the Zone A MI WHQA Markets along with MI WHQA services via the Zone B MI WHQA Markets at cost orientated prices⁷⁶² to compete effectively with Eircom in adjacent markets. As such, the presence of an effective cost orientation obligation, the risks to effective competition in the retail MI LL market from a margin squeeze are likely to be negated.
- 9.33 Price discrimination could be used by a vertically integrated operator with SMP in the Zone B MI WHQA Markets to raise an Access Seekers' costs downstream and induce a margin squeeze. This is achieved by charging a higher price (above cost) to downstream competitors than implicitly charged to its own retail arm. Such a margin squeeze between MI WHQA price and downstream LL prices could undermine the effectiveness of a MI WHQA product offering and, in doing so, could harm competition in downstream retail markets by eliminating competing SPs, distorting competition or discouraging the entry of new SPs. However, ComReg is of the view that, in the presence of an effective cost orientation obligation, the risks to effective competition in the retail MI LL market from price discrimination are likely to be negated.

⁷⁶² i.e. on the same price, terms and conditions as Eircom's retail arm

- 9.34 Another example of pricing behaviour is predatory pricing. This could occur where a vertically integrated operator with SMP seeks to sell a MI WHQA product below the costs of production for a sustained period of time, with the intention of deterring market entry or putting a rival operator out of business, enabling the SMP operator to further increase its market power and later to raise prices. While consumers may benefit in the short run from low prices, consumer welfare is reduced in the long run due to the elimination of competition and consumer choice in the market. A vertically integrated operator with SMP upstream supplying an input to retail competitors might engage in predatory pricing at the retail level to expose retail competitors to a margin squeeze. However, ComReg is of the view that, in the presence of an effective cost orientation obligation, the risks to effective competition in the retail MI LL market from predatory pricing are likely to be negated.

Non-Price Based Vertical Leveraging Behaviour

- 9.35 Vertical leveraging could be undertaken by Eircom in a number of ways, absent regulation in the Zone B MI WHQA Markets. For example, vertical leveraging can manifest as an outright refusal to supply or a constructive refusal to supply. Refusal to supply is particularly relevant when the SMP operator is vertically integrated which facilitates the SMP operator to gain strategic advantage over rivals in the downstream markets.
- 9.36 Other examples of non-price vertical leveraging, which can be closely related to each other, can amount to constructive rather than outright denial of access, including:
- (a) **Delaying tactics:** this relates to issues such as protracted negotiations with respect to the supply of existing or new MI WHQA products, services or associated facilities to downstream competitors. Another example would be the use of contract terms to effectively dissuade a customer from moving to a competing SP in a timely manner, thereby undermining the effectiveness of access to MI WHQA products, services and facilities. Eircom, as the SMP operator, has the ability and incentive to engage in a 'first mover advantage' by offering a retail offering before an equivalent wholesale product is made available to potential Access Seekers. This first mover advantage has the potential to cause delay and raise the Access Seekers' costs relative to the SMP operator and restrict the Access Seekers potential future retail sales.
 - (b) **Quality discrimination:** providing competitors with MI WHQA products at a lower quality of service (or inferior information) to that which Eircom provides to its own downstream arm (or to certain other competitors). For example, Eircom could give priority to its own customers when repairing faults or upgrading network assets.

- (c) **Creating or exploiting information asymmetries and the withholding of relevant information:** where competitors are dependent on Eircom to provide MI WHQA and need certain (quality or technical) information in order to effectively compete in the downstream retail and/or wholesale market, a lack of transparency or asymmetry in the provision of relevant information can impede competition. For example, a lack of transparency in the terms and conditions of supply for MI WHQA products that are self-supplied by Eircom could make it difficult for Access Seekers to make effective commercial or operational decisions that involve the use of MI WHQA inputs in the provision of their own downstream services. Such a lack of transparency could also fail to assure Access Seekers that low bandwidth MI WHQA products are provided on a non-discriminatory basis (including whether Eircom is in a position to demonstrate that there is equivalence of access).
- (d) **Disproportionate entry/use criteria:** This may, for example, include Eircom setting unreasonable terms and conditions for supply/use of access to MI WHQA products (including associated facilities). An example of this behaviour would include an undue requirement to use a particular (more expensive) technology beyond the extent which might be economically or technically justified.
- (e) **Unwarranted withdrawal of access already granted:** Eircom could seek to unreasonably withdraw access to facilities already granted.
- (f) **Unreasonable product bundling/tying:** this could include the bundling/tying of MI WHQA products in such a way that it damages the ability of Access Seekers to compete downstream. For example, if Eircom required Access Seekers using MI WHQA services to also purchase additional and unnecessary services that raises Access Seekers' costs of providing downstream retail services, this could damage their ability to compete effectively.

9.37 Further examples of the above non-price leveraging behaviours arise where a vertically-integrated SMP Undertaking may create or exploit information asymmetries to the detriment of downstream competition. This could include for example any differences in interface between the SMP Undertaking's internal access to IT systems, and wholesale customers' access. The infrastructure associated with OSS and Business Support Systems ('BSS') is supported by IT systems, which evolve over time. Where, for example, Access Seekers do not have visibility or input into relevant Eircom's IT system changes and are not aware of the IT development process and its timetable, they will be unable to contribute or to make a request for service at the appropriate point. Moreover, it may be the case that operational changes of this kind are not implemented simultaneously or to the same standard for external and internal access.

Information Asymmetries

- 9.38 Given that Eircom is vertically integrated, it may also be difficult to compare the MI WHQA products (and associated facilities) its uses internally with those offered to Access Seekers, as well as to compare how MI WHQA products are developed and implemented. A lack of transparency in how products are both developed and implemented internally could also make it difficult to demonstrate equivalence and could provide an incentive for non-price means of leveraging market power. For example, in terms of product offerings, absent regulation, Eircom, as the Undertaking designated with SMP in the Zone B MI WHQA Markets, could make downstream retail products using MI WHQA inputs which Access Seekers could not match, because no wholesale equivalent has been made available. In terms of product implementation, if Access Seekers are not aware of all the features of the wholesale products which are available to Eircom internally, they will not know that they can request these features themselves, and ultimately may find themselves offering an inferior product at the retail level. Furthermore, where certain MI WHQA services/information necessary for preparing a bid/tender proposal for a customer contract are not made available to competitors in sufficient time, this could also impede their ability to compete with the SMP operator for important downstream customers.
- 9.39 Another example of information asymmetries could include situations where Access Seekers require metrics on order processing, service delivery and fault repair to view the overall performance of Eircom's MI WHQA products from a provisioning and service assurance perspective. Failure by Eircom to provide such data to its wholesale customers would likely impair their ability to compare the performance of Eircom's supply of wholesale products. Uncertainty for Access Seekers (and their retail and/or wholesale customers) as to the performance and quality of their purchased MI WHQA inputs relative to the services and information made available internally to Eircom's retail arm could potentially discourage participation in markets dependent upon Eircom's wholesale products (for example, through a lack of visibility of average line-fault repair time between Eircom retail and wholesale customer faults).

- 9.40 Information asymmetries may also apply to future planning by the SMP Undertaking. For example, changes by Eircom to its network topography such as its location of points of interconnection may have significant implications for Access Seekers using MI WHQA products. Insufficient notice of network and process changes relevant to the delivery of services in the retail market could significantly impede the ability of MI WHQA Access Seekers to launch corresponding retail products and to compete with Eircom on an equivalent basis in downstream markets. A lack of information and the associated uncertainty may discourage Access Seekers from investing in or expanding their network footprint (to avail of MI WHQA products)⁷⁶³ or downstream footprint (since there may be a perceived risk of stranded assets). Furthermore, such information asymmetries may lead to a delayed consideration of Access Seekers' wholesale requirements as part of such network developments, also delaying/impeding their ability to respond to any new downstream offerings by the SMP Undertaking.
- 9.41 A vertically-integrated SMP Undertaking could also have an incentive to frustrate the retail/wholesale switching process through which retail customers can switch to an alternative product or an alternative SP. Access Seekers may wish to migrate their downstream customers between wholesale products (or from wholesale products onto products offered on their own network), and may wish to carry out single or bulk migration of their customer base. This should involve minimal disruption or delay from the downstream customer's perspective. Examples of actions which could disrupt the migration process could include rejecting migration orders on the basis of technicalities which were not made known to the requesting Access Seekers, requesting additional customer authorisation agreements, or preventing the shift of a large number of retail customers to alternative service provision. This type of action would impose an additional and unnecessary switching cost on Access Seekers and ultimately retail customers.

⁷⁶³ Access Seekers' use of MI WHQA products depends on the extent of their backhaul network. Investing in backhaul depends on the location of Eircom's Points of Interconnection.

- 9.42 Further examples of potential leveraging behaviour related to the above could include possible disruption of customer migration processes such as failing to switch bundles of services in a seamless and co-ordinated manner (such that any service loss by the switching retail customer is minimised, if not entirely eliminated) and practices aimed generally at raising rivals' costs.⁷⁶⁴
- 9.43 ComReg considers that, absent regulation, these types of issues could arise in the Zone B MI WHQA Markets given that Eircom is competing in downstream markets within which Access Seekers also compete or may seek to compete.

Exclusionary Practices

- 9.44 As with the examples of vertical and horizontal leveraging, the SMP operator may attempt to foreclose competition in the Zone B MI WHQA Markets by engaging in conduct aimed at defending its position and/or foreclosing the market.
- 9.45 ComReg's view is that exclusionary behaviour that is likely to take place in the Zone B MI WHQA Markets is behaviour closely associated with the ability and incentives of a vertically-integrated SMP Undertaking, as discussed in the above, in the context of leveraging and the exclusionary impacts in horizontally or vertically related markets. These include (but are not limited to) foreclosing competition by:
- (a) refusing to supply access, applying unreasonable or discriminatory terms and conditions of access, and/or creating or exploiting information asymmetries;
 - (b) engaging in exclusive contracts with downstream customers and exclusionary actions aimed generally at raising customer or consumer switching costs thereby impacting on potential competition; and
 - (c) raising costs of those competitors that rely on Eircom's MI WHQA inputs in providing downstream retail and/or wholesale services.
- 9.46 ComReg's position is that, as the vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets, Eircom has both the ability and incentives to restrict or distort the development of competition in the Zone B MI WHQA Markets.

⁷⁶⁴ Unlike predatory pricing, certain practices can be employed which unfairly raise rival's costs and reduce competition but which do not necessarily require the SMP Undertaking to incur short run losses. For example, an integrated firm with market power in an upstream market may have incentives to raise the price of the inputs it sells to its downstream rivals, thereby potentially raising their costs and reducing demand for their products. Furthermore, the integrated operator could potentially give priority to its own traffic at network bottlenecks or apply standards that are easier for its own retail affiliate to meet than for its downstream competitors. (See Krattenmaker, T.G. and S.C. Salop (1986) "Anticompetitive Exclusion: Raising Rival's Costs To Achieve Power over Price", Yale Law Journal, 96:209-93; Salop, S.C. and D.T. Scheffman (1987), "Cost-Raising Strategies", Journal of Industrial Economics, 36:19-34).

9.3 ComReg's Position on Competition problems in the Zone B MI WHQA Markets

- 9.47 Having regard to the analysis set out in paragraphs 9.9 to 9.46 above (and in the 2018 Further Consultation), ComReg's position is that, absent regulation, Eircom, as the SMP Undertaking in the Zone B MI WHQA Markets has the ability and incentive to engage in actions which could negatively impact on competition and customers in related retail and/or wholesale markets, as well as having the potential to reinforce its market power in the Zone B MI WHQA Markets over time.
- 9.48 ComReg has presented examples of such potential behaviour and, therefore, considers that it is justified and proportionate to impose obligations on Eircom in the Zone B MI WHQA Markets relating to access, transparency, non-discrimination, price control and cost accounting and accounting separation. The details of these obligations are discussed in Section 10 below.
- 9.49 As noted above, ComReg summarises and assesses Respondents' views on the 2018 Further Consultation proposals in Section A.1.9 of Annex 1 of this Decision.

10 Imposition of Remedies in the Zone B Modern Interface ('MI') Wholesale High Quality Access ('WHQA') Markets

10.1 Overview

- 10.1 In Section 6 of this Decision, ComReg set out its position that Eircom has SMP in the Zone B MI WHQA Markets. In Section 9 of this Decision, ComReg identified a range of competition problems and competition and consumer impacts that, absent regulation, could arise in these Zone B MI WHQA Markets (and related markets) as a result.
- 10.2 ComReg's preliminary view, in the 2018 Further Consultation, was that the imposition of a full suite of obligations including access, non-discrimination, transparency, price control and accounting separation is warranted to address the competition concerns identified in Section 8 of the 2018 Further Consultation.
- 10.3 In this Decision, ComReg maintains its position that the imposition of a full suite of obligations including access, non-discrimination, transparency, price control and accounting separation is warranted to address the competition concerns identified in Section 9 of this Decision.
- 10.4 Of the 7 Submissions received, all Respondents (namely ALTO, BT, Eircom, enet, Verizon, Vodafone and Zayo) commented regarding ComReg's approach to implementing remedies and provided comments on the Draft Decision Instrument set out in the 2018 Further Consultation. An overview of these Submissions, along with ComReg's assessment of them, is provided in Annex 1. Section A.1.10, paragraphs A1.505 to A1.1083.
- 10.5 This Section is set out as follows:
- (a) Approach to Specifying and Implementing Remedies (discussed in Section 10.2 below);
 - (b) Legal Framework for Imposing Remedies (discussed in Section 10.3 below);
 - (c) Existing Remedies (discussed in Section 10.4 below);
 - (d) Assessment of Regulatory Approaches to Imposing Remedies in the Zone B MI WHQA Markets (discussed in Section 10.5 below);
 - (e) Access Remedies (discussed in Section 10.6 below);
 - (f) Non-Discrimination Remedies (discussed in Section 10.7 below);

- (g) Transparency Remedies (discussed in Section 10.8 below);
- (h) Price Control and Cost Accounting Remedies (discussed in Section 10.9 below);
- (i) Accounting Separation Remedies (discussed in Section 10.10 below); and
- (j) Statement of Compliance ('SoC') Remedies to be imposed (discussed in Section 10.11 below).

10.2 Approach to Specifying and Implementing Remedies

- 10.6 In Section 6 of this Decision, ComReg set out its position that Eircom has SMP in the Zone B MI WHQA Markets. ComReg identified a range of competition problems and competition/consumer impacts that, in the absence of regulation, could arise in the Zone B MI WHQA Markets and related markets. These competition problems relate to, amongst other things, Eircom having the ability and the incentive to foreclose competition and/or exploit wholesale (and retail) customers, ultimately to the detriment of competition and consumers.
- 10.7 In this Section, ComReg consider the imposition of regulatory remedies (or obligations) to address these competition problems. To this end ComReg sets out the legal framework for imposing remedies.

10.3 Legal Framework for Imposing Remedies

- 10.8 In accordance with Regulation 8(1) of the Access Regulations⁷⁶⁵, where an operator is designated as having SMP in a relevant market, ComReg is required to impose on such an operator the obligations set out in Regulations 9 to 13, of the Access Regulations, as ComReg considers appropriate. In this regard, the obligations that may be imposed by ComReg on SMP Undertakings are those relating to:
- (a) Access;

⁷⁶⁵ Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services, 2018/C 159/01 (the "[SMP Guidelines](#)"). The SMP Guidelines state at paragraph 12 that:

"In practice, it cannot be excluded that parallel procedures under *ex ante* regulation and EU competition law may apply with respect to different types of competition problem(s) identified on the underlying retail market(s). In this respect, *ex ante* obligations imposed by NRAs on Undertakings designated as having significant market power aim to remedy market failures identified and fulfil the specific objectives set out in the Framework".

- (b) Non-Discrimination;
- (c) Transparency;
- (d) Price Control and Cost Accounting; and
- (e) Accounting Separation.

10.9 In addition, Regulation 8(6) of the Access Regulations provides that any of the above obligations imposed must:

- (a) be based on the nature of the problem identified;
- (b) be proportionate and justified in the light of the objectives laid down in Section 12 of the Communications Regulation Acts 2002 (as amended) and Regulation 16 of the Framework Regulations⁷⁶⁶; and
- (c) only be imposed following public consultation and notification of the draft measures to the European Commission, BEREC and other NRAs in accordance with Regulation 12 of the Framework Regulations.

10.10 Regulations 12(1) and 12(4) of the Access Regulations also provide statutory criteria that ComReg must take into account before imposing access obligations on an SMP Undertaking. These criteria include, *inter alia*, examining the technical and economic viability of using or installing competing facilities; the feasibility of providing access; the initial outlay of investment by the Undertaking; and the need to safeguard competition in the long term.

10.11 Regulation 13(2) and Regulation 13(3) of the Access Regulations provide that ComReg is also required, when imposing price control obligations, to:

- (a) take into account the investment made by the SMP operator which ComReg considers relevant and allows such an operator a reasonable rate of return on capital employed, taking into account any risks involved specific to a particular new network investment project⁷⁶⁷; and

⁷⁶⁶ Pursuant to Section 12 of the Communications Regulation Acts 2002 (as amended), ComReg's relevant objectives in relation to the provision of electronic communications networks and services are: (i) to promote competition, (ii) to contribute to the development of the internal market, and (iii) to promote the interests of users within the Community. Regulation 16 of the Framework Regulations further specifies ComReg's obligations.

⁷⁶⁷ Pursuant to Regulation 13(2) of the Access Regulations.

- (b) ensure that any cost recovery mechanism or pricing methodology that ComReg imposes serves to promote efficiency and sustainable competition and maximise consumer benefits⁷⁶⁸.

10.12 These considerations are taken into account, as appropriate, when assessing whether and what form of remedy to impose, and are also discussed in further detail in the context of the Regulatory Impact Assessment ('**RIA**') in Section 12 of this Decision. ComReg also took the following into account in considering the imposition of remedies on the SMP operator:

- (a) the BEREC common position⁷⁶⁹ on the approach to appropriate remedies in the electronic communications networks and services regulatory framework and its common position on the best practice in remedies for the wholesale leased lines markets;
- (b) any relevant comments letters issued by the European Commission pursuant to Articles 7 and 7a of the Framework Directive in its review of regulatory measures notified by Member States under the EU consultation mechanism for electronic communications service; and
- (c) the European Commission's 2005 Accounting Separation and Cost Accounting Recommendation⁷⁷⁰.

⁷⁶⁸ Pursuant to Regulation 13(3) of the Access Regulations.

⁷⁶⁹ BEREC Common Position on best practice in remedies imposed as a consequence of a position of significant market power in the relevant markets for wholesale leased lines, Document BOR(12) 126 published 26 November 2012, available at:

http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/common_approaches_positions/1096-revised-berec-common-position-on-best-practices-in-remedies-as-a-consequence-of-a-smp-position-in-the-relevant-markets-for-wholesale-leased-lines.

⁷⁷⁰ European Commission Recommendation of 19 September 2005 on accounting separation and cost accounting systems under the regulatory framework for electronic communications (2005/698/EC) the "**2005 Accounting Separation and Cost Accounting Recommendation**").

10.4 Existing Remedies

- 10.13 Before considering which remedies would best meet ComReg's statutory/regulatory objectives in the Zone B MI WHQA Markets, ComReg highlight the existing remedies that are in place with respect to Eircom's provision of LLs arising from the obligations imposed in the 2008 Decision⁷⁷¹ and subsequently in other relevant decisions⁷⁷².

Existing Access Remedies

- 10.14 Eircom is currently subject to a range of Access obligations having been designated with SMP in the wholesale terminating segment leased line market as described in Section 8 of the 2008 Decision. These remedies were designed to address various competition problems that were identified at that time. The obligations imposed under the 2008 Decision and subsequent decisions require Eircom to, amongst other things, provide:

⁷⁷¹ See "[Market Analysis – Leased Lines Market Review, ComReg Document 08/103, Decision D06/08](#)", dated 22 December 2008 ('**2008 Decision**').

⁷⁷² Subsequent to the 2008 Decision, ComReg also made a number of other decisions related to the remedies/obligations imposed in the 2008 Leased Lines Wholesale Market including:

2009 Ethernet Determination which explicitly noted that a request for uncontended wholesale Ethernet access falls within the market for wholesale terminating segments of leased lines and is subject to the obligations imposed on Eircom by ComReg Decision Notice D07/05. These obligations include but are not limited to obligations of access and non-discrimination. Refer to "[Determination in the dispute between BT Ireland and Eircom Limited in relation to alleged failure by Eircom to provide Leased Line termination segments based on uncontended Ethernet access, ComReg Document 09/58](#)", dated 14 July 2009

2011 Access and Transparency Decision which amended Transparency and Access obligations. Refer to "[Amendments to the transparency obligation and the access obligation in the market for wholesale terminating segments of leased lines, ComReg Document 11/22, Decision D02/11](#)", dated 22 March 2011. (**2011 Access and Transparency Decision**) ; and

2012 Pricing Decision which further specified the price control obligations and in particular, methodologies used to derive regulated prices for Eircom's WLL, PPC and wholesale Ethernet services. Refer to "[A final decision further specifying the price control obligation in the market for wholesale terminating segments of leased lines, ComReg Document 12/03, Decision D02/12](#)", dated 2 February 2012. (**2012 Pricing Decision**).

It should also be noted that the WHQA market was broadly identified in the 2007 Recommendation as the market for wholesale terminating segments of leased lines ('**2007 Wholesale Leased Lines Recommended Market**'). As noted in paragraph 1.16, the 2007 Wholesale Leased Lines Recommended Market has been identified by ComReg as being susceptible to *ex ante* regulation and was thus regulated by ComReg pursuant to the 2008 Decision.

- (a) Legacy Ethernet Services such as Wholesale Ethernet Access ('**WEA**'), Wholesale Dublin Ethernet Access ('**WDEA**'), and Wholesale Regional Ethernet Access ('**WREA**');
- (b) NGN Ethernet Services including Wholesale Symmetrical Ethernet Access ('**WSEA**'), Wholesale Ethernet Service ('**WES**') and Wholesale Ethernet Interconnect Service ('**WEIL**');
- (c) WDM⁷⁷³ Services such as the Wholesale Uncontended Product ('**WUP**')⁷⁷⁴;
- (d) Local Loop Unbundling Backhaul ('**LLU Backhaul**')⁷⁷⁵, implemented using WHQA services outlined in paragraph 10.14 (a), (b) and (c) above;
- (e) Wholesale Circuit Emulation Service ('**WCS**'); and
- (f) to meet all reasonable requests for Access to network elements or associated facilities in the market.

10.15 The 2008 Decision and subsequent decisions also imposed obligations upon Eircom:

- (a) to give third parties Access to products, services, network elements or facilities in the market including Access to any additional wholesale inputs which are necessary for the provision of end-to-end LLs to End Users;
- (b) to negotiate in good faith with Undertakings requesting access;
- (c) not to withdraw Access to facilities already granted without ComReg's prior approval;
- (d) to grant open Access to technical interfaces, protocols or other key technologies that are indispensable for the interoperability of services or virtual network services;

⁷⁷³ Wavelength Division Multiplexing ('**WDM**') is a technology which multiplexes a number of optical carrier signals onto a single optical fibre by using different wavelengths.

⁷⁷⁴ As described in the Open eir documentation which is available at www.openeir.ie.

⁷⁷⁵ As described in the Open eir documentation which is available at:
www.openeir.ie/Products/Data/Local_Loop_Backhaul/.

- (e) to provide Access to OSS⁷⁷⁶ and similar software systems necessary to ensure fair competition in the provision of services;
- (f) to interconnect with networks or network facilities;
- (g) to comply with a set of KPIs which were further refined in the 2011 KPI Decision⁷⁷⁷; and
- (h) to invoice Other Authorised Operators ('**OAOs**') on a monthly basis, one month in advance of provision of the service with the credit terms remaining at thirty (30) calendar days, as specified in the 2011 Access and Transparency Decision⁷⁷⁸.

10.16 ComReg also imposed the following conditions with respect to the Access obligations:

- (a) to conclude legally binding and fit-for-purpose Service Level Agreements ('**SLAs**')⁷⁷⁹ with Other Authorised Operators ('**OAOs**');
- (b) to negotiate in good faith with OAOs in relation to the conclusion of legally binding SLAs;
- (c) to ensure that SLAs include provisions for service credits⁷⁸⁰ arising from a breach of the SLA;
- (d) to update and publish the industry SLA as required; and
- (e) to provide to ComReg and publish on a monthly basis, performance statistics as specified by ComReg.

⁷⁷⁶ OSS means Operational Support System, for example the Unified Gateway.

⁷⁷⁷ See "Introduction of Key Performance Indicators for Regulated Markets", Response to Consultation and Decision, ComReg Document No 11/45, Decision D05/11, June 2011 (the '**2011 KPI Decision**').

⁷⁷⁸ ComReg Document 11/22, Decision D02/11, Amendments to the transparency obligation and the access obligation in the market for wholesale terminating segments of leased lines, ComReg Document No.11/22 published 22 March 2011 ('**2011 Access and Transparency Decision**').

⁷⁷⁹ An SLA is essentially a legally binding contract in relation to the service levels that Eircom would commit to when supplying Wholesale MI LLs to Access Seekers, as more particularly set out in Eircom's LLRO, as may be amended from time-to-time.

⁷⁸⁰ A service credit is a financial credit which is provided by Eircom to an Access Seeker where Eircom has failed to meet the service levels which Eircom commits to from time-to-time in its SLA.

- 10.17 The list of Urban Centres (originally 15 Urban Centres were listed in Annex A of the 2008 Decision), which related to the definition of the market for the trunk segment of wholesale LLs, was amended and increased to 16 and later to 20 Urban Centres, under the 2010 Urban Centres Decision and the 2013 Urban Centres Decision respectively.

Existing Non-Discrimination Remedies

- 10.18 Eircom is also subject to non-discrimination obligations under the 2008 Decision. These include requirements on Eircom to:
- (a) apply equivalent conditions in equivalent circumstances to other Undertakings providing equivalent services;
 - (b) provide services and information to OAOs under the same conditions, according to the same timescales, on the same basis and quality, as Eircom provides for its own services or those of its subsidiaries or partners; and
 - (c) provide to OAOs information which is required to support existing and future products, services and associated facilities in an accurate and timely manner.

Existing Transparency Remedies

- 10.19 The 2008 Decision also subjected Eircom to a range of transparency obligations whereby it is required to make certain information available in relation to Interconnection and Access. These include specific obligations on Eircom to:
- (a) publish on its wholesale website, and keep updated, a Reference Offer ('**RO**'), which shall include a description of the relevant offerings broken down into component parts and a description of the associated terms and conditions, including prices;
 - (b) ensure that its RO is sufficiently unbundled so that Undertakings are not required to pay for facilities which are not necessary for the service requested;
 - (c) publish at least three (3) months in advance any proposed changes to the RO and any proposed changes to wholesale prices and the application of such prices. Furthermore, Eircom shall notify ComReg in writing with the information to be published at least five (5) working days in advance of any such publication taking place;
 - (d) publish information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices;
 - (e) publish all SLAs concluded and/or amended and publish a standard industry SLA on its wholesale website;
 - (f) publish KPIs to demonstrate that a product is continually fit-for-purpose; and

(g) provide information which is required to support existing and future products in an accurate and timely manner to OAOs.

10.20 The 2011 KPI Decision required Eircom to publish on a publicly available website a set of KPIs across a range of products including the Wholesale and Retail Leased Lines Markets.

10.21 The 2011 Access and Transparency Decision, further amended the transparency obligations that existed under the 2008 Decision, removing the obligation to publish pricing information for Wholesale Leased Lines ('WLLs') - Eircom WLL product of bandwidths greater than 10Mb/s.

Existing Price Control and Cost Accounting Remedies

Current Pricing Methodology

10.22 ComReg imposed cost orientation on partial private circuit ('**PPC**') products, and related ancillary services in the 2008 Decision and more recently in the 2012 Pricing Decision,⁷⁸¹ which extended the cost orientation obligation to MI NGN Ethernet terminating segments encompassing WSEA Physical and Logical Circuit product components, including ancillary services required to support the deployment of MI NGN Ethernet terminating segments. The cost orientation obligation was based on the fact that Eircom had SMP in the wholesale market for terminating segments of leased lines and given ComReg's position that Eircom had the ability and incentive to price excessively. The cost orientation obligation resulted in the determination of wholesale prices for terminating segments using a Bottom Up ('**BU**') Long-Run Average Incremental Cost ('**LRAIC**') plus cost model.⁷⁸² The BU-LRAIC plus approach was used as the general basis for determining charges in the market for wholesale terminating segments of leased lines. This approach was reflective of the prices that would prevail in a competitive market and therefore should send the right "build/buy" signals to new entrants. This methodology included the average efficiently incurred variable and fixed costs that were directly attributable to the activity concerned, plus an appropriate apportionment of joint and common costs, which are faced by any operator when deciding to enter a market or to expand. For the ancillary products/services, Eircom are obliged to comply with the cost orientation obligation, from the 2008 Decision and ensure that wholesale prices are cost oriented and only recover efficiently incurred costs and a regulated rate of return.

⁷⁸¹ [ComReg Document No 12/03](#), Decision D02/12 'Response to Consultation Document No. 10/70 and 11/32 A final decision further specifying the price control obligation in the market for wholesale terminating segments of leased lines ('**2012 Pricing Decision**').

⁷⁸² This is the methodology used to estimate the "LRAIC plus" of an efficient operator which is derived from an economic and / or engineering model of an efficient network. The LRAIC plus costs are the average efficiently incurred directly attributable variable and fixed costs, including an apportionment of joint and common costs.

- 10.23 The pricing approach for NGN Ethernet services (broadly comparative to MI leased lines in this Decision) was based on a national de-averaged pricing approach. This reflected variations in costs across regional types where high density demands resulted in lower costs due to economies of scale and marginally higher costs in regions where demand levels were medium to low in scale and so reflected diseconomies in the provision of NGN Ethernet services.
- 10.24 ComReg imposed cost oriented prices for three principle wholesale components which underpin the delivery of NGN Ethernet terminating segments:
- (a) WSEA Physical, predominantly the fibre cable connectivity from the End User location up to and including the service port at the Eircom Exchange,⁷⁸³ based on a BU-LRAIC plus cost model, detailed in the 2012 Pricing Decision;
 - (b) WSEA Logical path or core network traversal costs linked to bandwidth, quality of service and locations connected. Again, costs were based on BU-LRAIC plus cost model known as the Core Network NGN cost model (also detailed in ComReg Document 11/32⁷⁸⁴ and the 2012 Pricing Decision);
 - (c) WEILs, which generally take four forms, i.e. Customer Sited Handover ('**CSH**'), In Span Handover ('**ISH**'), In Building Handover ('**IBH**') and Edge Node Handover ('**ENH**')⁷⁸⁵ are also based on cost orientated prices pursuant to the 2012 Pricing Decision.
- 10.25 CSH provides a dedicated fibre access between the Service Providers' designated Aggregation Node and the Access Seeker's network. This service is terminated at an access point located on the Access Seeker's premises.
- 10.26 ISH involves providing a dedicated fibre access between the Access Seeker's designated Aggregation Node and the Access Seeker's network located at a cable chamber close to the Service Providers' designated Aggregation Node. The ISH option utilises less of the fibre access network than CSH.

⁷⁸³ "Exchange" means an Eircom network premises or equivalent facility used to house network and associated equipment and includes an Aggregation Node or WDM Node. The Exchange sometimes, but not always, houses the Metropolitan Point of Presence (MPoP);

⁷⁸⁴ ComReg document 11/32 'Response to Consultation Document No. 10/70 and a 2018 Further Consultation and draft decision on the price control obligation in the market for wholesale terminating segments of leased lines'.

⁷⁸⁵ Edge Node Handover or ENH means the connection from the Eircom network through a dedicated Aggregation Node interface to the Access Seeker's equipment.

- 10.27 IBH involves providing a dedicated fibre, generally on a cable tray, from the Service Providers' designated Aggregation Node or Eircom Exchange premises to the Access Seeker's co-located footprint in the Eircom Aggregation Node location.
- 10.28 Finally, ENH is delivered where the point of handover is between the Service Providers' designated edge node and the Access Seeker's network. The current ENH product is mainly delivered based on circuit speeds of 10Gb/s and delivered as a CSH. Due to the design of Eircom's NGN core network, the ENH product effectively involves building a dedicated Aggregation Node on the Access Seeker's premises. Building a dedicated Aggregation Node on an Access Seeker's premises involves significant associated equipment costs.
- 10.29 In addition to the above, in its 2012 Pricing Decision ComReg imposed a Margin Squeeze Test ('**MST**'). This was designed to protect and encourage efficient investment in leased lines infrastructure and ensure sustainable competition. ComReg believed that a price floor was also required for wholesale leased lines (which are end-to-end leased lines connecting two End User locations).
- 10.30 The MST was designed to safeguard and encourage appropriate investments by Access Seekers. ComReg recognised that Eircom's relative pricing of its end-to-end WLL products could have a significant impact on Access Seekers who combine elements of their own network infrastructure with terminating segments purchased from Eircom. As Eircom could change prices from time-to-time, it could effectively undermine the regulatory process through applying an insufficient economic space vis-à-vis the price of its wholesale end-to-end leased line product, relative to the prices for leased line terminating segments. The wholesale end-to-end leased line price, in conjunction with retail costs could then form the basis for a discounted retail product offering. If this scenario was not addressed through such a remedy, an Access Seeker who invested in its own network to bridge the connectivity between two terminating segments, in order to replicate a retail end-to-end offering, would be unable to match the end-to-end leased line product price and recover its combined wholesale and retail costs. This in turn, would discourage investment by an OAO in its own infrastructure. The MST was based on the Similarly Efficient Operator ('**SEO**') approach, which is largely based on Eircom's cost information but adjusted to reflect the fact that Access Seekers did not currently enjoy the same economies of scale as Eircom. Eircom, mainly, as a result of its relative scale carries much greater volumes of traffic than its main competitors and therefore has a much lower unit cost nationally. This approach takes account of the insufficient competitive development of the market for wholesale terminating segments of leased lines and in particular the ability of infrastructure-based Access Seekers to compete with Eircom in the provision of end-to-end services. The rationale for and design of the MST was to encourage efficient infrastructure investment and encourage Access Seekers to climb the ladder of investment, in line with ComReg's objectives.

- 10.31 ComReg also imposed an annual review of Eircom's retail sales of MI LL products in its 2012 Pricing Decision, to assess if the revenues realised were sufficient to ensure that a margin squeeze was not occurring. The initial step was to take a sample of successful retail tenders realised by Eircom in the preceding year that reflected a fair weighting of the retail services sold. Based on the technical characteristics of the service required (bandwidth, quality of service, etc.) and locations from which connectivity had to be addressed. The test involved determining the prices for the wholesale terminating segments required at each end of a leased line product path between two End User points, required to emulate the retail service, in conjunction with a contribution to interconnect facilities to transition each terminating segment path onto a competing Access Seeker network, with the final addition of the costs for the use of an SEO Access Seeker network to bridge the two interconnection points to attain full end-to-end connectivity. This then provided the wholesale cost base faced by an Access Seeker, which then would require a retail margin to address its own retail costs including marketing and sales, etc. This review assured ComReg that the retail prices tendered by Eircom were sufficient to address such costs and that no margin squeeze is found to have occurred during the control period outlined in the 2012 Pricing Decision.

Existing Accounting Separation Remedies

- 10.32 The existing Accounting separation remedies were detailed in ComReg's 2008 Decision, wherein ComReg specified that Eircom was subject to relevant accounting separation obligations. These obligations have since been revised and updated by the 2010 Accounting Separation Decision.⁷⁸⁶ In addition, the obligation to retain Accounting Separation remedies for terminating segments in the leased lines market, was re-iterated in the 2012 Pricing Decision.

⁷⁸⁶ See "[Accounting Separation and the Cost Accounting Review of Eircom Limited, ComReg Document 10/67, Decision D08/10](#)", dated August 2010 ('**2010 Accounting Separation Decision**').

- 10.33 Eircom publishes its Accounting Separation results in order to comply with its current requirement to publish the financial results for the Wholesale Leased Lines Market, via an Income Statement and Statement of Mean Capital Employed for each financial year. Additionally, ComReg has directed Eircom to provide on an annual basis Additional Financial Statements detailing the financial results in a form which segments the Income Statement and the Statement of Mean Capital Employed between Partial Private Circuits ('PPCs'), WLLs and Next Generation Network ('NGN') Ethernet products in the wholesale terminating segment of leased lines. ComReg, also in the context of the 2008 Decision, required Eircom to further separate financial results for PPC and WLL products based on the bandwidth threshold of 155Mb/s, being a key differentiator in the segmentation of Traditional Interface ('TI') services provided into the Trunk and Terminating segments of the leased lines market. The resulting financial reports allows ComReg to monitor the returns realised in the MI WHQA Markets and in the remaining regulated elements of the wholesale TI LL markets.

10.5 Assessment of Regulatory Approaches to Imposing Remedies in the Zone B MI WHQA Markets

- 10.34 In Section 6 of this Decision, ComReg set out its position that Eircom has SMP in the Zone B MI WHQA Markets. Furthermore, in Section 8 of the 2018 Further Consultation, ComReg identified a range of potential competition problems that may arise in this market, absent regulation, arising from Eircom's ability and incentives as a vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets that competes with Access Seekers in both the retail and wholesale LL markets (and related markets). In this Section, ComReg assess the regulatory options for addressing the competition problems that have been identified, before then proposing specific regulatory obligations.

Option of 'No Regulation' in Zone B MI WHQA Markets

- 10.35 ComReg considered whether the option of de-regulation or regulatory forbearance is appropriate in the Zone B MI WHQA Markets.
- 10.36 As noted in paragraph 10.8 above, Regulation 8(1) of the Access Regulations and Regulation 27(4) of the Framework Regulations require ComReg to impose at least some level of regulation on Undertakings designated as having SMP. In Section 6 of this Decision, ComReg set out its position that the Zone B MI WHQA Markets are not effectively competitive (and is not likely to become effectively competitive within the timeframe covered by this review). In Section 9 of this Decision, ComReg identified a range of competition problems that could occur in the Zone B MI WHQA Markets and related markets, absent regulation.

- 10.37 In view of this assessment, ComReg's position is that the Zone B MI WHQA Markets (and downstream markets) would be unlikely to function effectively absent regulation. This would not be in the interest of promoting sustainable competition. ComReg has set out its view that Eircom has the ability and incentive to exclude or foreclose Access Seekers competing in the provision of wholesale and/or retail MI LLs (and related services) by refusing to supply them with its MI WHQA products, services and facilities in the Zone B MI WHQA Markets (including constructive refusal), or by setting prices at an excessive level⁷⁸⁷.
- 10.38 It is ComReg's position that the option of regulatory forbearance in the Zone B MI WHQA Markets is not, therefore, appropriate or justified. The relevant issue to be considered, therefore, relates to what form of regulation is appropriate. In particular, which of the remedies identified in paragraph 10.8 above are appropriate having regard to the particular circumstances of the Zone B MI WHQA Markets, the associated competition problems and taking account of the relevant statutory requirements to which ComReg must have regard to when imposing remedies.

Option to impose remedies in the Zone B MI WHQA Markets

- 10.39 As noted in paragraphs 10.13 to 10.33 above, Eircom has to date been subject to a range of SMP based regulatory obligations as imposed primarily in 2008 Decision and subsequent decisions. These obligations require Eircom to provide Access Seekers with wholesale Access to MI LLs (and related services and facilities) and to do so on non-discriminatory and transparent terms and conditions, including at regulated prices.
- 10.40 ComReg set out its position (paragraphs 10.42 to 10.482 below) on the detail of the imposition of regulatory obligations on Eircom in the Zone B MI WHQA Markets.
- 10.41 Below ComReg describe the remedies being imposed upon Eircom in the Zone B MI WHQA Markets, as follows:
- (a) Access obligations (discussed in paragraphs 10.42 to 10.235 below);
 - (b) Non-discrimination obligations (discussed in paragraphs 10.236 to 10.257 below);
 - (c) Transparency obligations (discussed in paragraphs 10.258 to 10.369 below);
 - (d) Price Control Remedies (discussed in paragraphs 10.370 to 10.446 below);
 - (e) Accounting Separation and Cost Accounting Remedies (discussed in paragraphs 10.449 to 10.448 below); and

⁷⁸⁷ See Section 9 above.

- (f) Requirements regarding a Statement of Compliance with the above obligations (discussed in paragraphs 10.459 to 10.482 below).

10.6 Access Remedies

Overview

- 10.42 As identified in Sections 4 and 5, in providing retail and/or wholesale LLs (and related services) in the Zone B MI WHQA Markets, a number of Service Providers are largely dependent upon the use of Eircom's wholesale services due to its largely non-replicable ubiquitous access network over which the MI WHQA circuits are delivered. ComReg has already set out its view that Eircom has the ability and incentive to refuse to supply wholesale MI WHQA products, services and facilities in the Zone B MI WHQA Markets to Access Seekers, either actually or constructively, or to provide these services on discriminatory or unreasonable terms and conditions (including in relation to price) and that this would likely hinder competition in the market and related markets. This would ultimately be detrimental to the interests of End Users, and would be contrary to the objectives set out in Section 12 of the Communications Regulation Acts 2002 (as amended) and Regulation 16 of the Framework Regulations.
- 10.43 ComReg's position is that there are likely to continue to be differences in bargaining power⁷⁸⁸ between Eircom and Access Seekers within the Zone B MI WHQA Markets, particularly given the absence of sufficiently credible alternative sources of supply within the timeframe of this review period.
- 10.44 Absent the imposition of access remedies, this could lead to actual or constructive refusal by Eircom to supply MI WHQA products, services and facilities. In these circumstances, ComReg would be left to address any such refusal by Eircom to supply wholesale MI WHQA⁷⁸⁹ - either through its general dispute resolution or compliance functions - all of which would occur after the fact, take time⁷⁹⁰ to resolve, be specific to the bilateral circumstances between the relevant parties and not, thereby, contributing to regulatory certainty amongst market players. As a consequence, this could be damaging to downstream competition and ultimately consumers.

⁷⁸⁸ ComReg considered the impact of CBP in Section 7 of this Decision and considered it to be ineffective.

⁷⁸⁹ This includes MI WHQA products, services and facilities.

⁷⁹⁰ Including time for ComReg to consider the dispute, along with possible public consultation and notification to the European Commission.

- 10.45 Such case-by-case interventions by ComReg would also be inefficient and ineffective in resolving the broader competition problem of denial/delayed access by an SMP operator. In this regard, it is worth noting that the European Commission has made several comments⁷⁹¹, under Article 7/7a of the Framework Directive, on the imposition by NRAs of SMP-type obligations pursuant to the exercise of dispute resolution functions. Such European Commission decisions clearly highlight the need for effective remedies to be imposed through a formal market analysis process. This includes the imposition of access (and other) obligations on any operators found to have SMP.
- 10.46 ComReg could seek to use its *ex post* competition law powers. However, such powers could ultimately result in a finding by an Irish court that an Undertaking has abused its dominant position, but not necessarily require Access to be provided as an outcome to any such finding. Similar to the reasons above, a competition law approach would also take significant time to resolve, be specific to the relevant circumstances of the case and not contribute to regulatory certainty amongst market players.
- 10.47 Overall, therefore, ComReg considers that dispute resolution (which can be of relevance in resolving access and other issues in certain circumstances) and *ex post* competition law approaches would not be effective in resolving issues concerning denial of access in the Zone B MI WHQA Markets.
- 10.48 Regulation 12(1) of the Access Regulations provides that ComReg may, in accordance with Regulation 8 of the Access Regulations, impose on an operator obligations to meet reasonable requests for Access to, and use of, specific network elements and associated facilities where ComReg considers that the denial of such access, or the imposition by operators of unreasonable terms and conditions having a similar effect, would:
- (a) hinder the emergence of a sustainable competitive retail market;
 - (b) not be in the interests of End Users; or
 - (c) otherwise hinder the objectives set out in Section 12 of the Communications Regulation Acts 2002 (as amended) and Regulation 16 of the Framework Regulations.

⁷⁹¹ See European Commission serious doubts/comments on Polish cases [PL/2010/1127](#), [PL/2011/1273](#), [PL/2011/1255-1258](#) and Latvian case [LV/2012/1296](#).

- 10.49 Obligations must also be proportionate and justified in the light of the objectives laid down in Section 12 of the Communication Regulation Act 2002 and Regulation 16 of the Framework Regulations.
- 10.50 Regulation 12(2)(a) to 12(2)(j) and Regulation 12(3) of the Access Regulations provide that ComReg can impose, where appropriate, additional access obligations and may attach conditions covering fairness, reasonableness and timeliness in relation to those access obligations.
- 10.51 As noted above, pursuant to Regulation 12(4) of the Access Regulations, when considering whether to impose obligations referred to in paragraphs (1) and (2) of Regulation 12 and, in particular, when assessing whether such obligations would be proportionate to the objectives set out in Section 12 of the Communications Regulation Acts 2002 (as amended), ComReg has to take the following factors into account:
- (a) the technical and economic viability of using or installing competing facilities, in light of the rate of market development, taking into account the nature and type of interconnection and access involved;
 - (b) the feasibility of providing the access proposed, in relation to the capacity available;
 - (c) the initial investment by the facility owner, bearing in mind the risks involved in making the investment;
 - (d) the need to safeguard competition in the long-term;
 - (e) where appropriate, any relevant intellectual property rights; and
 - (f) the provision of pan-European services.
- 10.52 The relevant provisions are taken into account below in ComReg's consideration of the access remedies that ComReg is imposing upon Eircom in order to address the competition problems identified in Section 9. An overview of Eircom's existing access obligations has also been provided in paragraphs 10.14 to 10.17 above.

Consideration of statutory criteria on access obligations

- 10.53 In paragraphs 10.9, 10.12 and 10.51 above, ComReg set out a range of statutory criteria that ComReg must consider when imposing access obligations. These criteria are considered below having regard to the access obligations set out in paragraphs 10.66 to 10.235 below.

- (a) **Technical and economic viability of using or installing competing facilities:** In Sections 6 and 9, ComReg defined the Zone B MI WHQA Markets and has set out its view that existing competition, potential competition and CBP are unlikely to result in effective competition within such a market. In light of this, using or installing competing facilities to provide MI WHQA products, services and facilities in Zone B MI WHQA Markets is not likely to be economically feasible within the period of this review. This is evidenced by the lack of meaningful independent entry into the Zone B MI WHQA Markets since the 2008 Decision and Eircom's high and persistent market share. On a forward-looking basis, ComReg does not consider that barriers to entry may sufficiently be eroded over time. ComReg does not consider it likely that any market entry will materially alter the competitive position within the Zone B MI WHQA Markets within the period of this review. Eircom has to date been providing MI WHQA products, services and facilities in the Zone B MI WHQA Markets and it is, therefore, technically viable to do so for the period of the review;
- (b) **Feasibility of providing access in relation to capacity available:** Access to MI WHQA products, services and facilities in the Zone B MI WHQA Markets are currently provided by Eircom, albeit on foot of existing regulatory obligations. On a forward-looking basis, ComReg is not aware that there would be any material capacity constraints that would give rise to Eircom facing difficulties in meeting the access obligations;
- (c) **The initial investment by the facility owner:** Having regard to Regulation 12(4)(c) and Regulation 13(2) of the Access Regulations, ComReg's approach to imposing access remedies is based on principles that, inter alia, allow a reasonable rate of return on adequate capital employed, taking into account the risks involved. When proposing price control remedies: ComReg is mindful of facilitating the development of effective and sustainable competition to the benefit of End Users without compromising efficient entry and investment decisions of Undertakings over time. ComReg is also mindful of the role of regulatory transparency and consistency in contributing to a more predictable environment conducive to long-run investment decisions being made;

- (d) **The need to safeguard competition:** In Section 9 and throughout this Section, ComReg has highlighted the impact on downstream competition and the impacts on End Users that could arise given Eircom's ability and incentives to potentially engage in exploitative or exclusionary behaviours in the Zone B MI WHQA Markets and related markets (absent regulation). These include, *inter alia*, actual or constructive denial of access, excessive pricing and other behaviours which could damage the development of sustainable competition in the Zone B MI WHQA Markets and related markets. ComReg considers that imposing access (and other obligations) in the Zone B MI WHQA Markets will ultimately promote retail competition to the benefit of consumers given that these obligations restrict Eircom's ability and incentives to engage in exploitative or exclusionary behaviours;
- (e) **Intellectual property rights:** ComReg's view is that intellectual property rights are not likely to be a significant concern in the context of the provision of Access to MI WHQA products, services and facilities in the Zone B MI WHQA Markets; and
- (f) **Pan European Services:** ComReg's view is that its proposed approach should facilitate the provision of pan-European services since the proposed approach is consistent with the policies of the European Commission and other NRAs. Consistent regulation of MI WHQA across the EU will help to support a seamless provision of pan-European services by allowing SPs in other Member States to provide electronic communications services in Ireland.

10.54 In view of the above, ComReg's position is that the obligations requiring Eircom to provide Access to products, services and associated facilities, in the Zone B MI WHQA Markets are proportionate and justified.

10.55 ComReg has also considered whether access obligations would be sufficient in themselves to resolve the identified competition problems. For the reasons set out in the discussion of the other remedies below, ComReg does not consider this to be the case. For example, the imposition of access obligations alone would not resolve issues such as excessive pricing, discrimination on price or quality grounds, or ensure transparency of terms and conditions of access.

Imposition of Access Remedies

Introduction

10.56 In paragraphs 9.42 to 9.204 of the 2018 Further Consultation, ComReg outlined its views on the imposition of access remedies upon Eircom in the Zone B MI WHQA Markets.

- 10.57 In Annex A.1.10, paragraphs A1.512 to A1.840 of this Decision, ComReg summarises the main views of Respondents on the Access obligations that were proposed in the 2018 Further Consultation, followed by ComReg's assessment of Respondents' views.
- 10.58 Of the seven Respondents, all expressed views on issues relating to the proposed access remedies set out in the 2018 Further Consultation (namely ALTO, BT, Eircom, enet, Verizon, Vodafone and Zayo).
- 10.59 Respondents views on the access remedies are grouped into the remedies/categories identified below:
- (a) Requirement to meet reasonable requests for Access (summarised in paragraphs A1.512 to A1.515, Annex A.1.10 below);
 - (b) Requirement to provide Access to Interconnection Services (including Interconnection Sharing Service) (summarised in paragraphs A1.518 to A1.534, Annex A.1.10 below);
 - (c) Requirement to provide Access to Co-Location, and Co-Location Related Services⁷⁹² (summarised in paragraphs A1.568 to A1.575, Annex A.1.10 below);
 - (d) Requirement to negotiate in good faith (summarised in paragraphs A1.615 to A1.617, Annex A.1.10 below);
 - (e) Requirement not to withdraw Access to facilities already granted (summarised in paragraphs A1.619 to A1.623, Annex A.1.10 below);
 - (f) Requirement to grant open Access to technical interfaces, protocols and other key technologies (summarised in paragraph A1.632, Annex A.1.10 below);
 - (g) Requirement to provide Access to Eircom's OSS (summarised in paragraphs A1.634 to A1.641, Annex A.1.10 below);
 - (h) Requirements governing fairness, reasonableness and timeliness of Access (summarised in paragraphs A1.651 to A1.676, Annex A.1.10 below);
 - (i) Requirement regarding Timeliness of Product Development (summarised in paragraphs A1.711 to A1.735, Annex A.1.10 below);
 - (j) Ethernet in the First Mile ('**EFM**') (summarised in paragraphs A1.788 to A1.790, Annex A.1.10 below);

⁷⁹² Co-Location Related Services are Co-Location Resource Sharing, Co-Location Rack Interconnection and Shared Services within or between Co-Location Racks.

- (k) Civil Engineering Infrastructure ('CEI') Access (summarised in paragraphs A1.794 to A1.805, Annex A.1.10 below);
- (l) Fit-for-purpose Duct and Pole products (summarised in paragraphs A1.809 to A1.819, Annex A.1.10 below);
- (m) Specific Market Analysis observations (summarised in paragraphs A1.824 to A1.827, Annex A.1.10 below); and
- (n) Practical application of Remedies in the Zone B MI WHQA Markets (summarised in paragraphs A1.830 to A1.834, Annex A.1.10 below).

10.60 Having regard to the analysis carried out in the 2018 Further Consultation and having assessed Respondents' views (see Annex A.1.10, paragraphs A1.512 to A1.840), ComReg has maintained its position as set out in the 2018 Further Consultation with the exception of the amendments specified in paragraphs 10.230 to 10.235 below. ComReg's position is to impose upon Eircom the access obligations set out in paragraphs 10.61 to 10.235 below.

Access Remedies to be imposed

10.61 Below, ComReg sets out the access remedies being imposed, including:

- (a) to meet reasonable requests for Access to MI WHQA products, services and facilities in the Zone B MI WHQA Markets⁷⁹³ (discussed in paragraphs 10.66 to 10.75 below);
- (b) to provide Access to Interconnection Services⁷⁹⁴ (including Interconnection Sharing Service) (discussed in paragraphs 10.76 to 10.94 below);
- (c) to provide Access to Co-Location, and Co-Location Related Services⁷⁹⁵ (discussed in paragraphs 10.95 to 10.132 below);
- (d) to negotiate in good faith⁷⁹⁶ (discussed in paragraphs 10.133 to 10.140 below);

⁷⁹³ Paragraphs 9.57 to 9.64 of the 2018 Further Consultation.

⁷⁹⁴ Paragraphs 9.65 to 9.80 of the 2018 Further Consultation.

⁷⁹⁵ Paragraphs 9.81 to 9.110 of the 2018 Further Consultation.

⁷⁹⁶ Paragraphs 9.111 to 9.118 of the 2018 Further Consultation.

- (e) not to withdraw Access to facilities already granted⁷⁹⁷ (discussed in paragraphs 10.141 to 10.152 below);
- (f) to grant open Access to technical interfaces, protocols and other key technologies⁷⁹⁸ (discussed in paragraphs 10.153 to 10.155 below);
- (g) to provide Access to Eircom's OSS⁷⁹⁹ (discussed in paragraphs 10.156 to 10.161 below); and
- (h) requirements governing fairness, reasonableness and timeliness of Access⁸⁰⁰ (discussed in paragraphs 10.162 to 10.235 below);

Related MI WHQA Elements⁸⁰¹

10.62 Eircom Exchanges (i.e. Trunk and Non-Trunk Nodes) are physically situated in either Zone A MI WHQA Markets or Zone B MI WHQA Markets. As outlined in paragraph 10.74 below, Interconnection in Zone A MI WHQA Markets and Zone B MI WHQA Markets areas is necessary for the provision of a regulated MI WHQA access product that terminates in the Zone B MI WHQA Markets. Eircom is obliged to provide Interconnection Services at all Trunk and Non-Trunk Node locations. This is because if Access Seekers cannot interconnect at the Trunk Node, it is not possible for them to effectively compete in the Zone B MI WHQA Markets or in the related retail Leased Lines markets.

⁷⁹⁷ Paragraphs 9.119 to 9.125 of the 2018 Further Consultation.

⁷⁹⁸ Paragraphs 9.126 to 9.128 of the 2018 Further Consultation.

⁷⁹⁹ Paragraphs 9.129 to 9.132 of the 2018 Further Consultation.

⁸⁰⁰ Paragraphs 9.133 to 9.202 of the 2018 Further Consultation.

⁸⁰¹ Paragraphs 4.257 – 4.259, Section 9.5.1 and Appendix: 9 of the 2018 Further Consultation.

- 10.63 Co-Location is an essential Associated Facility for Interconnection IBH Handover (i.e. the connection from the Eircom network to the Access Seeker's equipment within the Exchange, or equivalent facility). Therefore Co-Location in all Eircom Exchanges, including those in Zone A WPZs, is an Associated Facility for the provision of a regulated MI WHQA access product that terminates in the Zone B MI WHQA Markets. Absent regulation, ComReg's view is that Eircom, as a vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets, has the ability and incentive to restrict or deny access to Co-Location which in turn would deny Access Seekers of IBH-based Interconnection. Without Access to Co-Location, Access Seekers cannot purchase regulated IBH products and services and absent this it would limit competition to Eircom's downstream arm, in the Zone B MI WHQA Markets, ultimately being damaging to consumer interests given the potential for such reduced competition to impact pricing, quality and other parameters.
- 10.64 The Interconnection, Interconnection Sharing Service, Co-Location and Co-Location Related Services in Zone A required to support the provision of access to MI WHQA products, services and facilities terminating in the Zone B MI WHQA Markets will be referred to where appropriate as "**Related MI WHQA Elements**".
- 10.65 Table 14 summarises the main access obligations to be imposed in this Decision. As a result of this market review, existing obligations have been updated⁸⁰² as appropriate, and some new obligations are being introduced⁸⁰³.

⁸⁰² In the 2018 Further Consultation and/or based on the analysis in this Decision.

⁸⁰³ As outlined in the 2018 Further Consultation and/or based on the analysis in this Decision.

Table 14: Summary of main access obligations to be imposed⁸⁰⁴

Access Obligations	Obligation	
	Existing	New
To meet reasonable requests for Access to MI WHQA products, services and facilities	Yes	
To provide Access to Interconnection Services	Yes	
To provide Access to Interconnection Sharing		Yes
To provide Access to Co-location	Yes	
To provide Access to Co-location Resource Sharing, Co-location Rack Interconnection & Shared Services within or between Co-location Racks.		Yes
To negotiate in good faith	Yes	
not to withdraw Access to facilities already granted	Yes	
To grant open Access to technical interfaces, protocols and other key technologies	Yes	
To provide Access to Eircom's OSS	Yes	
Requirements governing fairness, reasonableness and timeliness of Access	Yes	
Product Development Timelines		Yes
SLA: Best and Final Offer (BAFO)		Yes

To Meet Reasonable Requests for Access to MI WHQA products, services and facilities in the Zone B MI WHQA Markets⁸⁰⁵

- 10.66 ComReg's position is that, pursuant to Regulation 12(1) of the Access Regulations that Eircom should be required to meet all reasonable requests from Undertakings for the provision of Access to MI WHQA products, services and facilities⁸⁰⁶ in the Zone B MI WHQA Markets.
- 10.67 ComReg considers it necessary to impose a range of access obligations upon Eircom that are ultimately intended to facilitate the development of sustainable competition in downstream markets and maintain competition in the Zone B MI WHQA Markets.
- 10.68 The majority of the access obligations that ComReg will impose here, and elsewhere in this Section, effectively results in a continuation of Eircom's offer of the existing wholesale MI WHQA products⁸⁰⁷. The obligations are in accordance with the product descriptions and terms and conditions of supply or use, as specified in the current version of the Eircom's LLRO, in accordance with the obligations discussed elsewhere in this Decision. However, ComReg has also specified refinements to some such existing obligations, as well as new obligations.

⁸⁰⁴ These obligations apply to the Zone B MI WHQA Markets (including Related MI WHQA Elements).

⁸⁰⁵ Including Related MI WHQA Elements.

⁸⁰⁶ Including Related MI WHQA Elements.

⁸⁰⁷ The obligation are imposed in the Zone B MI WHQA Markets (including Related MI WHQA Elements).

- 10.69 An overview of existing access obligations is set out in paragraphs 10.14 to 10.17 above.
- 10.70 As noted in Section 9, ComReg does not consider that existing or potential competition would effectively constrain Eircom's market power within the lifetime of this market review. In particular, ComReg has noted that competition has been and, for the period of this review, is likely to continue to be heavily dependent on availability of wholesale access to MI WHQA products, services and facilities⁸⁰⁸ in the Zone B MI WHQA Markets. In this respect, access to these elements is necessary to maintain competition and to minimise foreclosure concerns that could arise, absent such regulation.
- 10.71 In addition to the general obligation to meet reasonable requests for Access above, ComReg is imposing specific access obligations upon Eircom pursuant to Regulation 12(1) of the Access Regulations in the Zone B MI WHQA Markets in order to address the potential competition problems identified in Section 9.
- 10.72 ComReg is therefore, imposing the following access obligations upon Eircom in order to address potential competition problems and ultimately to promote the development of competition:
- (a) Obligations to provide Access to NGN Ethernet services which consist of:
- (i) NGN Ethernet Interconnection Services⁸⁰⁹ (discussed in paragraphs 10.76 to 10.86 below), in particular, Wholesale Ethernet Interconnection Links ('**WEILs**'), including In-Building Handover ('**IBH**')⁸¹⁰, In-Span Handover' ('**ISH**')⁸¹¹, Customer-Sited Handover ('**CSH**')⁸¹² and Edge Node Handover ('**ENH**') variants, which in turn may require Access to:

⁸⁰⁸ Including Related MI WHQA Elements.

⁸⁰⁹ Interconnection Services are categorised by four handoff types namely: ISH, CSH, IBH and ENH.

⁸¹⁰ In-building handover or IBH means the connection from the Eircom network to the Access Seeker's equipment within the Exchange, or equivalent facility.

⁸¹¹ In-Span Handover or ISH means the connection between the Exchange and the Access Seeker's nominated Point of Handover.

⁸¹² Customer Sited Handover or CSH means the connection from the Eircom network to the Access Seeker's equipment in the Access Seeker's premises, which includes the installation of an Eircom NTU at the Access Seeker's premises.

- a) Co-Location, Co-Location Resource Sharing, Co-Location Rack Interconnection and Shared Services within or between Co-Location Racks (discussed in paragraphs 10.95 to 10.132 below); and
 - b) Interconnection Sharing Service (discussed in paragraphs 10.87 to 10.94 below).
- (ii) Wholesale Symmetrical Ethernet Access ('**WSEA**') physical and logical circuits at a location i.e. Exchange (IBH) or End User premises (CSH) situated in the Zone B MI WHQA Markets. WSEA IBH may require Access to Co-Location, Co-Location Resource Sharing, Co-Location Rack Interconnection and Shared Services within or between Co-Location Racks (discussed in paragraphs 10.95 to 10.132 below);
- (b) Obligations to provide Access to WDM "Uncontended" bandwidth services⁸¹³ (discussed in paragraphs 10.76 to 10.86 below), which consist of:
 - (i) WDM Interconnection Services (CSH or IBH): WDM Interconnection IBH may require Access to Co-Location, Co-Location Resource Sharing, Co-Location Rack Interconnection and Shared Services within or between Co-Location Racks in all Eircom Exchanges (discussed in paragraphs 10.95 to 10.132 below); and
 - (ii) WDM access connection to either an End User's premises (CSH) or to a Co-Location facility in an Eircom Exchange (IBH), situated in the Zone B MI WHQA Market. WDM IBH access connection may require Access to Co-Location, Co-Location Resource Sharing, Co-Location Rack Interconnection and Shared Services within or between Co-Location Racks in all Eircom Exchanges (discussed in paragraphs 10.95 to 10.132 below).

10.73 Interconnection (i.e. NGN Ethernet and WDM) and Co-Location⁸¹⁴ in both the Zone A MI WHQA Markets and Zone B MI WHQA Markets is necessary for the provision of a regulated MI WHQA access product that terminates in the Zone B MI WHQA Markets. Absent regulation, ComReg's view is that Eircom, as a vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets, has the ability and incentive to restrict or deny access to Interconnection and Co-Location.

⁸¹³ These are intended to replace the current services refer to as "end-to-end" Wholesale Uncontended Product ('**WUP**') and LLU Backhaul.

⁸¹⁴ Including Co-Location Resource Sharing, Co-Location Rack Interconnection and Shared Services within or between Co-Location Racks.

- 10.74 ComReg notes that the transition from a national regulated MI WHQA Markets to a regulated Zone B MI WHQA Markets will require Access Seekers to have Interconnection, Co-Location and backhaul capability at a local level in the network (i.e. regional⁸¹⁵ or Aggregation Node⁸¹⁶ level). The Associated Facilities (Co-Location Rack Interconnection, Co-Location Resource Sharing, and Shared Services within or between Co-Location Racks in all Eircom Exchanges) and the Associated Service (Interconnection Sharing Service) allow an Access Seeker (AS-1) the opportunity to negotiate a commercial agreement with another Access Seeker (AS-2) for access to their Interconnection and Co-Location⁸¹⁷ facilities. The Associated Facilities and Associated Service has the ability to lower Access Seekers effective costs and thereby, lower the barriers to entry/expansion into the regulated Zone B MI WHQA Markets, for Access Seekers (through allowing Interconnection/Co-Location costs to be shared between Access Seekers). ComReg's view is that Eircom, as a vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets, has the ability and incentive to restrict or deny access to these Associated Facilities and Associated Service, thereby raising the barrier of entry/expansion into the regulated Zone B MI WHQA Markets, for Access Seekers.
- 10.75 For the avoidance of doubt, the WDM Interconnection service as depicted in Figure 89 (Annex A.1.10) is mandated as part of this Decision. Whereas the WDM Interconnection service as depicted in Figure 90 (Annex A.1.10) shall be developed by Eircom on the basis of an access request from an Undertaking.

Provide Access to Interconnection Services (including Interconnection Sharing Service)

- 10.76 Pursuant to Regulation 12(2)(a) of the Access Regulations, ComReg's position is that Eircom is to be required to provide Access to:
- (a) Interconnection Services; and
 - (b) Interconnection Sharing Service.
- 10.77 The justification for the above obligations is discussed below in paragraphs 10.78 to 10.94.

⁸¹⁵ 12 Aggregation Regions.

⁸¹⁶ 192 Aggregation Nodes.

⁸¹⁷ The Access Seeker's (AS-2) Co-Location rack and facilities in the Eircom Exchange.

Interconnection Services

- 10.78 Interconnection Services refer to the physical and/or logical connectivity between networks to enable the handover of traffic between Undertakings' networks at the PoH⁸¹⁸. Eircom currently provides Interconnection Services in the existing Leased Lines Market and related markets using the WEIL product set.
- 10.79 Interconnection Services are necessary to connect the Access Seekers' networks with Eircom's network. Without Interconnection Services, competition in the relevant market and downstream markets would be restricted to resale of services⁸¹⁹ which limits scope for product differentiation and innovation by Access Seekers, thereby undermining consumer choice and competition in the market. Eircom currently supplies the following range of Interconnection services (together referred to as '**Interconnection Services**'):
- (a) ISH - the connection between the Exchange and the Access Seeker's nominated PoH;
 - (b) CSH - the connection from the Eircom network to the Access Seeker's equipment in the Access Seeker's premises, which includes the installation of an Eircom Network Termination Unit ("**NTU**")⁸²⁰ at the Access Seeker's premises;
 - (c) IBH - the connection from the Eircom network to the Access Seeker's equipment within the Exchange, or equivalent facility; and
 - (d) ENH - the connection from the Eircom network through a dedicated Aggregation Node interface to the Access Seeker's equipment.

⁸¹⁸ PoH or Point of Handover means the physical point at which two networks are interconnected to allow traffic to pass between these networks.

⁸¹⁹ If Access Seekers do not have access to the wholesale inputs of Interconnection they would be restricted to reselling end-to-end services.

⁸²⁰ "Network Termination Unit" or "NTU" means the physical interface which provides the service demarcation or Point of Handover of the wholesale service within the customer premises;

- 10.80 Access to Interconnection Services supports the purchase of MI WHQA access products and services that are essential for Access Seekers to be able to provide Electronic Communications Services ('**ECs**') and Electronic Communications Networks ('**ECNs**') in the Zone B MI WHQA Markets. A range of different types of Interconnection Services are required to ensure effective competition in the Zone B MI WHQA Markets and related downstream markets by facilitating product innovation and differentiation.
- 10.81 The imposition of this obligation requiring Eircom to provide Access to various types of Interconnection Services recognises the differing degrees of infrastructure deployment by Access Seekers in the Zone B MI WHQA Markets (and more broadly within the wider MI WHQA Markets). For example, not all Access Seekers have sufficient infrastructure of their own that is geographically close enough to Eircom's network, in order to be able to economically or commercially avail of Eircom's IBH or ISH services⁸²¹.
- 10.82 For example, if CSH was the only Interconnection handoff type available, then larger scale Access Seekers would not be in a position to efficiently use their own infrastructure and this could reduce Access Seekers' incentives for network investment thereby limiting sustainable competition in the longer term. Therefore, requiring Access to the full suite of Interconnection Services is necessary to ensure that there is sufficient flexibility given that Access Seekers will have invested in building out network infrastructure to varying degrees (e.g. Co-Location, In-span chambers, ENH Nodes).
- 10.83 The availability of Interconnection is one of the fundamental concepts that underpins the ladder of investment and infrastructure based competition. As Access Seekers build-out their own network and climb the ladder of investment, points of handover are required deeper into Eircom's network. This allows for increased efficiencies and lower costs for Access Seekers who can avail of more cost effective Interconnection Services deeper in the network.
- 10.84 ComReg's view is that Eircom, as a vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets has the ability and incentive to refuse Access to Interconnection Services. Without Access to Interconnection Services, Access Seekers cannot purchase regulated products and services in the Zone B MI WHQA Markets and absent this it would limit competition to Eircom's downstream arm, ultimately being damaging to consumer interests given the potential for such reduced competition to impact pricing, quality and other parameters.

⁸²¹ As of 31 December 2017, [%< ██████████] % of NGN Ethernet Interconnections were CSH.

- 10.85 Eircom Exchanges (i.e. Trunk and Non-Trunk Nodes) are physically situated in either Zone A MI WHQA Markets or Zone B MI WHQA Markets. Interconnection in Zone A MI WHQA Markets and Zone B MI WHQA Markets is necessary for the provision of a regulated MI WHQA access product that terminates in the Zone B MI WHQA Markets. Eircom is obliged to provide Interconnection Services at the Trunk Node locations, even though they are in the Zone A MI WHQA Markets. This is because if Access Seekers cannot interconnect at the Trunk Node, it is not possible for them to effectively compete in the Zone B MI WHQA Markets or in the related retail Leased Lines markets.
- 10.86 In assessing the proportionality of this obligation, ComReg's position is that Interconnection is essential in order that an Access Seeker can receive traffic from regulated MI WHQA access product(s)/service(s) which terminates in the Zone B MI WHQA Markets.

Interconnection Sharing Service

- 10.87 Interconnection Sharing Service allow an Access Seeker the opportunity to negotiate a commercial agreement with another Access Seeker for access to their Interconnection facilities in order to make the transition, from a national regulated MI WHQA Markets to a regulated Zone B MI WHQA Markets more efficient. Interconnection Sharing by Access Seekers will ultimately benefit competition and End Users.
- 10.88 Interconnection Sharing Service provides an Access Seeker (AS-1) with the opportunity to connect its NGN Ethernet logical circuit to a WEIL which is owned by another Access Seeker (AS-2) – in circumstances where AS-2 agrees commercially to allow AS-1 it use its WEIL(s).
- 10.89 Interconnection Sharing Service is a derivative of the Interconnection Service – it cannot exist in its own right. It is less burdensome on Eircom as it minimises the provision/build of new Interconnection Services given that Interconnection Sharing Service is implemented using Interconnection Services which are already in place (or on order).
- 10.90 Some Access Seekers may wish to maintain exclusive use of their Interconnection Services. Other Access Seekers may wish to share their Interconnections Services especially where their Interconnection capacity greatly exceeds their own requirements (e.g. 10Gb/s and 100Gb/s WEILs).

- 10.91 Currently, Eircom offers Interconnection Sharing Service where two or more Access Seekers are effectively operating under one licence agreement⁸²² e.g. where AS-1 is 100% owned by AS-2. The implementation is straightforward given that AS-1 rents the access circuit (WSEA) and logical circuit (WES) connecting the access circuit to the WEIL – the WEIL is owned by AS-2. There are no significant billing implications given that today the WSEA/WES charges are issued on a separate bill to AS-1, while the WEIL charges are issued on another bill to AS-2.
- 10.92 This obligation extends the existing functionality offered by Eircom to any Access Seeker who itself enters into a commercial agreement with another Access Seeker. ComReg envisages that the process and system development required will be minor in nature - focused on allowing Access Seekers to record a 'white' list⁸²³ (e.g. on the UG) and Eircom amending the existing Access Seeker's⁸²⁴ licence agreement.
- 10.93 It is beneficial to an Access Seeker (AS-1) to reach an agreement with another Access Seeker as it enables Access Seeker (AS-1) to compete more effectively by facilitating access to the Zone B MI WHQA Markets within a reasonable timeline, given that the Interconnection Service is already in place. It is beneficial to an Access Seeker (AS-2) to reach an agreement with another Access Seeker to share its Interconnection Service as the Access Seeker (AS-2) has the ability to offer backhaul services as part of the Interconnection Sharing agreement. In this way, the Interconnection Sharing Service promotes innovation, competition, and ultimately benefit End Users. In ComReg's view, the obligations above is justified and proportionate for the reasons set out above.
- 10.94 Eircom is obliged to provide an Interconnection Sharing Service which is an Associated Service (of Interconnection) for the provision of a regulated MI WHQA access product that terminates in the Zone B MI WHQA Markets.

Provide Access to Co-Location, and Co-Location Related Services

- 10.95 Pursuant to Regulation 12(1) of the Access Regulations, ComReg's position is that Eircom is to be required to provide access, to:
- (a) Co-Location (discussed in paragraphs 10.103 to 10.109 below);

⁸²² All charges relating to Interconnection are invoiced to, and accepted by, AS-2.

⁸²³ The 'white' list will allow an Access Seeker (AS-2) to permit other Access Seekers listed on this list to share its (AS-2) Interconnections.

⁸²⁴ Access Seeker (AS-1) who wish to avail of Interconnection Sharing and the Assess Seeker (AS-2) who permits Interconnection Sharing to take place.

- (b) Co-Location Resource Sharing (discussed in paragraphs 10.110 to 10.120 below);
 - (c) Co-Location Rack Interconnection (discussed in paragraphs 10.121 to 10.127 below); and
 - (d) Shared Services within or between Co-Location Racks (discussed in paragraphs 10.128 to 10.132 below).
- 10.96 Co-Location Related Services collectively refers to those services listed in 10.95 (b) to (d) above.
- 10.97 Eircom Exchanges (i.e. Trunk and Non-Trunk Nodes) are physically situated in either Zone A MI WHQA Markets or Zone B MI WHQA Markets. As outlined in paragraph 10.74 above, Interconnection in Zone A MI WHQA Markets and Zone B MI WHQA Markets is necessary for the provision of a regulated MI WHQA access product that terminates in the Zone B MI WHQA Markets. Eircom is obliged to provide Interconnection Services at the Trunk Node locations, even though they are in the Zone A MI WHQA Markets. This is because if Access Seekers cannot interconnect at the Trunk Node, it is not possible for them to effectively compete in the Zone B MI WHQA Markets or in the related retail Leased Lines markets.
- 10.98 On that basis, Co-Location is an essential Associated Facility for Interconnection IBH Handover (i.e. the connection from the Eircom network to the Access Seeker's equipment within the Exchange, or equivalent facility). Therefore Co-Location in Zone A MI WHQA Markets and Zone B MI WHQA Markets is an Associated Facility for the provision of a regulated MI WHQA access product that terminates in the Zone B MI WHQA Markets.
- 10.99 Hence, Co-Location in all Eircom Exchanges, is an Associated Facility for the provision of a regulated MI WHQA access product that terminates in the Zone B MI WHQA Markets. Absent regulation, ComReg's view is that Eircom, as a vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets, has the ability and incentive to restrict or deny access to Co-Location which in turn would deny Access Seekers of IBH-based Interconnection. Without Access to Co-Location, Access Seekers cannot purchase regulated IBH products and services and absent this it would limit competition to Eircom's downstream arm, in the Zone B MI WHQA Markets, ultimately being damaging to consumer interests given the potential for such reduced competition to impact pricing, quality and other parameters.

- 10.100 In order to purchase regulated MI WHQA products and services, in the Zone B MI WHQA Markets, Access Seekers will require Interconnection Services at up to 12 regional locations and 93 Trunk Node locations. Access Seekers opting to purchase IBH Interconnection will require Co-Location in an Eircom Exchange. Co-Location Related Services allow an Access Seeker the opportunity to negotiate a commercial agreement with another Access Seeker for access to their Co-Location facilities. If a commercial agreement is reached between the parties, the guest Access Seeker⁸²⁵ will avoid long lead-times on the Co-Location facility installation⁸²⁶. Co-Location Resource Sharing has the potential to lower the effective cost of Co-Location and thereby lower barriers to entry/expansion in the Zone B MI WHQA Markets.
- 10.101 Without Access to Co-Location Related Services, Access Seekers would not have the option to utilise available Co-Location facilities⁸²⁷ which would limit competition, in the Zone B MI WHQA Markets, ultimately being damaging to consumer interests. Co-Location Resource Sharing offers the Access Seeker an alternative more efficient Co-Location installation if that Access Seeker can reach a commercial agreement with another Access Seeker who has excess Co-Location resources (space and power). Hence, Co-Location Resource Sharing will ultimately benefit competition and End Users.
- 10.102 The justifications for these obligations are discussed in paragraphs 10.103 to 10.132 below.

Co-Location

- 10.103 Pursuant to Regulation 12(1) of the Access Regulations, access to Co-Location and other Associated Facilities is necessary to enable and support the provision of Interconnection IBH MI WHQA products, services and facilities⁸²⁸.
- 10.104 Co-Location is a wholesale product, which is essential in order for Access Seekers to gain Access to IBH Interconnection Services which support the broader access obligations requiring Eircom to provide Access to regulated MI WHQA products, services and facilities.

⁸²⁵ The host Access Seeker enters into a commercial agreement to share their Co-Location resources with other guest Access Seeker(s).

⁸²⁶ Including Co-Location footprint preparation, AC/DC power ordering and installation.

⁸²⁷ Co-Location facilities currently rented (or ordered) by Access Seekers from Eircom.

⁸²⁸ Where this is required for the provision of MI WHQA products or services terminating in the Zone B MI WHQA Markets.

- 10.105 This serviced space within an Eircom premises is used to accommodate Access Seeker's equipment racks which contain the Access Seeker's electronic equipment which is necessary in order for the Access Seeker to offer a retail or wholesale product or service offering. The serviced space (i.e. co-located equipment rack) Point of Handover ('**PoH**') is connected via an Eircom's fibre to the Eircom MDF/Optical Distribution Frame ('**ODF**') and onto the Eircom's Aggregation Node. The connection to the PoH for IBH related MI WHQA Interconnection Services is a fibre cable running from the Eircom ODF to the Access Seeker's Co-Location rack located within the Eircom Exchange building where the Interconnection to the Access Seeker's network is facilitated. Co-Location services provide serviced space and ancillary services (including both Alternating Current ('**AC**') and Direct Current ('**DC**') power, and air-conditioning) in an Eircom Exchange building or similar facility.
- 10.106 ComReg's position is that Eircom has SMP in the Zone B MI WHQA Markets. A Co-Location access obligation is necessary, because it promotes competition by providing Access to essential facilities that enable Access to MI WHQA IBH products and services. The absence of such access would undermine an Access Seeker's ability to avail of MI WHQA products and services. Access to Co-Location products and services is required to ensure the development of sustainable and effective downstream competition and to minimise foreclosure concerns that could arise, absent such regulation.
- 10.107 ComReg considers that this obligation is necessary in this market in order that an Access Seeker can avail of access to MI WHQA products, services and facilities terminating in the Zone B MI WHQA Markets.
- 10.108 In assessing the proportionality of the Co-Location obligation, ComReg considers that Co-Location is necessary (so that Access Seekers can purchase regulated IBH MI WHQA products services and facilities⁸²⁹), and no cost effective viable alternatives were identified that would more effectively meet the aims of promoting long-term sustainable competition to the benefit of End Users.
- 10.109 For the reasons set out above, it is ComReg's position that the Co-Location access obligation is justified and proportionate given the aims pursued, namely to promote the development of competition to the ultimate benefit of End Users.

⁸²⁹ Including Related MI WHQA Elements.

Co-Location Resource Sharing

- 10.110 Pursuant to Regulation 12(1) of the Access Regulations, ComReg's position is that Eircom is to be required to provide Access to Co-Location Resource Sharing – a Co-Location Related Service – where this is used for the provision of MI WHQA products and services terminating in the Zone B MI WHQA Markets.
- 10.111 Co-Location Related Services allow an Access Seeker the opportunity to negotiate a commercial agreement with another Access Seeker for access to their Co-Location facilities in order to make the transition from a national regulated MI WHQA Markets to a regulated Zone B MI WHQA Markets more efficient.
- 10.112 As stated in paragraph 10.74 above, ComReg notes that the transition from a national regulated MI WHQA Markets to a regulated Zone B MI WHQA Markets will require Access Seekers to have Interconnection, Co-Location and backhaul capability at a regional⁸³⁰ or Aggregation Node⁸³¹ level. Co-Location Resource Sharing allow an Access Seeker the opportunity to negotiate a commercial agreement with another Access Seeker for access to their Co-Location and backhaul facilities in order to make the transition, from a national regulated MI WHQA Markets to a regulated Zone B MI WHQA Markets more efficient.
- 10.113 For example, an Access Seeker wishing to purchase regulated IBH MI WHQA products services and facilities, in the Zone B MI WHQA Markets, will require to order a substantial number of Co-Location footprints in Eircom Exchanges. Co-Location Resource Sharing offers the Access Seeker an alternative more efficient solution if that Access Seeker can reach a commercial agreement with another Access Seeker who has excess Co-Location resources (space and power). Hence, Co-Location Resource Sharing will ultimately benefit competition and End Users
- 10.114 Co-Location Resource Sharing provides an Access Seeker (AS-1) with the opportunity to share Co-Location which another Access Seeker (AS-2) rents from Eircom – in circumstances where AS-2 agrees commercially to allow AS-1 share its Co-Location resources (e.g. space, power, termination equipment etc.).
- 10.115 Co-Location Resource Sharing is less burdensome on Eircom as it minimises the provision/build of new Co-Location given that Co-Location Resource Sharing is implemented using Co-Location already in place.

⁸³⁰ 12 Aggregation Regions.

⁸³¹ 192 Aggregation Nodes.

- 10.116 Some Access Seekers may wish to have exclusive use of their Co-Location services. Other Access Seekers may wish to share their Co-Location, especially where they have spare Co-Location capacity (e.g. space and power).
- 10.117 Given the likelihood of increased demand⁸³² for Co-Location from Access Seekers will materialise at Eircom Exchanges (Trunk Nodes⁸³³ and Non-Trunk Nodes), the facility for Co-Location Resource Sharing, if utilised, will reduce the burden on Eircom to install Co-Location where Access Seekers reach commercial agreements with other Access Seekers. It facilitates the efficient use of Co-Location space which may be scarce in Eircom Exchanges given the likely increase in demand.
- 10.118 An Access Seeker (AS-1) ordering a Zone B MI WHQA service at an Eircom Exchange (e.g. Trunk or Non-Trunk Node) can nominate an existing Co-Location rack (owned by another Access Seeker – AS-2) within an Eircom Exchange as the termination point for the service, where AS-1 has entered into a commercial agreement with AS-2.
- 10.119 The key benefit for AS-1 who enters into a commercial agreement to share existing Co-Location resources⁸³⁴ is the reduction in delivery time for MI WHQA IBH installation given that there is no Co-Location construction phase required. Absent regulation, ComReg's position is that Eircom, as a vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets, has the ability and incentive to restrict or deny access to Co-Location Resource Sharing because it allow Access Seekers with the option to access Co-Location more efficiently thereby delivering its MI WHQA products services and facilities in a competitive timeframe.
- 10.120 For the reasons set out above, it is ComReg's position that the Co-Location Resource Sharing access obligation is justified and proportionate given the aims pursued, namely to promote the development of competition to the ultimate benefit of End Users.

⁸³² From Access Seekers who avail of the opportunity to switch to alternative MI WHQA services by installing Interconnections deeper into the network e.g. in Eircom Exchanges (Trunk and Non-Trunk Nodes).

⁸³³ Especially in Exchanges where Provider Edge ('PE') Nodes are located. PE nodes are larger capacity nodes situated higher in the network hierarchy to which every Aggregation Node within an Aggregation Region is connected. There are two PE nodes in each Region.

⁸³⁴ For example, space, power, termination equipment etc.

Co-Location Rack Interconnection

- 10.121 Pursuant to Regulation 12(1) of the Access Regulations, ComReg's view is that Eircom should be required to allow Access Seekers to interconnect their co-located equipment in Exchange buildings or similar facilities where this is used for the provision of products and services terminating in the Zone B MI WHQA Markets. This will enable Access Seekers to share services⁸³⁵ thereby responding to End Users MI WHQA requirements within a faster timeline and in an efficient manner.
- 10.122 This service is automatically available in Co-Location Resource Sharing given that Access Seekers sharing the same Co-Location rack are free to interconnect cables between their equipment.
- 10.123 For example, an Access Seeker will have the ability to offer another Access Seeker MI WHQA services that are developed using regulated MI WHQA products, services and facilities⁸³⁶. Alternatively, an Access Seeker (AS-2) can offer another Access Seeker (AS-1) backhaul services which the Access Seeker (AS-1) can combine with regulated MI WHQA products, services and facilities⁸³⁷ thereby offering retail MI WHQA products and services to End Users.
- 10.124 Access Seekers' equipment racks are normally adjacent to or in close proximity to each other within the Eircom Exchange. Moreover, even if this is not the case, Access Seekers equipment is still capable of being connected within the Exchange. Access Seekers could route their cables directly between their adjacent equipment racks, or Access Seekers can install their cables,⁸³⁸ utilising Eircom cable trays, between racks of equipment or by other means, as appropriate.
- 10.125 Absent regulation, ComReg's position is that Eircom, as a vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets, has the ability and incentive to refuse Access to Co-Location Rack Interconnection products and facilities by insisting that it exclusively supply HQA products, services and facilities to Access Seekers thereby raising Access Seekers costs which in turn acts as a barrier to entry/expansion in the Zone B MI WHQA Markets.

⁸³⁵ Services such as backhaul which Access Seekers may share in order to access MI WHQA products, services and facilities.

⁸³⁶ Including Related MI WHQA Elements.

⁸³⁷ Including Related MI WHQA Elements.

⁸³⁸ The Access Seeker(s) will submit an order to Eircom so that Eircom can survey the route between the relevant Co-Location Racks. Eircom will provide a quotation to the Access Seekers(s) in situations where cable tray installation is required. Eircom may provide supervised access, as appropriate, when the Access Seeker's authorised contractor install their cables on the Eircom cable trays.

- 10.126 In assessing the proportionality of this obligation, ComReg considers that Co-Location Rack Interconnection is necessary to promote long-term sustainable competition and to the benefit of End Users by providing Access Seekers with the opportunity to lower its costs by sharing backhaul. It offers Access Seekers the opportunity of offer End Users faster MI WHQA delivery timelines (as backhaul is already in place), at competitive prices (as backhaul cost is shared between Access Seekers).
- 10.127 ComReg's position is that the obligation is justified and proportionate for the reasons set out above.

Shared Services within or between Co-Location Racks

- 10.128 Pursuant to Regulation 12(1) of the Access Regulations, ComReg position is that Eircom is to be required to not restrict access to Shared Services within or between Co-Location Racks. Shared Services are those services (e.g. power, backhaul) which Access Seekers may share in order to Access MI WHQA products, services and facilities, terminating in the Zone B MI WHQA Markets.
- 10.129 For example, an Access Seeker will have the ability to offer wholesale services to another Access Seekers. For example, an Access Seeker can offer another Access Seeker MI WHQA services that are developed using regulated MI WHQA products, services and facilities⁸³⁹, in the Zone B MI WHQA Markets. Alternatively, an Access Seeker (AS-2) can offer another Access Seeker (AS-1) backhaul services which the Access Seeker (AS-1) can combine with regulated MI WHQA products, services and facilities⁸⁴⁰, in the Zone B MI WHQA Markets, thereby offering retail MI leased line products and services to End Users. The Access Seeker (AS-2) is either co-located in the same Co-Location rack (with AS-1) or the individual Co-Location racks of both Access Seekers are connected to one another via the Co-Location Rack Interconnection product.

⁸³⁹ Including Related MI WHQA Elements.

⁸⁴⁰ Including Related MI WHQA Elements.

- 10.130 The justification for this obligation is that it can address potential competition problems in the Zone B MI WHQA Markets given that Eircom has the potential to impose unreasonable terms and conditions on the use of Co-Location e.g. requiring each Access Seeker to rent its own Co-Location footprint or not allowing Access Seekers share services within or between Co-Location Racks thereby raising rival costs, and damaging their ability to compete effectively. Shared Services within or between Co-Location Racks promotes innovation, competition, efficient investment, and ultimately benefit End Users.
- 10.131 Absent regulation, ComReg's position is that Eircom, as a vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets, has the ability and incentive to refuse Access to Shared Services within or between Co-Location racks either outright, or by imposing unreasonable terms and conditions on the use of Co-Location because it would result in a limiting of the effectiveness of a competitor.
- 10.132 In ComReg's view the obligation is justified and proportionate for the reasons set out above.

To negotiate in good faith

- 10.133 Pursuant to Regulation 12(2)(b) of the Access Regulations ComReg's position is that Eircom is to continue to be required to negotiate in good faith⁸⁴¹ with Undertakings requesting Access to wholesale MI WHQA products, services and facilities in the Zone B MI WHQA Markets. This obligation shall also apply to Related MI WHQA Elements.
- 10.134 Having regard to the competition problems identified in Section 9, ComReg considers this measure to be proportionate and justified in order to ensure that genuine *bona fide* negotiations take place between Eircom and Access Seekers in relation to access.
- 10.135 Eircom has the ability and incentive to expressly or constructively refuse to provide Access to MI WHQA products, services and facilities⁸⁴² in the Zone B MI WHQA Markets. The obligation will also somewhat address imbalances between the bargaining powers of the respective parties in the negotiation process by reducing incentives to unnecessarily prolong negotiations and should also facilitate a more efficient and effective consideration of reasonable requests for Access and provision of such Access.

⁸⁴¹ Amongst the factors that ComReg may have regard to in any assessment of Eircom's compliance with its obligation to negotiate in good faith, ComReg may consider the extent to which Eircom has adequately resourced such negotiations.

⁸⁴² Including Related MI WHQA Elements.

10.136 ComReg also notes that the obligation to negotiate in good faith implies that the responsibility rests with Eircom to demonstrate that its approach to negotiation with Undertakings is in good faith and that any unmet access requests can be shown to be unreasonable by reference to objective criteria. In this regard, recital 19 of the Access Directive states with respect to requests to SMP Undertakings for access that:

“...such requests should only be refused on the basis of objective criteria such as technical feasibility or the need to maintain network integrity.”

10.137 ComReg’s position is that should an access request be refused, or only partially met, then the objective criteria for refusing same should also be provided by Eircom to the requesting Access Seeker at the time of refusal. This will also improve regulatory effectiveness and efficiency should any complaint or dispute be raised with ComReg, as it will provide a useful audit trail for compliance-monitoring purposes.

10.138 ComReg notes that the obligation to negotiate in good faith encompasses the way in which Eircom conducts the negotiations as well as the positions that it takes in them. In investigating an allegation of a failure to negotiate in good faith, ComReg might draw inferences from Eircom’s behaviour and from the adequacy of the processes and controls it has put in place to assure compliance with this obligation. For example, ComReg might draw adverse inferences from the following:

- (a) a failure on the part of Eircom to behave in the way that a willing seller would behave when negotiating with a willing buyer;
- (b) a failure by Eircom to respond to proposals made by Access Seekers in a timely and constructive manner;
- (c) a failure by Eircom to deploy participants in the negotiations who had appropriate knowledge and authority, so that negotiations could proceed in a timely manner;
- (d) the absence of effective controls to assure that decision-making processes within Eircom in relation to the negotiations could not be influenced by concerns about the commercial impact on Eircom's downstream retail business; and
- (e) the presence of incentives for individuals within Eircom who participated in or influenced the negotiations that might lead them to receive greater financial or other benefits if the negotiations were to be delayed, or to result in an outcome other than that which might have been freely negotiated between a willing buyer and a willing seller.

10.139 The precise nature of any investigation and the degree to which inferences might be drawn from behaviour would need to be assessed in the context of the actual circumstances of any particular case.

10.140 In ComReg's view, the continuation of this existing remedy does not impose any significant burden on Eircom beyond that which would normally be expected to occur in circumstances involving fair commercial negotiations between parties.

Not to withdraw Access to facilities already granted

10.141 Pursuant to Regulation 12(2)(c) of the Access Regulations, ComReg's position is that Eircom is to be required not, without the prior approval of ComReg, to withdraw Access to facilities already granted in the Zone B MI WHQA Markets. This obligation shall also apply to Related MI WHQA Elements.

10.142 For the avoidance of doubt, this does not mean there are no objectively justified circumstances for withdrawing Access to Wholesale MI WHQA products, services and facilities⁸⁴³, in the Zone B MI WHQA Markets, (such as the unjustified non-payment of wholesale charges), however, this would have to be considered on basis of the facts of the particular circumstances governing the proposed withdrawal of access.

10.143 Having regard to the competition problems identified in Section 9, ComReg has identified that Eircom would have the ability and incentive to delay, refuse or withdraw Access to wholesale MI WHQA products, services and facilities⁸⁴⁴, in the Zone B MI WHQA Markets, either outright or constructively, resulting in restrictions and/or distortions in competition to the detriment of End Users.

10.144 As Eircom's network evolves and changes, there is a potential for allowable withdrawal of access. For example, the points of Interconnection may change or there may be consolidation of services etc. ComReg considers that the obligation, requiring that Eircom seeks ComReg's approval prior to any withdrawal of access, will promote regulatory certainty for all parties without unduly restricting investment incentives because Eircom will have to provide ComReg with an impact analysis any proposed withdrawal of access would have on Access Seekers and End Users.

10.145 Another example is the scenario where Eircom implement an OSS modernisation program whereby an Access Seeker would have to use new functionality for pre-order, order and fault management activities. Eircom cannot withdraw access to existing functionalities for pre-order, order and fault management to Access Seekers without seeking ComReg's approval prior to any planned withdrawal of the existing OSS.

⁸⁴³ Including Related MI WHQA Elements.

⁸⁴⁴ Including Related MI WHQA Elements.

- 10.146 More specifically, ComReg’s position is that Eircom should notify ComReg, in writing, of any proposal to withdraw Access to facilities already granted, giving reasons for the proposed service withdrawal, as well as the impacts that the withdrawal of access is likely to have on existing MI WHQA purchasers and End Users.
- 10.147 Where Eircom proposes to withdraw access to a service, ComReg would retain the right to consult with relevant parties, prior to making a decision on whether or not to grant its approval to any such request.
- 10.148 In paragraph 9.125 of the 2018 Further Consultation, ComReg’s preliminary view was that:
- “a five years notification period prior to closure of an MDF, ODF or the relocation of Aggregation Nodes would be appropriate and proportionate”.*
- 10.149 Having considered⁸⁴⁵ Eircom’s views, as outlined in paragraph A1.622, ComReg has amended its position that prior to closure of an MDF, ODF or the relocation of Aggregation Nodes, a five year notification period is required. ComReg’s position is now that the notification period prior to closure of an MDF, ODF or the relocation of Aggregation Nodes will be specified by ComReg. For example, in the specific case where the Department of Communications, Climate Action and Environment (**DCCA**E) National Broadband Plan (**NBP**)⁸⁴⁶ network was rolled out, ComReg would assess and consider the appropriate withdrawal period(s) and conditions of withdrawal, following an appropriate consultation process.
- 10.150 Eircom may only withdraw Access in accordance with the terms and conditions as may be determined by ComReg. In the 2018 Further Consultation, ComReg provided examples of the types of facilities that will require approval from it prior to withdrawal of Access, such as ODF, MDF or Aggregation Node. For the avoidance of doubt the requirement for Eircom to seek approval for withdrawal of a facility already granted is not limited to these specific types of facilities but all facilities utilised by Access Seekers.

⁸⁴⁵ In paragraph A1.631 of Annex A.1.10.

⁸⁴⁶ The DCCA E published the NBP in August 2012. This is a Government wide initiative to deliver high-speed broadband services to all businesses and households in Ireland. The NBP defines high-speed broadband as a minimum speed of 30Mbps download and 6Mbps upload. <https://www.dccae.gov.ie/en-ie/communications/topics/Broadband/national-broadband-plan/Pages/National-Broadband-Plan.aspx>.

- 10.151 ComReg's position is that Eircom is required to notify ComReg in writing of proposals which have the potential to withdraw Access to facilities already granted, when such proposals have the potential to adversely impact Access Seekers, End Users and competition in general and, in particular, with respect to Eircom's compliance with its regulatory obligations. Eircom must seek approval from ComReg before any proposed changes can be implemented. ComReg also notes that the responsibility for determining whether notification is necessary with respect to a particular network change rests with Eircom, in the first instance.
- 10.152 ComReg notes that within the period of this review it is possible that Eircom may seek to put in place a programme to commence the retirement of its copper infrastructure. Any such programme would be considered by ComReg having regard to the principles to be established on foot of ComReg's consideration of the issues subject to the 2016 Copper Network Transition Consultation⁸⁴⁷ and any future consultation(s) associated with the withdrawal of regulated copper based services.

To grant open Access to technical interfaces, protocols and other key technologies

- 10.153 Pursuant to Regulation 12(2)(e), ComReg's position is that Eircom is to be required to grant open Access to technical interfaces, protocols and other key technologies that are indispensable for the interoperability of services in the Zone B MI WHQA Markets. This obligation shall also apply to Related MI WHQA Elements.
- 10.154 Having regard to the competition problems identified in Section 9, absent regulation, arising from Eircom's ability over its control of infrastructure that is not easily duplicated and its incentives as a vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets that competes with Access Seekers in both the retail and wholesale LL markets (and related markets), ComReg considers that this remedy is both justified and proportionate in order to ensure that, in the context of the provision of Access to MI WHQA products, services and associated facilities⁸⁴⁸, in the Zone B MI WHQA Markets, interoperability of networks and services is ensured.

⁸⁴⁷ "Transition from Eir's copper network, Proposed principles and notification procedures", [ComReg Document 16/01](#), 16 January 2016 ('**2016 Copper Network Transition Consultation**').

⁸⁴⁸ Including Related MI WHQA Elements.

10.155 In so doing, ComReg considers that this obligation will contribute to the development of sustainable downstream competition to the ultimate benefit of End Users because absent regulation, ComReg's position is that Eircom, as a vertically integrated Undertaking with SMP in the Zone B MI WHQA Markets, has the ability and incentive to restrict or deny access to technical interfaces, protocols and other key technologies.

To provide Access to Eircom's OSS

10.156 Pursuant to Regulation 12(2)(h), Eircom is to be subject to obligations requiring it to provide Access to OSS or similar systems to ensure fair competition in the provision and in-service management of services.

10.157 Access to Eircom's OSS plays an important role in Eircom's provisioning of wholesale services to Access Seekers and its downstream arm. This also includes Access to OSS for the purpose of ordering, fault and in-service management. Access to OSS is therefore essential to the effectiveness and efficiency of the operational aspects of the supply of the wholesale MI WHQA products, services and facilities⁸⁴⁹ in the Zone B MI WHQA Markets that are ultimately used as inputs to the supply of service(s) to End Users.

10.158 In the absence of Access Seekers being able to gain effective and efficient Access to Eircom's OSS, they would likely be at a significant competitive disadvantage relative to Eircom's retail arm in the provision of service(s) because Eircom's retail arm would have access to OSS for pre-provisioning and provisioning. Having regard to the competition problems discussed in Section 9, ComReg considers that this obligation is necessary to support Eircom's other access obligations because Eircom has the ability and the incentives to impede Access to its OSS in order to leverage its market power into downstream and adjacent markets.

10.159 ComReg's position is that the LLRO includes the documents which are expressly referred to as being part of the LLRO and any associated or subordinate documents relied upon to meet Eircom's Access obligations as set out in this Decision, including but not limited to product descriptions, industry process manuals, service level agreements, unified gateway interface guidelines, unified gateway data contract ("UG Data Contract") and associated licence documentation. Such documents are necessary to, inter alia, support effective Access to pre-provisioning, provisioning and service assurance for products, services and facilities via Eircom's OSS.

⁸⁴⁹ Including Related MI WHQA Elements.

- 10.160 ComReg's position is that, as set out in paragraph 10.301 below, Eircom has an obligation⁸⁵⁰ to notify ComReg three (3) months and one (1) week of changes⁸⁵¹ to the LLRO, which includes associated or subordinate documents, such as those referred to in paragraph 10.159 above. Eircom has also an obligation⁸⁵² to publish the LLRO, three (3) months in advance of changes to the LLRO. For this reason, ComReg disagrees with ALTO and BT's views (as outlined in paragraphs A1.640 in Annex A.1.10) that ComReg should impose a specific OSS upgrade process obligation in the Zone B MI WHQA Markets, since the manner by which Access Seekers carry out tasks relating to pre-provisioning, provisioning and service assurance via Eircom's OSS need to be documented by Eircom and that such documents form part of the LLRO.
- 10.161 Given the importance of Access to Eircom's OSS for Access Seekers to operate and compete in the MI WHQA market, ComReg's position is that this obligation is reasonable and proportionate.

Requirements governing fairness, reasonableness and timeliness of Access

- 10.162 As noted in Section 9, ComReg considers that Eircom has the ability and incentive to constructively refuse to supply access (including delay or other behaviours which have the effect of raising rivals' costs) to MI WHQA products, services and facilities⁸⁵³ in the Zone B MI WHQA Markets.
- 10.163 Regulation 12(3) of the Access Regulations empowers ComReg to attach to relevant access obligations, conditions covering fairness, reasonableness and timeliness.

⁸⁵⁰ Paragraph 10.301 of this Decision:

“(b) Eircom shall notify ComReg at least five working days in advance of any such publication taking place. The periods referred to in this Section may be varied with the agreement of ComReg or at ComReg's discretion”.

⁸⁵¹ I.e. any proposed changes to the LLRO and any proposed changes to Wholesale prices and the application of such prices for the purposes of notifying all interested parties of such changes.

⁸⁵² Paragraph 10.301 of this Decision:

“(a) Eircom shall (unless otherwise agreed by ComReg) publish, on its publicly available website - at least three months in advance - any proposed changes to the LLRO and any proposed changes to Wholesale prices and the application of such prices for the purposes of notifying all interested parties of such changes”

⁸⁵³ Including Related MI WHQA Elements.

SLAs

- 10.164 In the case of products, services and facilities⁸⁵⁴ in the Zone B MI WHQA Markets, Eircom is to be required to ensure that the terms and conditions for Access are governed by an SLA.
- 10.165 The purpose of the above requirement is to ensure that Access to wholesale services is provided in a fair, reasonable and timely manner, thereby promoting effective downstream competition, to the ultimate benefit of consumers.
- 10.166 To address such potential issues, ComReg is imposing the following obligations upon Eircom, requiring it:
- (a) to conclude, maintain and update legally binding, fit-for-purpose SLAs with Access Seekers for MI WHQA products, services and facilities⁸⁵⁵, in the Zone B MI WHQA Markets, which shall encourage an efficient level of performance;
 - (b) to negotiate in good faith with Access Seekers in relation to the conclusion of legally binding and fit-for-purpose SLAs (either in the case of a new SLA or an amendment to an existing SLA);
 - (c) to provide Access Seekers, at the end of the SLA Negotiation Period⁸⁵⁶, with Eircom's best and final offer ('**BAFO**') in respect of the relevant SLA which, for the avoidance of doubt, shall be fit-for-purpose; include all relevant information that is required under this paragraph (10.166) and accord with the principles set out in this paragraph (10.166). The SLA Negotiation Period ends with the closing of negotiations and the making of a BAFO by Eircom to Access Seekers with respect to the SLA. When Eircom makes its BAFO, the SLA Negotiation Period is deemed by ComReg to be concluded;
 - (d) to ensure that the SLA Negotiation Period includes a discussion on the process for suspension of an SLA and the associated terms and conditions, as described below;

⁸⁵⁴ Service Level Agreements or 'SLAs' are legally binding contracts between Eircom and Access Seekers in relation to the service levels which Eircom commits to from time to time, as more particularly set out in the LLRO.

⁸⁵⁵ Including Related MI WHQA Elements.

⁸⁵⁶ SLA Negotiation Period means the duration of time required by Eircom to close negotiations between it and Access Seekers in respect of an amended or new SLA.

- (e) to ensure that SLAs specify circumstances which trigger the payment of Service Credits⁸⁵⁷ such as a failure by Eircom to achieve committed service levels, or the occurrence of specified events (such as incidents of service outage or deterioration), or other appropriate criteria;
- (f) to ensure that SLAs specify the methodology for calculating the quantum of Service Credits and include an example calculation of Service Credits;
- (g) to ensure that circumstances which trigger the payment of Service Credits and the methodology for calculating the quantum of Service Credits, taken together, are fair and reasonable in that they adequately incentivise Eircom to deliver an efficient level of service quality and allow Access Seekers to recoup at a minimum the direct costs and any other reasonable loss of value that the Access Seekers incur as a result of the circumstances that had triggered the payment of Service Credits;
- (h) to ensure that application of Service Credits, where they occur, shall be applied automatically and in a timely and efficient manner;
- (i) to ensure that SLAs include, where appropriate, the comprehensive set of terms and conditions governing the circumstances when the SLA can be suspended, and the process to be applied for the suspension of the SLA. Such terms and conditions should be based on objectively defined and measurable parameters;
- (j) in relation to an existing product, service or facility, following a request from an Undertaking (including Eircom) for an amendment to an SLA, Eircom shall, within one (1) month of the receipt of such a request, inform the Undertaking in writing whether the request for an amendment is accepted or rejected and, if accepted, include details of the SLA Negotiation Period and the associated start date. Negotiations in respect of the amended SLA shall close, unless otherwise agreed with ComReg, within six (6) months of the date the Undertaking makes such a request. Within one (1) month of the date the Undertaking makes such a request Eircom may seek an extension to the six (6) month period from ComReg;

⁸⁵⁷ Service Credit(s) means a financial credit which is provided by Eircom to an Access Seeker where Eircom has failed to meet the service levels which Eircom commits to from time-to-time in its SLA.

- (k) in relation to an amendment to an existing product, service or facility, where Eircom itself initiates the amendment, Eircom shall, within one (1) month of the initiated amendment, inform and seek Access Seekers' views as to whether the proposed product amendment should result in an amendment to the relevant SLA;
- (l) to ensure that its obligations with respect to SLAs have been complied with prior to notifying ComReg of non-pricing amendments or changes to the Leased Line Reference ('LLRO')⁸⁵⁸ resulting from the offer of a new product or an amendment to an existing product, service or facility which falls within the scope of the Relevant Market;
- (m) to ensure that the new or amended SLA is implemented and is made available to Access Seekers by the date on which:
 - (i) any amendment or change to an existing product, service or facility comes into effect; or
 - (ii) the offer of a new product, service or facility comes into effect.
- (n) where the amended SLA does not relate to (m)(i) or (m)(ii) above, Eircom shall ensure that the amended SLA is implemented and is made available to Access Seekers within three (3) months from the end of the SLA Negotiation Period (unless otherwise agreed with ComReg); and
- (o) within six (6) months (unless otherwise agreed with ComReg) of the Effective Date of this Decision Instrument Eircom shall update its SLAs to include all relevant information and accord with the principles set out above.

10.167 In terms of justification for the above, SLAs are intended to minimise the risks of Eircom engaging in actual or constructive refusal to supply effective and efficient Access to MI WHQA products, services and facilities⁸⁵⁹, in the Zone B MI WHQA Markets. Ultimately, the SLA obligations are designed to ensure fair competition in the provision of regulated MI WHQA products, services and facilities, by allowing Access Seekers to compete on a level playing field with Eircom (and its wholesale customers) in downstream markets.

⁸⁵⁸ The LLRO is the offer of contract by Eircom to Access Seekers in relation to Leased Line (including MI WHQA product, service and facilities) as may be amended from time to time. To the extent that there is any conflict between the LLRO and Eircom's obligations now set out herein, it is the latter which shall prevail;

⁸⁵⁹ Including Related MI WHQA Elements.

- 10.168 In addition to demanding higher quality and more innovative products and services, End Users expect efficient and timely provision of services, including a high degree of reliability and effective fault management and repair. Therefore, Access Seekers are increasingly reliant on efficient delivery, service quality and after sales support from Eircom in order to be able to compete effectively in downstream markets.
- 10.169 The expected level of service both at the point of delivery and in-life performance management are key selling points which can influence an End User when coming to a decision to avail of a product/service or switch Service Provider. Therefore, for Access Seekers, the quality of SLAs which support regulated wholesale products are an extremely important component of the wholesale input and, in ComReg's view, are integral to the wholesale offering.
- 10.170 Suitable and well-crafted SLAs which support timely and efficient service provision and fault repair necessary, both at the point of sale and to ensure that the End User experiences a high standard of after sales service and support. Therefore, the SLAs that support regulated MI WHQA products, services and facilities, are very important in ensuring effective downstream competition and are necessary to ensure high quality services are offered, ultimately, to End Users⁸⁶⁰.
- 10.171 The nature of a fit-for-purpose SLA will depend on many factors, including the nature of the wholesale services provided by Eircom and the nature of the downstream retail services to be provided by Access Seekers. A fit-for-purpose SLA could be based on a commitment to achieve committed service levels, or on the occurrence of particular events such as service outages, or both. In any particular SLA, it is possible that there may also be other sorts of circumstances in which it is appropriate that Service Credits are triggered. The precise nature of a particular SLA is best settled in negotiations between Eircom and Access Seekers, with the back-up possibility of ComReg using its dispute resolution powers if Access Seekers are unwilling to accept Eircom's BAFO.
- 10.172 ComReg notes that there are certain types of SLA which could result in Service Credits being paid even by an efficient operator. An example would be an event-based SLA that provided for service credits whenever an outage occurs because even an efficient operator would expect some degree of outages to occur. Depending on the nature of the fit-for-purpose SLA, it might therefore be reasonable to include a portion of the service credits (if any) that an efficient operator would incur in any calculation of a cost-oriented price for the service in question.

⁸⁶⁰ ComReg notes that MI WHQA inputs can be used by Access Seekers to deliver a wide range of downstream services which, ultimately, are directly or indirectly used in the provision of retail services.

- 10.173 Sub-standard SLAs or delays in finalising SLAs and making them available to Access Seekers have more significant impacts on Access Seekers who are trying to grow market share and win customers from established SPs with significant market shares, such as Eircom. ComReg is of the view that as the incumbent operator with SMP in the Zone B MI WHQA Markets, Eircom does not have an incentive to provide fit-for-purpose SLAs which support the delivery of effective or high quality downstream services.
- 10.174 It is ComReg's position that, in order to conclude an SLA, Eircom must discuss and negotiate, as required, the details of a new or amended SLA with Access Seekers. After the discussions finish (including within the prescribed timelines discussed below), Eircom shall offer to Access Seekers its BAFO, which should be a fit-for-purpose SLA and in accordance with its obligations. At this point the SLA is concluded. Should Access Seekers consider that the concluded SLA is not fit-for-purpose or does not meet their requirements then they can consider options such as raising a dispute with ComReg who would then consider whether Eircom is in compliance with its regulatory obligations.
- 10.175 ComReg notes that there have been delays in concluding SLAs resulting in Eircom not introducing or amending SLAs in a timely manner⁸⁶¹.
- 10.176 In the MI WHQA market, ComReg notes that Eircom proposed a modification to the NGN Ethernet delivery SLA on 17 August 2017⁸⁶². This SLA development was notified to ComReg on 7 September 2018 – over one year later. ComReg considers that in the MI WHQA Markets there remains the potential for delays in concluding SLAs, and ComReg considers that if the proposed six (6) month timeline to conclude SLA negotiations was already an obligation in this market, it would incentivise Eircom to progress the negotiations in a timely manner and make a BAFO to Access Seekers after 6 months.
- 10.177 Therefore ComReg considers that the obligations outlined in paragraph 10.166 above are necessary to ensure that any SLA modifications are progressed in an efficient and timely manner, with Access Seekers being offered a BAFO by Eircom in a timely and predictable manner.

⁸⁶¹ Paragraph 9.146, 2018 Further Consultation.

⁸⁶² RAP ID 470 'New NGA SLA'.

- 10.178 Delays in the development and availability of suitable SLAs can have an adverse impact on competition and on End Users, as the absence of suitable SLAs ultimately lowers certainty regarding the timeliness and quality of access being provided.
- 10.179 In addition, Access Seekers have expressed concern⁸⁶³ regarding the suspension of SLAs by Eircom. Such suspensions can have a significant impact on the effectiveness of the SLA. Eircom retain the ability to suspend SLAs, however, it is not always clear as to the process or criteria applied when SLAs are suspended.
- 10.180 ComReg considers, therefore, that there is a need to refine the existing obligations imposed upon Eircom regarding the development of SLAs. ComReg's position is that more granular SLA-related obligations, in particular, relating to the timeliness of SLA developments is required.

SLA amendments for existing products

- 10.181 ComReg accepts and expects that discussions between Eircom and Access Seekers need to take place regarding the details of amended SLAs on foot of a request from an Access Seeker or where Eircom itself seeks to introduce an amendment to an SLA, including the introduction of a new SLA. In such circumstances, Eircom proposes SLAs or SLA parameters for discussion with Access Seekers. However, there is currently no specific time by which these discussions must end, and significant delays can, therefore, occur in concluding SLAs.
- 10.182 Prolonged discussions on the details of the SLA or prolonged deliberation by Eircom only serves to delay the availability of SLAs, and this is not in the best interests of Access Seekers, competition or End Users. It can also amount to an effective refusal of access. ComReg notes, however, that while discussions between Access Seekers and Eircom are necessary and expected, the responsibility for the timely development of fit-for-purpose SLAs for MI WHQA products, services or facilities⁸⁶⁴ in the Zone B MI WHQA Markets, is a matter, in the first instance, for Eircom.

⁸⁶³ ALTO Submission, pages 13-14. BT Submission Part 1, page 12.

⁸⁶⁴ Including Related MI WHQA Elements.

- 10.183 A request from an Access Seeker for an amended SLA needs to be considered by Eircom in the context of Eircom's obligation to meet reasonable request for access (as well as its other obligations). However, it is important that Eircom considers SLA access requests, and SLA amendments generally, in a fair, reasonable and timely manner. In ComReg's view, more granular obligations relating to the management of changes to and the introduction of SLAs are required in order to ensure that SLAs are concluded in an effective and timely manner.
- 10.184 ComReg's position is that the period of time required to discuss an amendment to an existing SLA with Access Seekers be proposed by Eircom at the outset, with this referred to as the SLA Negotiation Period. During the SLA Negotiation Period, Eircom must discuss and negotiate proposed SLAs in a proactive manner, and in good faith, with Access Seekers.
- 10.185 After this SLA Negotiation Period, it is ComReg's position that Eircom should make its BAFO to Access Seekers in relation to SLAs. This BAFO should be fit-for-purpose and the offer should be made by Eircom to Access Seekers within six months of a request from an Access Seeker, or within six months of when Eircom itself seeks to amend an existing SLA (or introduce a new SLA). At the point Eircom makes its BAFO, the SLA has been concluded.
- 10.186 ComReg's position is that the SLA offer, i.e. Eircom's BAFO, should be implemented and made available to Access Seekers within three months of the SLA offer being made by Eircom, unless otherwise agreed with ComReg. ComReg considers that this requirement is reasonable, as discussions with Access Seekers will have ended at that point and Eircom are required to make a BAFO which is fit-for-purpose (and in accordance with its obligations elsewhere) and, therefore, the SLA should be implemented and made available by Eircom.
- 10.187 Eircom shall, therefore, implement a fit-for-purpose SLA within three (3) months of making its BAFO to Access Seekers, unless otherwise agreed with ComReg. ComReg may, at its sole discretion, grant or refuse any request for an extension to the three (3) month period above.

New product development and changes to existing products

- 10.188 In addition to managing requests from Access Seekers for amended SLAs, it is ComReg's position that Eircom also must develop new SLAs, or amend existing SLAs where required, when Eircom is planning to introduce new products or changes to existing products. In these circumstances, in order to conclude an SLA, Eircom must initiate the SLA Negotiation Period, at the end of which Eircom must make its BAFO regarding the SLA to Access Seekers, this must happen prior to notification of the amended product or product change to ComReg in accordance with its transparency obligations (discussed in paragraphs 10.258 to 10.369).

- 10.189 ComReg has observed that the development of SLAs tends to occur after the product development process has completed. This can raise issues, as the new or amended wholesale product being introduced to the market may not have an SLA, or may include an SLA which is not fit-for-purpose.
- 10.190 This then requires the subsequent development and conclusion of a new SLA which would take place when the product is already available in the market. ComReg is of the view that such a scenario is not in the best interests of competition, Access Seekers or End Users, given that the absence of a fit-for-purpose SLA can undermine the timely and effective use of the products in question.
- 10.191 In ComReg's view, if Eircom is required to conclude an SLA before new products (including services and facilities) are notified to ComReg, then such problems can be minimised or avoided.
- 10.192 In ComReg's view, amendments to existing MI WHQA products, services and facilities⁸⁶⁵ in the Zone B MI WHQA Markets, need to be considered somewhat separately to new product developments, in particular, with respect to the associated SLAs. Not all amendments to regulated MI WHQA products, services or facilities require changes to the associated SLA. However, as Access Seekers consider that SLAs are, in general, an integral part of a MI WHQA product offering, they are likely to have a view as to whether proposed amendments to existing products, services or facilities require an associated SLA amendment.
- 10.193 Examples of such amendments include, *inter alia*, process changes, the introduction of new order types and the retirement of existing order types. Access Seekers have, for example, raised concerns that when order types are introduced, changed or replaced by Eircom, the associated SLA is not changed at the same time. This results in a delay before the SLA is amended, and therefore in such situations the new or amended order type is in use without being supported by an SLA.
- 10.194 ComReg's position is that Eircom should inform Access Seekers of the proposed amendment to the product, service or facility and discuss in advance with Access Seekers whether an amendment to an SLA is required. This includes all proposed changes to existing MI WHQA products, services and facilities⁸⁶⁶, in the Zone B MI WHQA Markets.

⁸⁶⁵ Including Related MI WHQA Elements.

⁸⁶⁶ Including Related MI WHQA Elements.

- 10.195 ComReg is of the view that should an Access Seeker request an amendment to an SLA, on foot of a proposed amendment to an existing MI WHQA product, service or facility⁸⁶⁷ in the Zone B MI WHQA Markets, then any associated new or amended SLA should be concluded before any product amendment is notified to ComReg. In addition, the new or amended SLA must be fully developed, implemented and available to Access Seekers before the new or amended product is made available in the market.
- 10.196 When a view is formed that a new or amended SLA is required, then Eircom must treat this access request in accordance with all of its obligations.

Suspension of an SLA

- 10.197 Eircom can suspend the application of SLAs under certain conditions. It is not sufficiently clear as to what these conditions are, or the process that is followed when Eircom decide to suspend an SLA. SLA suspensions, particularly where they are prolonged, can have a significant impact on the effectiveness of the underlying levels of access being provided.
- 10.198 ComReg considers that the rules and conditions giving rise to any suspension of an SLA should be a matter for discussion between Access Seekers and Eircom. It is reasonable that Access Seekers can both consider and input into any conditions, rules and the processes associated with any such suspensions. Such discussions should occur before the conclusion of negotiations on the SLA.
- 10.199 The decision to suspend an SLA should also be based on objective criteria. These criteria should be specified in the SLA, be related to the SLA parameters and be measureable. Access Seekers should have an opportunity to input into the development of these objective criteria.
- 10.200 The SLA suspension process and the objective criteria used in order to make a decision relating to any suspension of the SLA should be made available to Access Seekers and clearly set out in the SLA.
- 10.201 Discussions on the conditions that give rise to SLA suspension should be part of the discussions that lead to the conclusion of negotiations regarding the SLA.

⁸⁶⁷ Including Related MI WHQA Elements.

Failure to meet SLA committed service levels

- 10.202 The committed service levels in the SLA should be such to ensure that the wholesale services are of sufficient quality to allow Access Seekers to have access in a fair, reasonable and timely manner, thereby enabling them to compete effectively in downstream markets. A high standard of service provisioning and reliable, timely and effective fault repair are important characteristics of the provision of downstream service offerings.
- 10.203 During the sales and after-sales process, Access Seekers may make commitments to End Users, regarding the level of service that can be expected. Access Seekers therefore need certainty regarding the quality of the wholesale service provided and this can be provided for with SLAs which include committed service levels which provide certainty regarding service quality and which allow Access Seekers to make competitive retail service offerings available in downstream markets.
- 10.204 ComReg is of the view that SLAs should incentivise Eircom to provide regulated MI WHQA products, services and facilities to a standard that meets the need of Access Seekers and allows them to provide services of the required quality in downstream markets. ComReg is of the view that SLAs should include Service Credits such that they adequately incentivise Eircom to deliver an efficient level of service quality and allow Access Seekers to recoup, at a minimum, the direct costs and any other reasonable⁸⁶⁸ loss of value that the Access Seekers incur as a result of the circumstances that had triggered the payment of Service Credits.
- 10.205 SLA Service Credits should be fair and reasonable and it is reasonable that Access Seekers should not have to bear any administrative burden relating to the payment of Service Credits, as such payments arise from Eircom not meeting committed service levels. Therefore, it is ComReg's view that, when committed service levels are not met by Eircom, Service Credits should be automatically paid by Eircom to Access Seekers in a timely and efficient manner.
- 10.206 In addition, Access Seekers should understand how Service Credits are calculated in order for them to fully understand how Eircom is incentivised to provide regulated MI WHQA products, services and facilities to the required standard. This would also allow Access Seekers to be able to reconcile Service Credit payments with the requirements of the SLA and with respect to the service provided by Eircom over the relevant period.

⁸⁶⁸ See paragraphs A1.671 to A1.673 and paragraphs A1.709 of this Decision.

- 10.207 The level of Service Credits and the calculation of payments should be discussed during the SLA Negotiation Period and it is ComReg's view that the concluded SLA should explain how Service Credits are calculated and the SLA text should include the provision of an example calculation.
- 10.208 Failure by Eircom to meet SLA committed service levels can result in costs being incurred by Access Seekers resulting from increased churn or payment of compensation to End Users by way of, for example, waiving service charges. ComReg is of the view that it is reasonable that the Service Credits to be paid by Eircom to Access Seekers in the event that Eircom does not meet the committed service levels in its SLAs should be such that the Access Seekers can recover the costs demonstrated to be directly and unavoidably incurred, arising from such a failure by Eircom.

Requirement regarding Timeliness of Product Development

- 10.209 Pursuant to Regulation 12(3) of the Access Regulations, Eircom is to be subject to an obligation to develop new products, services and facilities in the Zone B MI WHQA Markets, or make changes to existing products, services and facilities in the Zone B MI WHQA Markets, in a timely manner. These obligations shall also apply to Related MI WHQA Elements. The obligations being imposed are set out in paragraphs 10.210 to 10.212 below.
- 10.210 Where a request by an Undertaking for provision of Access⁸⁶⁹ or a request by an Undertaking for provision of information, is refused or met only in part⁸⁷⁰, Eircom shall, at the time of the refusal or partial grant, provide in detail to the Undertaking and to ComReg each of the objective reasons for such refusal or partial grant. Eircom's response shall be provided in a fair, reasonable and timely manner.
- 10.211 Following a written request from an Undertaking (including a written request from Eircom itself) for Access to a new product, service or facility or a non-pricing amendment to an existing product, service or facility Eircom shall, from the date of receipt of such a written request (unless otherwise agreed with ComReg):
- (a) within three (3) working days confirm in writing to the Undertaking that has made the written request that the request has been received;

⁸⁶⁹ Including Access to those products, services and facilities described in Sections 14 and 15 of the Decision Instrument included in Annex 8 of this Decision.

⁸⁷⁰ Including any refusal or partial grant arising under paragraphs 10.211(a) /10.211(c).

- (b) within fifteen (15) working days confirm in writing to the Undertaking that has made the written request whether or not the request falls within the scope of Eircom's obligations contained in this Decision Instrument and provide a unique reference to identify the request;
- (c) within thirty (30) working days confirm in writing to the Undertaking that has made the written request whether or not the Undertaking has provided it with sufficient information to process the request including the Undertaking's view on the priority of the request relative to other written requests pertaining to the Relevant Market that have already been submitted by that Undertaking. During the thirty (30) working day period Eircom may seek clarification from the Undertaking; and
- (d) within eighty five (85) working days:

10.212 Eircom is to be required to comply with the requirements of paragraph 10.210 where Eircom concludes, on the basis of additional analysis conducted during the process of development of a product, service or facility or amendment thereto that it has agreed to provide in accordance with paragraph 10.211(c), that the Access request is no longer reasonable and, therefore, that the product, service, facility or amendment thereof requires amendment or cannot progress to completion.

10.213 A properly functioning product development process⁸⁷¹ is particularly important for ensuring the development of effective competition in downstream markets and to allow Access Seekers to plan for and provide innovative services to downstream customers, including End Users. Uncertainty with regard to the content and timing of product updates creates uncertainty in the market and can potentially lead to increased costs across the industry and to concerns regarding the availability of information to Eircom's downstream arm in advance of competing retail operators.

⁸⁷¹ The Eircom Regulated Access Product ('**RAP**') Product Development Process is a series of steps undertaken by Eircom to bring a product idea from concept through to launch.

- 10.214 ComReg is aware that there can be difficulties with respect to agreeing product specifications in a timely manner. While it is important to have a clear product specification, undue delays in this regard can serve only to prolong the time taken to complete a product development. ComReg has concerns regarding undue delays being experienced by Access Seekers at this point in the product development process, in relation to product development in other markets⁸⁷². ComReg notes that Eircom operates a single product development process for RAP developments⁸⁷³. ComReg considers that delays with respect to agreeing product specifications in a timely manner can also arise for Access Seekers in the Zone B MI WHQA Markets.
- 10.215 ComReg's view is that it is important that Access Seekers have adequate input into the prioritisation of product developments (including relative to those product developments which appear to be related to and which emanate from Eircom's downstream arm) and have clarity with respect to the criteria used by Eircom for such prioritisation.
- 10.216 ComReg is of the view that Eircom's governance of access, non-discrimination and transparency must be comprehensively applied to both proactive support for the development of product specifications and subsequent prioritisation of product developments.
- 10.217 ComReg has formed the view that due to concerns regarding the development of wholesale regulated access products ('**RAPs**') generally⁸⁷⁴, and the importance of ensuring an effective product development process in the Zone B MI WHQA Markets that specific obligations relating to the timeliness of product development should be imposed on Eircom in the Zone B MI WHQA Markets.

⁸⁷² Operational Assessment of eir's Regulatory Governance Model, Cartesian, July 2017, ComReg Document No.17/64(b) ('**Cartesian Report**'). ComReg notes that the development cases considered in the Cartesian Report relate to developments in the WPNIA, FACO and WBA markets.

⁸⁷³ As stated by Eircom in paragraph 83 of its Submission.

⁸⁷⁴ Such as those raised in Cartesian's Operational Assessment of eir's Regulatory Governance Model, Cartesian, July 2017, ComReg Document No.17/64(b) ('**Cartesian Report**'). ComReg notes that the development cases considered in the Cartesian Report relate to developments in the WPNIA, FACO and WBA markets.

- 10.218 ComReg notes that Eircom has a single product development process which is used in the development of all RAPs, across all regulated markets. ComReg considers that there is the potential for issues to arise in the Zone B MI WHQA Markets relating to the timeliness of product development. ComReg's position is that obligations should be imposed upon Eircom with respect to product development timelines. Such obligations are necessary to ensure that:
- (a) access is provided in a fair, reasonable and timely manner;
 - (b) there is efficient and timely product development; and
 - (c) there is accurate information available to Access Seekers with respect to the progress of all product developments⁸⁷⁵.
- 10.219 Transparency and certainty with respect to product developments and process changes should enable Access Seekers to more effectively plan for such changes and, where necessary, to implement consequential changes to their own systems and processes.
- 10.220 ComReg notes that the Eircom product development process is complex, needs to accommodate a number of competing priorities and relies on finite resources. As would be expected of a process of such complexity, the Eircom RAP Product Development Process uses a structured approach which contains a number of key decision gates and development stages.
- 10.221 As such, the structure of the process already lends itself to providing greater clarity to Access Seekers with respect to the product development process and the progress of developments through the process.
- 10.222 A request for access is considered to be any written request received from an Access Seeker, or indeed from Eircom's downstream arm, for a new access product or for a change to an existing access product. A product, in this instance, is taken to mean any regulated wholesale access product, service or facility or associated processes.
- 10.223 There are many sources for such access requests. A written request could, for example, take the form of the submission of a Statement of Requirements ('**SOR**')⁸⁷⁶ or Customer Requirements Document⁸⁷⁷.

⁸⁷⁵ Additionally Access Seekers will have the ability to monitor these obligations through transparency obligations set out in paragraphs 10.339 to 10.361 below.

⁸⁷⁶ SOR is a document prepared by one or more Undertakings in which the requirements of an Access request are specified.

⁸⁷⁷ An Eircom Customer Requirements Document is a template created by Eircom for capturing an Access Seeker's requirements with respect to an Access request.

- 10.224 Access requests can also emanate owing to a requirement to change an Eircom downstream product which, as a consequence, requires a modification to an upstream MI WHQA product. In other cases, an Access request may be as a result of operational or network related issues which can be remedied through product development.
- 10.225 Eircom may also need to change existing process or product features for wholesale products or develop new processes or products in order to ensure compliance with its obligations or indeed arising from the evolution of products and services.
- 10.226 ComReg notes that Eircom has a single product development process which is used in the development of all RAPs, across all regulated Markets. ComReg is, therefore, of the view that these product development obligations should not create an undue burden on Eircom, but should serve to reinforce the practical application and operation of access obligations.
- 10.227 MI WHQA services play an important role in facilitating the provision of Information and Communications Technology ('ICT') services to medium and large sized businesses, including multi-national businesses, as well as public sector institutions (e.g. hospitals, Government departments, educational facilities). MI WHQA services typically support business critical ICT services.
- 10.228 MI WHQA is a wholesale input into the ultimate provision of various retail data connectivity services for businesses, including for use in the provision of internet access, facilitating connectivity between a businesses' site locations for the purpose of transferring information and/or communications, and data back-up/remote storage solutions such as cloud stage/computing. Given that the provision of MI WHQA products, services and facilities⁸⁷⁸ in the Zone B MI WHQA Markets, allow Access Seekers to offer high value services which are of particular importance to the business community, it is ComReg's position that this obligation is necessary to ensure that Eircom engages fully with Access Seekers and develops RAPs that meet Access Seekers' requirements, in a timely and effective manner.
- 10.229 Having considered Respondents' views as summarised and assessed in paragraphs A1.711 to A1.787 in Annex A.1.10, and having regard to the analysis set out in the 2018 Further Consultation,⁸⁷⁹ ComReg has decided to maintain its view as set out in the 2018 Further Consultation with the exception of the amendments referred to in paragraphs 10.230 to 10.234 below.

⁸⁷⁸ Including Related MI WHQA Elements.

⁸⁷⁹ Paragraphs 9.133 to 9.202 of the 2018 Further Consultation.

Amendments to proposed obligations

- 10.230 The amendments referred to in paragraphs 10.230 to 10.234 below are reflected in the wording of the obligations set out in paragraphs 10.210 to 10.212 above.
- 10.231 As described in paragraph A1.753, as part of its assessment of Respondents views to its consultation on the WLA and WCA markets ComReg decided that the timelines for acknowledgement of the request for a RAP development will apply from the point in time when a written request is made by the Access Seeker.
- 10.232 As described in paragraph A1.763 (Annex A.1.10), ComReg has decided that the wording of the obligation relating to the 15 working day timeline⁸⁸⁰ would be better expressed as a requirement for Eircom to confirm whether or not the request falls within the scope of Eircom's obligations and that a regulatory obligation to confirm to the Access Seeker whether or not the request is for a new or amended product, service or facility is not required at this early stage of the product development process.
- 10.233 The obligation proposed in Section 14.3(iii)⁸⁸¹ of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation set out that Eircom or the Access Seeker, for any particular request, could seek agreement from ComReg to extend the thirty (30) working day period within which this obligation must be discharged. On further consideration, ComReg has decided that since the obligation would be on Eircom to provide the above confirmation, that a request for a derogation to meet this obligation within the thirty (30) working day period should be sought by Eircom rather than the Access Seeker

⁸⁸⁰ As set out in Section 14.3(ii) of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation.

⁸⁸¹ Section 14.3(iii) of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation states that "*within thirty (30) working days of receipt of request, confirm whether the requesting Access Seeker has provided Eircom with sufficient information to process the request (unless otherwise agreed between Eircom and the Access Seeker), including the Access Seeker's view on the priority of the request relative to other requests pertaining to the Zone B MI WHQA Markets that have already been submitted by that Access Seeker. During this thirty (30) day period Eircom may seek any clarifications that it may reasonably require from the Access Seeker regarding the request. Eircom or the Access Seeker may, for any particular request, seek agreement from ComReg that the thirty (30) working day period be extended*".

- 10.234 In addition, ComReg has also decided that, for the avoidance of doubt, the requirement for Eircom to objectively justify the reasons why a particular Access request is refused (or refused in part) at different stages of the product development process will be set out in greater detail.
- 10.235 The amended wording to take account of the changes summarised in paragraphs 10.230 to 10.234 is reflected in the obligations set out in paragraphs 10.210 to 10.212 above and are more particularly set out in the Decision Instrument in Annex 8 of this Decision⁸⁸².

10.7 Non-Discrimination Remedies

Overview

- 10.236 The application of an *ex ante* non-discrimination remedies seeks to prevent a dominant, vertically-integrated Undertaking from engaging in discriminatory (price or non-price) behaviour that could hinder the development of sustainable and effective competition in wholesale and retail markets.
- 10.237 In Section 9, ComReg identified that, absent regulation, Eircom has the ability and incentive to engage in behaviours that could adversely impact upon downstream competition and consumers in the Zone B MI WHQA Markets (and related markets). For example, Eircom could offer products, services and facilities at discriminatory prices, terms and conditions, and service/repair quality to different Access Seekers or between Access Seekers and its own downstream arm.
- 10.238 As noted in the Access Directive⁸⁸³, the principle of non-discrimination is designed to ensure that Undertakings with market power do not distort competition, in particular, where they are vertically integrated Undertakings that supply services to Undertakings with whom they compete on downstream markets.
- 10.239 Regulation 10 of the Access Regulations provides that ComReg can impose non-discrimination remedies in relation to access or interconnection on an Undertaking designated with SMP, in particular to ensure it behaves in such a way that it:

⁸⁸² The wording set out in the Decision Instrument in Annex 8 of this Decision takes account of the changes summarised in paragraphs 10.230 to 10.234 above, in addition the specific wording of Section 14.3 of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation will be reworded for greater clarity.

⁸⁸³ Recital 17 of the Access Directive.

- (a) applies equivalent conditions in equivalent circumstances to other Undertakings providing equivalent services; and
- (b) provides services and information to others under the same conditions and of the same quality as it provides for its own services or those of its subsidiaries or partners.

10.240 In this respect, non-discrimination obligations can be standalone, but can also support and/or relate to other obligations such as those relating to access, transparency and price control.

10.241 An overview of existing non-discrimination obligations is set out in paragraph 10.18 above.

Imposition of Non-Discrimination Remedies

Introduction

10.242 In paragraphs 9.205 to 9.222 of the 2018 Further Consultation ComReg outlined its views on the imposition of non-discrimination remedies upon Eircom in relation to the Zone B MI WHQA Markets.

10.243 Of the seven Respondents to the 2018 Further Consultation, five Respondents (ALTO, BT, Eircom, enet and Vodafone) expressed a view on ComReg's non-discrimination remedies for the Zone B MI WHQA Markets.

10.244 Eircom and enet agreed with ComReg's non-discrimination remedies for the MI WHQA Zone B Markets. ALTO, BT, Vodafone disagreed with ComReg's non-discrimination remedies for the Zone B MI WHQA Markets, instead seeking the non-discrimination standard of EoI to be imposed as the non-discrimination remedy.

10.245 Verizon and Zayo did not express any views.

10.246 Having regard to the analysis carried out in the 2018 Further Consultation and having assessed Respondents' views (Annex A.1.10, paragraphs A1.844 to A1.875), ComReg has maintained its position as set out in the 2018 Further Consultation. ComReg's position is to impose upon Eircom the non-discrimination obligations set out in paragraphs 10.247 to 10.257 below.

Non-Discrimination Remedies to be imposed

10.247 Pursuant to Regulation 10 of the Access Regulations, ComReg's position is to continue to impose general non-discrimination obligations on Eircom in order to address identified competition problems that could arise in the Zone B MI WHQA Markets.

10.248 In Annex A.1.10, paragraphs A1.844 to A1.855 of this Decision, ComReg summarises the main views of Respondents on the proposed non-discrimination remedies in the 2018 Further Consultation. ComReg assessed Respondents' views in Annex A.1.10, paragraphs A1.856 to A1.875. ComReg has taken this assessment into account in deciding on the obligations now being imposed.

10.249 Below, ComReg sets out the non-discrimination obligations being imposed.

General non-discrimination remedies

10.250 Eircom is to be required to:

- (a) apply equivalent conditions in equivalent circumstances to other Undertakings requesting, or being provided with Access (including Access to MI WHQA products, services and facilities⁸⁸⁴ set out in paragraph 10.66 to 10.235) or requesting or being provided with information in relation to such Access, for the Zone B MI WHQA Markets; and
- (b) provide access (including Access to MI WHQA products, services and facilities⁸⁸⁵ set out in paragraph 10.66 to 10.235) and information to all other Undertakings under the same conditions and of the same quality as Eircom provides to itself or to its subsidiaries, affiliates or partners, for the Zone B MI WHQA Markets.

10.251 For the avoidance of doubt, it is ComReg's position that the non-discrimination obligations above should apply irrespective of whether or not a specific request for services or information has been made by an Undertaking to Eircom. For example, if information or a service is provided by Eircom following a request from one Undertaking, Eircom is obliged to offer this to other Undertakings, notwithstanding that such other Undertakings have not made a request for it (or known to make a request for it). This is to ensure fair treatment of all Undertakings.

10.252 ComReg does not agree with ALTO's, BT's and Vodafone's views, summarised in Annex A.1.10, paragraphs A1.845 to A1.854, that EoI should be mandated for MI WHQA products and services for the reasons outlined in Annex A.1.10 paragraphs A1.860 to A1.866.

⁸⁸⁴ Including Related MI WHQA Elements.

⁸⁸⁵ Including Related MI WHQA Elements.

10.253 These obligations are intended to ensure that Eircom does not favour its downstream arm, or unduly favour any particular Access Seeker in the provision of MI WHQA products, services and facilities⁸⁸⁶ for the Zone B MI WHQA Markets, such that it might otherwise restrict or distort competition in this market or any downstream or adjacent market, ultimately impacting on the development of sustainable retail competition.

Specification of the non-discrimination standards with respect to the provision of Zone B MI WHQA Markets

10.254 Pursuant to Regulation 10 of the Access Regulations, ComReg's position is that the non-discrimination obligations should be applied on, at least, an Equivalence of Outputs ('EoO')⁸⁸⁷ standards basis. When Eircom provides Access Seekers with Access to MI WHQA products, services and facilities⁸⁸⁸ in the Zone B MI WHQA Markets, including Access to information, Eircom are required to do so in a manner which achieves the same standards in terms of functionality, price, terms and conditions, service and quality levels as Eircom provides to itself⁸⁸⁹ for the purposes of providing products, services and facilities in the Zone B MI WHQA Markets, albeit potentially using different systems and processes.

10.255 ComReg considers that this EoO standard is appropriate in the context of MI WHQA products, services and facilities⁸⁹⁰ in the Zone B MI WHQA Markets, particularly given that:

⁸⁸⁶ Including Related MI WHQA Elements.

⁸⁸⁷ Equivalence of Outputs ('EoO') essentially refers to provision of products, services, facilities, and information by an SMP Undertaking to Access Seekers such that such products, services, facilities, and information is provided to Access Seekers in a manner which achieves the same standards in terms of functionality, price, terms and conditions, service and quality levels as the SMP Undertaking provides to itself, albeit potentially using different systems and processes.

⁸⁸⁸ Including Related MI WHQA Elements.

⁸⁸⁹ Or to its subsidiaries, affiliates or partners.

⁸⁹⁰ Including Related MI WHQA Elements.

- (a) the MI WHQA NGN Ethernet service is the largest (by volume⁸⁹¹) MI WHQA RAP data product set consumed by Access Seekers. These services are ‘layer 2’ services, comprising of physical⁸⁹² and logical circuits⁸⁹³. Access Seekers purchase wholesale MI WHQA NGN Ethernet ‘layer 2’ services and develop and launch their own ‘layer 3’ services; and
- (b) the MI WHQA NGN Ethernet service is the largest (by volume⁸⁹⁴) MI WHQA data product set consumed by Eircom’s own downstream retail arm. These services are exclusively ‘layer 3’ services, comprising of physical⁸⁹⁵ and logical circuits⁸⁹⁶. Hence, Eircom’s downstream retail arm do not consume WEIL, WSEA or WES services.

10.256 ComReg considers that adopting an Equivalence of Inputs (‘**Eol**’)⁸⁹⁷ standard would not be proportionate at this time. In particular, the OSS (i.e. wholesale and retail OSS) for the provision and repair of Eircom’s suite of existing MI WHQA/HQA products, services and facilities in the Zone B MI WHQA Markets have already been developed. These OSS (i.e. wholesale and/or retail OSS) would likely require substantial investment in order to upgrade or replace them to meet an Eol standard. In ComReg’s opinion, this would not be justifiable or proportionate in the circumstances of the Zone B MI WHQA Markets as it would likely involve costly systems re-development, the incremental benefits of which would not likely be substantial.

⁸⁹¹ [redacted] wholesale NGN Ethernet lines, Q3 2018 Eircom leased line data submitted to ComReg.

⁸⁹² Access circuits known as WSEAs and Interconnection circuits known as WEILs.

⁸⁹³ Logical circuit known as a Wholesale Ethernet Service (‘**WES**’).

⁸⁹⁴ [redacted] eir Retail NGN Ethernet lines, Q3 2018 Eircom leased line data submitted to ComReg.

⁸⁹⁵ Eircom Retail physical circuit is known as a [redacted] Source: *Eircom’s NGN Ethernet Statement of Compliance June 2014*. This Eircom Retail physical circuit operates as both an access and interconnection circuit.

⁸⁹⁶ Six logical circuits types: [redacted]
[redacted] Source: *Eircom’s NGN Ethernet Statement of Compliance June 2014*.

⁸⁹⁷ Equivalence of Inputs (‘**Eol**’) essentially refers to provision of products, services, facilities, and information by an SMP Undertaking to Access Seekers such that such products, services, facilities, and information is provided to Access Seekers in a manner which achieves the same standards in terms of functionality, price, terms and conditions, service and quality levels as the SMP Undertaking provides to itself, and using the same systems and processes.

10.257 ComReg anticipates, that the EoO standard could be adopted in the Zone B MI WHQA Markets without a significant additional cost burden being placed on Eircom, while at the same time addressing potential discriminatory concerns in a proportionate manner.

10.8 Transparency Remedies

Overview

10.258 Regulation 9 of the Access Regulations provides that ComReg may, *inter alia*, specify obligations to ensure transparency in relation to access or interconnection requiring an SMP Undertaking to make public specified information such as accounting information, technical specifications, network characteristics, prices, and terms and conditions for supply and use, including any conditions limiting Access to or use of services and applications where such conditions are permitted by law.

10.259 Transparency obligations can be standalone, but can also support other obligations being imposed and usually relate to requirements to make specified information publicly available.

10.260 An overview of existing transparency obligations is set out in paragraph 10.19 to 10.21 above.

10.261 In Annex A.1.10, paragraphs A1.876 to A1.983 of this Decision, ComReg summarises the main views of Respondents on the proposed transparency remedies in the 2018 Further Consultation, followed by ComReg's assessment of Respondents' views. ComReg has taken its assessment into account in deciding on the obligations to be imposed.

10.262 Below, ComReg sets out the transparency obligations to be imposed.

Introduction

10.263 In paragraphs 9.223 and 9.306 of the 2018 Further Consultation, ComReg outlined its views on the imposition of transparency remedies upon Eircom in the Zone B MI WHQA Markets.

10.264 In Annex A.1.10 paragraphs A1.876 to A1.983 of this Decision, ComReg summarises the main views of Respondents on the transparency obligations that were proposed in the 2018 Further Consultation, followed by ComReg's assessment of Respondents' views.

10.265 Of the 7 Respondents to the 2018 Further Consultation, 6 expressed views on issues relating to the proposed transparency remedies as set out in the 2018 Further Consultation (namely ALTO, BT, Eircom, enet, Verizon and Vodafone).

10.266 Four Respondents (ALTO, BT, enet and Vodafone) broadly agreed with ComReg's proposal^{898 899 900 901}. While Eircom agreed with the principle of transparency, it disagreed with certain aspects of ComReg's proposal⁹⁰².

10.267 Zayo did not express any views.

10.268 Respondents' views on the transparency remedies are grouped into the following themes:

- (a) Obligation to publish and maintain LLRO and LLRO Price list for the products in scope (summarised in paragraphs A1.879 to A1.886 of Annex A.1.10);
- (b) Obligation to publish changes to the LLRO and wholesale prices, in advance of their coming into effect, and to notify ComReg in advance of publication (summarised in paragraphs A1.896 to A1.898 Annex A.1.10);
- (c) Obligation to publish KPIs (summarised in paragraphs A1.901 to A1.907 Annex A.1.10);
- (d) Requirements governing sharing of confidential and/or commercial information through a non-disclosure agreement (summarised in paragraph A1.925 of Annex A.1.10);
- (e) Requirements with respect to transparency of product development (summarised in paragraphs A1.927 to A1.937 of Annex A.1.10);
- (f) Requirement with respect to the provision of information concerning network roll out plans (summarised in paragraph A1.968 of Annex A.1.10);
- (g) Notification of changes to Data Contract (summarised in paragraphs A1.970 to A1.973 of Annex A.1.10); and
- (h) Information as to whether or not a customer's premise falls in the relevant Zones (summarised in paragraphs A1.977 to A1.978 of Annex A.1.10).

⁸⁹⁸ ALTO Submission, page 15.

⁸⁹⁹ BT Submission Part 1, page 14.

⁹⁰⁰ enet Submission, page 19.

⁹⁰¹ Vodafone Submission, page 11.

⁹⁰² Eircom Submission, paragraphs 102-111.

10.269 Having regard to the analysis carried out in the 2018 Further Consultation and having assessed Respondents' views (see Annex A.1.10, paragraphs A1.876 to A1.983), ComReg has in general maintained its position as set out in the 2018 Further Consultation. In certain cases ComReg has decided to amend the proposed obligations, such amendments are discussed in paragraphs 10.285 to 10.287, 10.297 to 10.298, 10.321 to 10.322 and 10.352 to 10.359 below. ComReg's position is to impose upon Eircom the transparency obligations set out paragraphs 10.277 to 10.368. As described in the paragraphs below ComReg has decided to amend a number of transparency obligations proposed in the 2018 Further Consultation, such amendments are summarised in paragraphs 10.285 to 10.287, 10.297 to 10.298, 10.321 to 10.322 and 10.352 to 10.359 below. The transparency obligations set out paragraphs 10.277 to 10.368 below reflect these amendments.

Transparency Remedies to be imposed

10.270 In Section 9 of this Decision, ComReg identified that Eircom has the ability and incentive to engage in a range of exploitative and exclusionary behaviours, which can impact adversely on competition and consumers.

10.271 A transparency obligation in respect of the Zone B MI WHQA Markets is considered necessary in order to monitor and ensure the effectiveness of any access obligations, non-discrimination obligations, and other obligations such as price control. These obligations shall also apply to Related MI WHQA Elements.

10.272 Apart from the above, as noted in the Access Directive⁹⁰³, transparency of terms and conditions for Access and Interconnection, including prices, also serve to speed-up negotiations between Undertakings, avoid disputes and give confidence to market players that a service is not being provided on discriminatory terms. Openness and transparency of technical interfaces can also be particularly important in ensuring interoperability. Transparency on prices (and changes to them) is also likely to provide the necessary clarity to Access Seekers in order that they can consider impacts on the structure or level of retail prices. Transparency also provides the means for Eircom to demonstrate that Access to regulated MI WHQA products, services and facilities is being provided in a non-discriminatory manner.

⁹⁰³ Recital 16 of the Access Directive.

- 10.273 ComReg's position is that Eircom shall be required to comply with a range of transparency obligations in order to minimise information asymmetries and facilitate effective Access to MI WHQA products, services and facilities⁹⁰⁴ in the Zone B MI WHQA Markets and to ultimately promote effective competition in downstream and related markets.
- 10.274 ComReg's position is that Eircom shall be required, as specified by ComReg in writing from time to time, to make public on its publicly available wholesale website, information that may be reasonably requested by ComReg that is relevant to the provision of regulated MI WHQA products, services and facilities such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices.
- 10.275 Table 15 summarises the main transparency obligations to be imposed in this Decision. As a result of this market review, existing obligations have been updated⁹⁰⁵ as appropriate, and some new obligations are being introduced⁹⁰⁶.

Table 15: Summary of main transparency obligations to be imposed

Transparency Obligations	Obligation	
	Existing	New
Requirements concerning LLRO and price changes	Yes	
Requirements governing LLRO change management	Yes	
Advance notification timeframes for LLRO and price changes	Yes	
Requirements on wholesale billing	Yes	
Requirements regarding KPIs	Yes	
Requirements regarding SLAs	Yes	
SLA: Best and Final Offer (BAFO) and other related transparency requirements		Yes
Requirement to facilitate the legitimate sharing of confidential and/or commercial information through a non-disclosure agreement	Yes	
Requirement with respect to Product Development		Yes
Requirement with respect to network roll out	Yes	

- 10.276 The obligations being imposed are discussed in more detail below.

⁹⁰⁴ Including Related MI WHQA Elements.

⁹⁰⁵ In the 2018 Further Consultation and/or based on the analysis in this Decision.

⁹⁰⁶ As outlined in the 2018 Further Consultation and/or based on the analysis in this Decision.

Transparency requirements concerning LLRO

- 10.277 The key purpose of the LLRO is to provide current or potential Access Seekers with all relevant information about the MI WHQA products, services and facilities⁹⁰⁷ in the Zone B MI WHQA Markets, that are, or are intended to be, provided by Eircom. ComReg's position is that the following obligations shall be imposed on Eircom with respect to Eircom's LLRO.
- 10.278 Pursuant to Regulation 9(2) of the Access Regulations, Eircom shall make publicly available and keep updated on its website, a LLRO and an associated Price List.
- 10.279 The LLRO shall be sufficiently unbundled so as to ensure that Undertakings availing of Access (including Access to those products, services and facilities described in Section 14 of the Decision Instrument contained in Annex 8) are not required to pay for products, services or facilities which are not necessary for the Access requested.
- 10.280 More specifically, ComReg's position is that the LLRO should include at least the following items:
- (a) A description of the offer of contract for access broken down into components according to market needs;
 - (b) A description of any associated contractual or other terms and conditions for supply of access and use, including prices (the latter being a 'LLRO Price List');
 - (c) A description of the technical specifications and network characteristics of the access being offered;
 - (d) The terms, conditions, service level agreements, guarantees and other product related assurances associated for MI WHQA products, services and facilities⁹⁰⁸ in the Zone B MI WHQA Markets; and
 - (e) at least the elements set out in Sections B, C and D of the Schedule to the Access Regulations.

⁹⁰⁷ Including Related MI WHQA Elements.

⁹⁰⁸ Including Related MI WHQA Elements.

- 10.281 Eircom shall notify the updated LLRO to include information relating to any amendment to an existing obligation or new obligation imposed in this Decision (and other relevant documentation pertaining to the amended/new obligation) to ComReg within six (6) months of the Effective Date of this Decision. The revised LLRO shall be published by Eircom one week after this notification. The updated LLRO will then become effective three months after this date, i.e., within nine (9) months and one (1) week of the Effective Date of this Decision. These periods may be varied with the agreement of ComReg or at ComReg's discretion.
- 10.282 For the avoidance of doubt and in order to provide certainty to Eircom on what documents need to be notified to ComReg and published to industry in advance of such documents becoming effective, ComReg clarifies here its position on what documents are included in the LLRO. ComReg's position is that the LLRO includes the documents which are expressly referred to as being part of the LLRO and any associated or subordinate documents relied upon to meet Eircom's obligations as set out in this Decision, including but not limited to product descriptions, industry process manuals, service level agreements, unified gateway interface guidelines, unified gateway data contract ("UG Data Contract") and associated licence documentation.
- 10.283 Overall, the obligations are largely consistent with existing obligations which ComReg considers are not unduly burdensome and are required for the efficient and effective operation of the market.
- 10.284 With the exception of the amendments referred to in paragraphs 10.297 to 10.298 below, ComReg considers that the format of the LLRO and the price list should be based on the versions that are currently published⁹⁰⁹ on Eircom's wholesale website.

⁹⁰⁹ The current version of Eircom's LLRO at <http://www.Eircomwholesale.ie/Reference-Offers/LLRO/> version 3.0, dated 1 July 2019.

Amendments to proposed obligations

- 10.285 ComReg has further considered the timeline by which Eircom needs to update the LLRO following the Effective Date of this Decision. ComReg has decided that for the purposes of clarity and certainty, the wording of the Decision Instrument shall be amended to describe that Eircom shall notify the updated LLRO to include information relating to any amendment to an existing obligation or new obligation imposed in this Decision (and other relevant documentation pertaining to the amended/new obligation) to ComReg within six (6) months of the Effective Date of this Decision. The revised LLRO shall be published by Eircom one week after this notification. The updated LLRO will then become effective three months after this date, i.e., within nine (9) months and one (1) week of the Effective Date of this Decision. These periods may be varied with the agreement of ComReg or at ComReg's discretion.
- 10.286 In addition to the above, ComReg has also further considered the list of minimum elements that Eircom must ensure are included in the LLRO⁹¹⁰. For the avoidance of doubt, ComReg has decided to explicitly set out a requirement for Eircom to also include in the LLRO at least the elements set out in the Schedule to the Access Regulations⁹¹¹.
- 10.287 The transparency requirements concerning LLRO and price changes are more particularly set out in Section 17 of the Decision Instrument.

Transparency requirements governing LLRO change management

- 10.288 ComReg's position is to impose various transparency requirements governing change management of the LLRO and its associated elements/documentation in order to enable Access Seekers to have visibility of any changes to be made or made to the LLRO over time. This will also support monitoring and enforcement of compliance with SMP obligations.
- 10.289 In this respect, ComReg's position is that Eircom is required to:
- (a) continue to publish and keep updated on its publicly available website, its LLRO in the same form and format as version V3.0, dated 1 July 2019, including a searchable version, as may be amended from time to time, insofar as those products, services or facilities contained therein relate to the obligations set out in this Decision;

⁹¹⁰ As set out in Section 10.4 of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation.

⁹¹¹ As set out in paragraph 10.280(e) above.

- (b) publish and keep updated on its publicly available website both clean (or unmarked) and tracked changed (or marked) versions of its LLRO. The tracked change version of the LLRO must also be sufficiently clear to allow Access Seekers to clearly identify all actual and proposed amendments to regulated products from the preceding version of its LLRO;
- (c) publish and keep updated on its publicly available website an accompanying LLRO change matrix which lists all of the amendments incorporated to regulated products or to be incorporated in any amended LLRO (the '**LLRO Change Matrix**');
- (d) publish and keep updated on its publicly available website both clean (unmarked) and tracked changed (marked) versions of the LLRO Price List(s) for MI WHQA products^{912 913} in the Zone B MI WHQA Markets. The tracked change version of the LLRO Price List must also be sufficiently clear to allow Access Seekers to clearly identify all actual and proposed amendments from the preceding version of its LLRO Price List of regulated products. The tracked change (or marked) version of the LLRO Price List will state the proposed or effective prices as well as the previous most recent prices;
- (e) publish and keep updated on its publicly available website a LLRO Price List change matrix, which lists all of the amendments incorporated to regulated products or to be incorporated in any amended LLRO Price List (the '**Price List Change Matrix**');
- (f) maintain and make publicly available on its wholesale website a copy of historic versions of its LLRO, LLRO Price List, LLRO Change Matrix and LLRO Price List Change; and
- (g) Eircom shall state its effective and historical charges in separate LLRO documents.

⁹¹² Including the effective and historical charges published in separate LLRO documents.

⁹¹³ Including Related MI WHQA Elements.

- 10.290 Eircom shall, as specified by ComReg in writing from time-to-time, make publicly available on its wholesale website, information such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices, in respect of the products, services and facilities subject to access obligations and obligations with respect to conditions attached to such access obligations as set out in this Decision.
- 10.291 ComReg considers it important that both it and Access Seekers have visibility over the non-pricing and pricing terms and conditions associated with Eircom's MI WHQA products, services and facilities⁹¹⁴ in the Zone B MI WHQA Markets, thereby supporting the effective monitoring and enforcement of Eircom's access, non-discrimination, pricing and other obligations and enabling Access Seekers to make purchasing decisions in a timely manner.
- 10.292 In paragraphs A1.888 to A1.891, ComReg considered Vodafone's suggestion that Eircom should be obliged to publish all current prices in a document or spreadsheet which is separate from the historic records of price changes.
- 10.293 As described in paragraph A1.890, ComReg considers that while the historical information relating to the effective 'to' and 'from' dates for the application of charges still needs to be made available to Access Seekers, the current inclusion of this information in the various tables in the LLRO Price List document detracts from the clarity and ease of use of such tables. In ComReg's opinion, such historical information would be more appropriately published in a separate LLRO document(s) from that of the LLRO Price List.

⁹¹⁴ Including Related MI WHQA Elements.

- 10.294 ComReg has therefore decided to further define the transparency obligation, proposed in the 2018 Further Consultation⁹¹⁵, so that such an obligation will be imposed on Eircom. ComReg considers that this obligation is justified so that effective and historical prices are clearly presented to Access Seekers. In addition, ComReg considers that it is proportionate to impose this obligation as it is a disaggregation of existing information rather than an activity that will require development or be resource intensive. ComReg has therefore decided that, in accordance with Regulation 9(4) of the Access Regulations, an obligation shall be imposed on Eircom to state its effective and historical charges in separate LLRO documents.
- 10.295 For the avoidance of doubt, Eircom will also need to publish a tracked change (or marked) version of the LLRO Price List⁹¹⁶ that will state the proposed or effective prices as well as the previous most recent prices. This will provide Access Seekers with an immediate basis of comparison for new prices.
- 10.296 For the avoidance of doubt, the obligations set out above apply irrespective of whether or not a specific request for products, services, facilities or information has been made by an Access Seeker to Eircom.

Amendments to proposed obligations

- 10.297 As described in paragraph 10.294, ComReg has decided to further define the transparency obligation, proposed in the 2018 Further Consultation⁹¹⁷, so that Eircom will state its effective and historical charges in separate LLRO documents.
- 10.298 Eircom will also need to publish a tracked change (or marked) version of the LLRO Price List⁹¹⁸ that will state the proposed or effective prices as well as the previous most recent prices.
- 10.299 The transparency requirements with respect to LLRO change management are more particularly set out in Section 17 of the Decision Instrument.

⁹¹⁵ As set out in Section 17.6(iv) of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation.

⁹¹⁶ As set out in paragraph 10.289(d) below.

⁹¹⁷ As set out in Section 17.6(iv) of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation.

⁹¹⁸ As set out in paragraph 10.289(d) below.

Advance notification timeframes for LLRO and price changes

- 10.300 ComReg's position is to impose obligations upon Eircom to provide advance notification of proposed amendments or changes to the LLRO and related prices according to specified timeframes. This is to provide sufficient notification to Access Seekers to allow them to factor in such proposed changes into the commercial decision making activities and to make any necessary adjustments or developments to billing or other systems, as appropriate. These advance notification requirements also provide a transparent and available mechanism according to which ComReg can monitor compliance by Eircom with its access, non-discrimination, pricing and other obligations detailed in this Decision.
- 10.301 ComReg's position is that Eircom shall be subject to the following obligations with respect to changes to the LLRO and the LLRO Price List:
- (a) Eircom shall (unless otherwise agreed by ComReg) publish, on its publicly available website - at least three months in advance - any proposed changes to the LLRO and any proposed changes to Wholesale prices and the application of such prices for the purposes of notifying all interested parties of such changes⁹¹⁹; and
 - (b) Eircom shall notify ComReg at least five working days in advance of any such publication taking place. The periods referred to in this Section may be varied with the agreement of ComReg or at ComReg's discretion.
- 10.302 The above transparency requirements require Eircom to notify ComReg in the event of material changes to the LLRO or changes to prices. However, it should be noted that this notification does not include an approvals process. For the avoidance of doubt, in relation to existing contracts, text changes proposed by Eircom, arising from the text change process as detailed above, apply to Eircom's obligations only and are not automatically incorporated into existing contracts, as changes to Access Seeker contractual obligations. Eircom may negotiate with Access Seekers regarding any such changes.

⁹¹⁹ With respect to changes to prices, SLAs, changes resulting from an Access request for a new or amended product, service or facility or a development for a new or amended product, service or facility initiated by Eircom.

10.303 The transparency requirements with respect to advance notification timeframes for LLRO and price changes are more particularly set out in Section 17 of the Decision Instrument.

Transparency requirements on wholesale billing

10.304 ComReg requires Eircom to provide transparency in its billing charges for MI WHQA products, services and facilities⁹²⁰ in the Zone B MI WHQA Markets, to its wholesale customers, and to ensure that its wholesale invoices for such are sufficiently disaggregated, detailed and clearly presented so that an Access Seeker can reconcile the invoice to Eircom's LLRO and LLRO Price Lists.

10.305 This should ensure that Access Seekers have the clear ability to monitor the wholesale charges being levied on them and facilitate an auditable means of detecting any billing anomalies and/or non-compliance with regulatory obligations. Eircom should therefore, continue in its LLRO, the requirement to invoice Access Seekers on a monthly basis, one month in advance of provision of the service with the credit terms remaining at 30 calendar days.

10.306 The transparency requirements with respect to wholesale billing are more particularly set out in Section 17 of the Decision Instrument.

Transparency requirements regarding KPIs

10.307 In the context of non-discrimination remedies discussed in paragraphs 10.236 to 10.257 above, KPIs can support the monitoring of non-discrimination obligations and, in so doing, provide assurances to Access Seekers regarding the levels of service provided by Eircom to its downstream arm relative to that provided to Access Seekers.

10.308 ComReg also considers that published SLAs are an important aspect of regulated MI WHQA products as SLAs provide Access Seekers with information regarding the expected performance of the product and allows a comparison to be made between actual performance and the commitments made by Eircom regarding the performance of the product.

⁹²⁰ Including Related MI WHQA Elements.

- 10.309 ComReg has therefore decided to require Eircom to continue to publish KPIs and SLAs. The requirements regarding KPIs were specified in the 2011 KPI Decision which specified a range of Metrics for various categories of LLs against which Eircom would report. KPIs are defined as a measure(s) of the standard(s) of MI WHQA products and services⁹²¹ in the Zone B MI WHQA Markets, provided by Eircom to Access Seekers and by Eircom to itself through self-supply. ComReg's position is that Eircom will publish metrics for MI HQA/WHQA and the 2011 KPI Decision will be amended accordingly as outlined in Section 17 of the Decision Instrument. More generally, it is ComReg's position that KPIs should provide a summary guide to the relative standards of common or equivalent inputs consumed by Access Seekers through Eircom's wholesale products and by Eircom itself through self-supply.
- 10.310 It is ComReg's position that if Access Seekers have concerns that Eircom's self-supply of wholesale inputs is to a higher standard than the regulated wholesale inputs offered to Access Seekers this may potentially undermine competition. The KPIs are intended to provide objective measures of the most important aspects of the wholesale products and services provided by Eircom.
- 10.311 ComReg considers that Access Seekers should be reassured that the quality of upstream inputs provided to Access Seekers for the provision of retail (and other) services are comparable with upstream inputs used in the provision of Eircom's own services. Therefore, the publication of wholesale performance statistics in isolation would not, on its own, demonstrate and make transparent compliance with non-discrimination obligations in a particular market.
- 10.312 ComReg's position is that the publication of KPIs, for both wholesale and equivalent retail services, is vital in order to facilitate transparency on information on the relative quality of wholesale and retail services and, in turn be supportive of non-discrimination and access obligations.
- 10.313 The obligation to publish KPIs falls within the context of Eircom's transparency obligations in the relevant markets. This enhanced transparency would be intended to demonstrate the degree to which common or equivalent inputs are supplied in accordance with Eircom's obligations of non-discrimination.
- 10.314 As an example of the scope and purpose of KPIs, the "Revised 2012 BEREC Common Position"⁹²² notes that an:

⁹²¹ Including Related MI WHQA Elements.

⁹²² Revised BEREC Common Position on best practices in remedies as a consequence of a SMP position in the relevant markets for wholesale leased lines, BoR (12) 126, page 12.

“NRAs should impose a generic requirement on SMP operators to provide Key Performance Indicators (KPIs) as a means to monitor compliance with a non-discrimination obligation and ensure that SMP operators fulfil their SLAs”

- 10.315 ComReg, in accordance with Regulations 8, 9 and 18 of the Access Regulations, further specifies requirements to be complied with in relation to Eircom’s transparency obligations, to direct Eircom to publish the relevant KPIs for the MI HQA/WHQA Market. ComReg is not setting any KPI targets as part of this Decision.
- 10.316 Pursuant to Regulation 9(3) of the Access Regulations, ComReg also notes that it may issue directions requiring Eircom to make changes or amendments to its SLAs, the LLRO (and its associated documents), LLRO Price List, LLRO Change Matrix or LLRO Price List Change Matrix to give effect to obligations imposed by this Decision Instrument and to publish such documents with such changes. In accordance with Regulation 18 of the Access Regulations, ComReg may also issue directions to Eircom from time-to-time requiring it to publish information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use and prices.
- 10.317 Eircom currently publish its Leased Line (MI WHQA) quarterly KPI report⁹²³ with the following classification:
- (a) Table 6: Terminating Segments of Leased Lines (NGN Ethernet Supply) KPIs;
 - (b) Table 8: Terminating Segments of Leased Lines (NGN Ethernet Order Designation) KPIs; and
 - (c) Table 9: Terminating Segments of Leased Lines (Fault Repair) KPIs [9.1 Leased Line; 9.2. NGN Ethernet];
- 10.318 ComReg’s position is that Eircom publish its Leased Line (WHQA) quarterly KPI report with the following classifications, as outlined in Section 17 of the Decision Instrument (Annex 8). These classifications replace those referred to in paragraph 10.317 above.
- (a) Table 5: Supply of Zone B MI HQA/WHQA Access Services KPIs⁹²⁴;

⁹²³ <http://www.openeir.ie/kpis/>.

⁹²⁴ In the 2018 Further Consultation, Zone A was documented in error. The correct definition was included in ‘Table 5 Definitions’ in Section 17.12 of the Draft Decision Instrument of the 2018 Further Consultation.

- (b) Table 6: Order Designation of Zone B MI HQA/WHQA Access Services KPIs⁹²⁵;
- (c) Table 7: Repair of HQA/WHQA services⁹²⁶;
- (d) Table 8: Supply of Retail MI HQA Services versus MI WHQA Interconnection Services KPIs⁹²⁷;
- (e) Table 9: Order Designation of Retail MI HQA Services versus MI WHQA Interconnection Services KPIs.

10.319 Eircom is also to be required to publish KPIs on its publicly available wholesale website. The specification of the content of the KPIs shall be in accordance with the obligations set out in the 2011 KPI Decision (as may be amended from time to time) and as amended via this Decision. Pursuant to Regulations 8, 9 and 18 of the Access Regulations, the Sections of Annex 4 of the Decision Instrument contained in the 2011 KPI Decision titled “Metrics associated with Supply of Services”, “Metrics associated with Designation of Service Orders” and “Metrics associated with Repair of Services” are to be withdrawn and replaced as outlined in Section 17 (and 26) of the Decision Instrument.

10.320 Pursuant to Regulations 8, 9 and 18 of the Access Regulations, Tables 5, 6, 7, 8 and 9 of Appendix 2 of the Decision Instrument contained in the 2011 KPI Decision will also be withdrawn and replaced with tables 5, 6, 7, 8, and 9 as outlined in Section 17 (and 26) the Decision Instrument.

⁹²⁵ In the 2018 Further Consultation, Zone A was documented in error. The correct definition was included in ‘Table 6 Definitions’ in Section 17.12 of the Draft Decision Instrument of the 2018 Further Consultation.

⁹²⁶ In the 2018 Further Consultation, Zone A was documented in error. The correct definition was included in ‘Table 7’ in Section 17.13 of the Draft Decision Instrument of the 2018 Further Consultation.

⁹²⁷ A MI LL for retail customers is classified as both Access and Interconnection.

Amendments to proposed obligations

- 10.321 ComReg has further considered the timeline by which Eircom needs to provide the KPIs arising as a result of this Decision and the timeline by which it must continue to provide the KPIs set out in the 2011 KPI Decision. ComReg has decided that KPIs as summarised in paragraphs 10.307 to 10.320 above must be provided to Access Seekers within 12 months of the Effective Date of this Decision, unless otherwise agreed with ComReg. Eircom shall comply with its obligations to provide the KPIs as set out in the Sections of Annex 4 of the Decision Instrument contained in the KPI Decision titled “Metrics associated with Supply of Services”, “Metrics associated with Designation of Service Orders” and “Metrics associated with Repair of Services” for a period of 12 months following the Effective Date of this Decision, unless otherwise agreed with ComReg.
- 10.322 Having considered Eircom’s views (paragraph A1.905 below), ComReg has amended the obligation on Eircom to publish KPIs relating to MI WHQA Interconnection in Zone A MI WHQA Markets. The amended obligation requires Eircom to publish KPIs at a wholesale level in Zone A in respect to interconnection, which interconnection supports MI WHQA products/services terminating in the Zone B MI WHQA Markets. Eircom is not required to publish KPIs with respect to retail performance in Zone A. Absent KPIs relating to regulated MI WHQA Interconnection in Zone A MI WHQA Markets, it would not be possible for ComReg to monitor Eircom’s compliance with its non-discrimination obligation in respect of the supply, designation and repair of regulated MI WHQA Interconnection Services.
- 10.323 The transparency requirements with respect to KPIs are more particularly set out in Section 17 of the Decision Instrument (Annex 8).

Transparency requirements regarding SLAs

- 10.324 Eircom shall also make publicly available on its wholesale website all SLAs (and any updates thereto) relating to the provision of the products, services and facilities that are to be provided in accordance with Sections 15 and 17 of this Decision Instrument (Annex 8).

- 10.325 As noted above in the context of Access obligations, given the requirement to include committed service levels within SLAs, Eircom is to be required, on a quarterly basis⁹²⁸, to publish on its publicly available wholesale website, a report that evidences actual performance achieved in respect of all Undertakings on an aggregate basis in comparison to the committed service levels contained in the relevant SLA for MI WHQA products, services and facilities⁹²⁹ in the Zone B MI WHQA Markets. Eircom is also to be required to include in the report the methodology and a description of the source data used to determine the actual performance achieved. The report is also to describe how the source data was processed by Eircom and include worked examples as to how the processed source data relates to the actual performance achieved.
- 10.326 Committed service levels form a key part of the SLAs offered by Eircom as they set out the target performance levels that Eircom commits to achieve across a range of process points for the products in question. ComReg has therefore imposed a specific transparency obligation to be applied to the publication of Eircom's performance with respect to the committed service levels set out in its SLAs. This will provide an Access Seeker with sufficient information to allow it to compare the level of service they are receiving from Eircom, with respect to the committed service levels in the relevant SLAs, in comparison to the aggregate performance experienced across the industry.
- 10.327 Where Eircom considers certain aspects of information to be provided under the obligations set out in Section 17 of the Decision Instrument contained in Annex 8 to be of a confidential and/or commercially sensitive nature, Eircom shall follow the requirements as set out in paragraphs 10.333 to 10.335 below.
- 10.328 ComReg's position is that the requirements with respect to the KPI and SLA obligations are justified so as to provides confidence to Access Seekers that Eircom's performance in the supply of MI WHQA products, services and facilities⁹³⁰ in the Zone B MI WHQA Markets will be measured against relevant performance indicators in a transparent way and therefore supports the non-discrimination and access obligations.

⁹²⁸ Showing the monthly performance for the previous three months,

⁹²⁹ Including Related MI WHQA Elements.

⁹³⁰ Including Related MI WHQA Elements.

- 10.329 ComReg's position is that the requirements with respect to the KPI and SLA obligations are the minimum set of requirements necessary to avoid potential competition problems associated with Access Seekers' confidence in Eircom's performance in the supply of MI WHQA products, services and facilities⁹³¹ in the Zone B MI WHQA Markets relative to its own self supply.
- 10.330 The transparency requirements with respect SLAs are more particularly set out in Section 17 of the Decision Instrument (Annex 8).

Transparency requirement to facilitate the legitimate sharing of confidential and/or commercial information through a non-disclosure agreement

- 10.331 ComReg also considers that Eircom, as the SMP operator in the Zone B MI WHQA Markets should be required to provide information regarding technical developments, network rollout and wholesale services, insofar as it affects the provision of MI WHQA products, services and facilities⁹³² in the Zone B MI WHQA Markets (subject to the obligations set out in this Decision) and to do so with sufficient visibility to ensure that Access Seekers are in a position to prepare business or operational plans.
- 10.332 In this respect, ComReg would note that, in some cases, circumstances may arise where Eircom considers that certain information to be provided by it pursuant to its non-discrimination obligations is of a confidential and/or commercially sensitive nature. To cater for such circumstances, ComReg requires Eircom to meet the following requirements, which largely mirror those which have been recently imposed in other markets within which Eircom has SMP.
- 10.333 Where Eircom considers certain aspects of information to be provided under its transparency obligations to be of a confidential and/or commercially sensitive nature, Eircom shall, without delay, provide ComReg with complete details of such information along with objective reasons justifying why it considers the information to be confidential and/or commercially sensitive. ComReg will consider the information in accordance with ComReg Document No. 05/24, so far as relevant or otherwise. If ComReg considers that the information is not confidential and/or commercially sensitive, it shall be published by Eircom in accordance with its obligations under this Section.

⁹³¹ Including Related MI WHQA Elements.

⁹³² Including Related MI WHQA Elements.

10.334 If, having considered a Submission from Eircom in accordance with paragraph 10.333 above, ComReg concludes that the information is confidential and/or commercially sensitive, the following provisions shall apply:

- (a) Eircom shall not be required to publish the information; or
- (b) Notwithstanding paragraph 10.334(a), in circumstances considered appropriate by ComReg, Eircom shall publish general non-confidential details as to the nature of such information and shall make the information or, as agreed with ComReg, extracts of such information, available to an OAO that has signed a Non-Disclosure Agreement (“**NDA**”), the terms and conditions of which shall be fair, reasonable and non-discriminatory. The NDA shall also be published on Eircom’s publicly available wholesale website; and
- (c) Without prejudice to the generality of Eircom’s non-discrimination obligations, any confidential and/or commercially sensitive information (or, as agreed with ComReg, extracts thereof) referred to with respect to Eircom’s transparency obligations shall not be made available by Eircom to its downstream operations until such time as it is made available to an OAO, or as otherwise agreed with ComReg.

10.335 If and when any commercially sensitive and/or confidential information referred to with respect to Eircom’s transparency obligations ceases to be commercially sensitive and/or confidential, it shall be made available by Eircom on its publicly available wholesale website without undue delay and without the need for an NDA to be signed.

10.336 This obligation is considered necessary to ensure that Eircom cannot circumvent compliance with its access, non-discrimination and transparency obligations on the grounds that it considers that certain information is commercially sensitive and/or confidential.

Amendments to proposed obligations

- 10.337 As described in paragraph A1.926 in Annex A.1.10, ComReg has decided to amend the specific wording of the obligation set out in the 2018 Further Consultation⁹³³ with respect to requirements governing sharing of confidential and/or commercial information through a non-disclosure agreement. The amended wording is reflected in paragraphs 10.333 to 10.335 above and is more particularly set out in Section 17 of the Decision Instrument contained in Annex 8. ComReg considers the amendments are required so as to make the obligation less burdensome on Eircom and to cater for scenarios where Eircom may otherwise have to share inappropriate information with Access Seekers.
- 10.338 The transparency requirements with respect to facilitating the legitimate sharing of confidential and/or commercial information through a non-disclosure agreement are more particularly set out in Section 17 of the Decision Instrument.

Transparency requirement with respect to Product Development

- 10.339 Pursuant to Regulation 9 of the Access Regulations, ComReg is imposing obligations set out in paragraphs 10.340 to 10.342 below on Eircom to provide additional information to Access Seekers with respect to the development of regulated products, services or facilities.
- 10.340 With regard to Eircom's obligations in relation to timeliness of product development set out in paragraphs 10.210 to 10.212 above, relating to requests from Undertakings for a new product, service or facility or a non-pricing amendment to an existing product, service or facility, Eircom shall publish on its publicly available wholesale website the relevant information referred to in paragraphs 10.210 to 10.212 at the same time as it provides the information to the requesting Undertaking.
- 10.341 Without prejudice to the generality of Eircom's obligation of transparency in relation to Access, the following obligations shall apply with respect to the publication of information in respect of the development of products, services and facilities:

⁹³³ As set out in Sections 17.16 to 17.18 of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation.

- (a) Eircom shall publish, and keep updated, on its publicly available wholesale website, a description of its product development process, including a description of all process steps and activities and identifying all Milestones and Product Development Decision Points⁹³⁴, commencing with the receipt of a written request for Access from an Undertaking and terminating with the launch of a new or amended wholesale product, service or facility;
- (b) For each written Access request accepted by Eircom as being related to a product, service or facility within the Zone B MI WHQA Markets, Eircom shall publish a new or, as appropriate, a revised, Product Development Roadmap on its publicly available wholesale website no later than fifteen (15) working days after receipt of the request. The Product Development Roadmap shall be kept updated and shall contain (a) a list of all Access requests accepted by Eircom as being related to a product, service or facility within the Relevant Market and (b) the following detail in relation to each Access request:
- (c) Eircom shall publish, and keep updated, on its publicly available wholesale website, a Product Development Roadmap listing all of the Access requests accepted by Eircom as being related to a product, service or facility within the Zone B MI WHQA Markets and stating the priority given by Eircom to the development of each request relative to other developments of regulated products, services or facilities within the Relevant Market. Within eighty-five (85) working days from receipt of an Access request, Eircom shall update the Product Development Roadmap so as to identify the degree of priority that it proposes to assign to the proposed development arising from that request. In the event of the reprioritisation by Eircom of an Access request or requests, Eircom shall state the objective reasons for such reprioritisation(s) in the Product Development Roadmap.

10.342 Following a written Access request from an Undertaking (including a written request from Eircom itself) for a new product, service or facility or a non-pricing amendment to an existing product, service or facility, the following obligations will apply⁹³⁵ from the date of receipt of such a written request (unless otherwise agreed with ComReg):

⁹³⁴ A Product Development Decision Point is a point during the development process at which Eircom takes or is due to take a decision to advance, retard or terminate the development of a product, service or facility.

⁹³⁵ These obligations are in addition to Eircom's obligation in relation to timeliness of product development, as set out in paragraphs 10.210 to 10.212 above.

- (a) For each written request received by Eircom and accepted by Eircom as being related to a product, service or facility within the Relevant Market, Eircom shall, at the earliest possible time, but not later than fifteen (15) working days after the receipt of the request, advise all Undertakings that the request has been received and provide them with information regarding the request as set out in paragraph 10.342 below;
- (b) The information shall include a unique reference number to allow tracking of the request and all known details relevant to the request including but not limited to a copy of the request and a description of the key features and functionality requested;
- (c) Unless otherwise agreed with ComReg, not later than forty (40) working days after receipt of the written request, Eircom shall publish an accurate description of the requested product, service or facility on its publicly available wholesale website;
- (d) Unless otherwise agreed with ComReg, not later than eighty five (85) working days after receipt of the written request, Eircom shall confirm in writing to all Undertakings whether it agrees to provide the requested new or amended product, service or facility. Where the request is refused in full or in part, Eircom shall comply with paragraph 10.210 above in its response to the Undertaking that has made the request. In addition, Eircom shall advise all other Undertakings of a full or partial refusal and provide written reasons for its refusal, at the time of refusal. Where the product, service or facility proposed by Eircom differs from the original request, Eircom shall provide the objective reasons for such differences in writing to all Undertakings within the eighty five (85) working day timeframe;
- (e) Eircom shall, not later than eighty five (85) working days after receipt of the written request, identify the degree of priority that it proposes to assign to the development related to the Access request relative to all other developments, including Access requests and amendments proposed by Eircom, of regulated products, services or facilities in the Relevant Market, and advise all Undertakings of this degree of priority. In the event of the reprioritisation by Eircom of an Access request or requests, Eircom shall advise all Undertakings of such reprioritisation;
- (f) Eircom shall for each such development provide all Undertakings with all other relevant documentation including but not necessarily limited to any revised Industry Process Manual, price lists or technical manuals;

- (g) At all stages of the product development process, Eircom shall make available and keep updated on its publicly available wholesale website all relevant documentation describing the product, service or facility which will be delivered for each development in sufficient detail to allow an Undertaking to be reasonably aware of the proposed key features, functionality and geographic reach of the product, service or facility, and any relevant limitations of the product, service or facility; and
- (h) Eircom shall publish on its publicly available wholesale website the prioritisation process and the criteria used by Eircom in reaching decisions with respect to the prioritisation of product developments relative to each other.

10.343 ComReg is of the view that there are many reasons for and benefits to imposing transparency remedies on an Undertaking found to have SMP in particular markets. The current suite of transparency obligations, imposed as a result of the 2008 Decision, provide a reasonable degree of visibility to Access Seekers with respect to network characteristics and technical standards, interconnect facilities and products, services and facilities.

10.344 However, Eircom's wholesale regulated products and services continue to develop and evolve, and ComReg considers that transparency in relation to these developments is particularly important for the promotion of competition.

10.345 Currently, Eircom, on its own initiative or on receipt of requests from Access Seekers or its downstream arm for a new product or an enhancement to an existing product, may undertake product or process development. The content, timing, speed and communications regarding such developments is of critical importance to Access Seekers.

10.346 Access Seekers need to be able to clearly understand, in a timely manner, the changes or new developments proposed and be able to input into the decisions regarding prioritisation of particular developments. Prioritisation of product development resources by Eircom is a key concern for Access Seekers, particularly in situations where demand for Eircom development resources is greater than that which is available. Access Seekers need to be able to input in the decision making process with respect to how developments are prioritised by Eircom.

10.347 Access Seekers should be given an opportunity, at an early stage of a proposed development, to provide their views as to the priority of the development. Access Seekers must have their priorities fully taken into account by Eircom when decisions with respect to product development resourcing are being made.

10.348 ComReg position is that Eircom should publish the process and criteria used by Eircom in deciding on the prioritisation of product developments.

- 10.349 Access Seekers also need to be able to plan for the introduction of new products, services or facilities and therefore need information, with a reasonable degree of certainty, regarding the characteristics, timing and the availability of developed products, services or facilities.
- 10.350 ComReg has described in paragraphs 10.209 to 10.211, timelines which Eircom must meet throughout its product development process. In addition, ComReg's view is that a greater degree of transparency, compared to the current suite of transparency obligations, imposed as a result of the 2008 Decision, is required with respect to the product development process currently followed by Eircom.
- 10.351 ComReg is, therefore, imposing additional transparency⁹³⁶ obligations which are designed, as far as possible, to ensure that Access Seekers:
- (a) have sufficient knowledge relating to the contents of proposed product developments;
 - (b) have the ability to input into the prioritisation of developments and to understand the criteria and process used by Eircom for prioritising developments; and
 - (c) are made aware of the proposed launch dates of any new products or changes to existing products.

Amendments to proposed obligations

- 10.352 As described in paragraphs A1.961 to A1.967 in Annex A.1.10, ComReg has decided that the text of the transparency of product development obligations proposed in the 2018 Further Consultation⁹³⁷ shall be amended as described below.
- 10.353 ComReg has further considered the proposed wording of the obligation set out in Section 17.22(iii) of the Draft Decision Instrument⁹³⁸ which states that:

not later than thirty (30) working days, unless otherwise agreed with ComReg, after receipt of the access request, Eircom shall agree with the Access Seeker an accurate description of the requirement(s) and shall publish a description of the requested product or service on its publicly available website;

⁹³⁶ Additional to the current suite of transparency obligations, imposed as a result of the 2008 Decision.

⁹³⁷ As set out in Sections 17.20 to 17.22 of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation.

⁹³⁸ Contained in Appendix 4 of the 2018 Further Consultation.

- 10.354 ComReg considers that it is proportionate that the wording of the above requirement be amended to remove the explicit reference to Eircom agreeing with the Access Seeker an accurate description of the requirement. ComReg considers that during the thirty (30) working days period for Eircom to confirm whether or not the Access Seeker has provided it with sufficient information to process the request,⁹³⁹ Eircom will have obtained sufficient information and have engaged with the Access Seeker in such a manner that will allow it to produce an accurate description of the requirement which will be agreeable to the Access Seeker. The wording of this requirement shall therefore be amended to state that Eircom shall publish an accurate description of the requested product, service or facility on its publicly available wholesale website within forty (40) working days.
- 10.355 ComReg has also considered further the proposed wording of the obligation set out in Section 17.22(iv)⁹⁴⁰ of the Draft Decision Instrument⁹⁴¹ set out in the 2018 Further Consultation with respect to the identification to Access Seekers of the degree of priority that Eircom propose to assign to requests.

⁹³⁹ Including the Access Seeker's view on the priority of the request relative to other requests already submitted by the Access Seeker pertaining to the Relevant Market.

⁹⁴⁰ Section 17.22(iv) of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation states that within eighty five (85) working days, unless otherwise agreed with ComReg, Eircom shall confirm in writing to Access Seekers whether it agrees to provide the requested new or amended product, service or facility. Where the request is refused, Eircom shall comply with its obligations to give written reasons for its decision at the time of refusal. In addition, Eircom shall advise all other Access Seekers when the request has been refused and give written reasons for its decision to refuse to meet the request, at the time of refusal, to all other Access Seekers. If Eircom does not intend to fully meet the requirement(s) (i.e., where, for example, Eircom agrees to the development, but some elements of the requirement are not being met) Eircom should make Access Seekers aware of this within eighty five (85) working days. The relevant details, such as the objective reasons for any divergence from the original request, shall also be documented and provided by Eircom to Access Seekers within eighty five (85) working days. Eircom shall, in addition, within eighty five (85) working days, identify the degree of priority relative to all other developments, including Access requests and amendments proposed by Eircom, of regulated products, services or facilities in the Relevant Market that it proposes to assign to each proposed development;

⁹⁴¹ Contained in Appendix 4 of the 2018 Further Consultation.

- 10.356 ComReg considers that Eircom should have an appropriate mechanism that manages and allows requests for changes to the prioritisation of Access requests after the initial priority has been set. However, it is important that there is an appropriate degree of transparency regarding prioritisation, changes to it and the reasons for such changes. Should changes in prioritisation be required, Eircom should include objective justification for the changes made in its Product Development Roadmap.
- 10.357 ComReg's position is that it is also necessary that Access Seekers are made aware of the initial priority assigned to an Access request or if a change of prioritisation has occurred to a request. ComReg's position is that the transparency requirement as set out in Section 17.22(iv) of the Draft Decision Instrument⁹⁴² is amended accordingly so that Eircom advises all Access Seekers of the initial priority assigned by Eircom to an Access request and advises all Access Seekers of a reprioritisation of such a request. In ComReg's view, this obligation is proportionate, as Eircom will be updating its Product Development Roadmap with such information.
- 10.358 ComReg has further considered the obligation set out in Section 17.22(x) of the Draft Decision Instrument that: "*Eircom shall provide any other information as may reasonably be required by ComReg for the purposes of ensuring transparency*". ComReg's position is reflection of ComReg's powers to direct the provision of information in appropriate cases is not required to be imposed as a standalone obligation. ComReg will however monitor the position and, if appropriate, may issue directions or further specify Eircom's transparency obligations in this regard.
- 10.359 ComReg has also considered the view expressed by Eircom that the proposed obligation in Section 17.22(ix) of the Draft Decision Instrument appears to be a duplicate of the proposed obligation in Section 17.21 and has decided that the obligations in these Sections will be reworded for greater clarity.
- 10.360 The wording of the obligations to be imposed as a result of the amendments described in paragraphs 10.353 to 10.361 above are reflected in the obligations summarised in paragraphs 10.340 to 10.342 above more particularly set out in the Decision Instrument in Annex 8, Section 17 of this Decision.
- 10.361 The transparency requirements with respect to product development are more particularly set out in Section 17 of the Decision Instrument.

⁹⁴² Contained in Appendix 4 of the 2018 Further Consultation.

Transparency requirement with respect to network roll out

- 10.362 Pursuant to Regulation 9 of the Access Regulations ComReg is imposing an obligation on Eircom requiring it to make public information with respect to the planned roll out of MI WHQA networks.
- 10.363 Eircom has an existing obligation⁹⁴³ to provide Access Seekers with information which is required to support existing and future products, services and facilities in the market in an accurate and timely manner, further to a reasonable request for such information from an OAO. For the avoidance of doubt this also applies to new products, services or associated facilities in the Zone B MI WHQA Markets⁹⁴⁴, irrespective of technology.
- 10.364 On a monthly basis, Eircom is providing information currently with respect to the roll out of MI WHQA NGN Ethernet⁹⁴⁵. ComReg is of the view that this information⁹⁴⁶ continues to be key to Access Seekers planning, execution and timing of Access and/or Interconnection (products and services). It is ComReg's view that the availability of such information is important for the development of competition as it is a key input into Access Seekers business planning.
- 10.365 For example, in the context of an Access Seeker planning to offer services in an area or areas where the Access Seeker has not previously had a presence, then consideration of Access and Interconnection is a key element in the planning process. Therefore, it is ComReg's view that in order to ensure competition, it is essential that information sharing with respect to MI WHQA availability is provided to a sufficient degree of granularity that allows Access Seekers to plan to offer new services. Such data needs to be made available to Access Seekers in a timely, efficient, transparent and non-discriminatory manner.
- 10.366 ComReg is of the view that information regarding the rollout of WDM services is equally as important to Access Seekers as this information is similarly key to the planning, execution and timing of Access and/or Interconnection and to business planning.

⁹⁴³ 2008 Decision, Appendix A: Decision Instrument Section 8.3.

⁹⁴⁴ Including Related MI WHQA Elements.

⁹⁴⁵ E.g. WEIL-WSEA_NGN_Node_Rollout_plan_V10.6_Final for Jan-18.xls, Version 10.6, 8 January 2018.

⁹⁴⁶ Information with sufficient detail as contained in Open eir January 2018 NGN Ethernet rollout plan: WEIL-WSEA_NGN_Node_Rollout_plan_V10.6_Final for Jan-18.xls, Version 10.6, 8 January 2018.

10.367 ComReg's position is that Eircom shall, in particular, make this information available on its publicly available wholesale website⁹⁴⁷. In summary, Eircom shall:

- (a) (unless otherwise agreed by ComReg) publish, on its publicly available website - at least three (3) months in advance - any proposed changes to the MI WHQA⁹⁴⁸ rollout plan;
- (b) publish on its publicly available wholesale website, the MI WHQA rollout plan within the first ten (10) calendar days of each month; and
- (c) publish the MI WHQA rollout plan with sufficient detail⁹⁴⁹ to allow Access Seekers to determine:
 - (i) Active MI WHQA nodes;
 - (ii) The services offered at each MI WHQA node;
 - (iii) Planned MI WHQA nodes (including forecast dates); and
 - (iv) The services to be offered at each planned MI WHQA node.

10.368 The remedy is considered reasonable and proportionate given that Eircom is already providing information currently with respect to the roll out of MI WHQA NGN Ethernet. Therefore, providing the information on Eircom's MI WHQA WDM rollout plans to Access Seekers does not create an unreasonable burden on Eircom.

10.369 The transparency requirements with respect to product development are more particularly set out in Section 17 of the Decision Instrument (Annex 8).

⁹⁴⁷ Appropriately secured such that only Access Seekers that have signed the LLRO can get access to this information.

⁹⁴⁸ Including NGN Ethernet and WDM.

⁹⁴⁹ Information with sufficient detail as contained in Open eir January 2018 NGN Ethernet rollout plan: WEIL-WSEA_NGN_Node_Rollout_plan_V10.6_Final for Jan-18.xls, Version 10.6, 8 January 2018.

10.9 Price Control and Cost Accounting Remedies

Overview

- 10.370 ComReg has identified in Section 9 of this Decision that Eircom has the ability and incentive in the Zone B MI WHQA Markets to potentially engage in a range of anti-competitive pricing behaviours to the ultimate detriment to competition and consumers. These included the risk that Eircom could charge excessive prices for MI WHQA products, services and associated facilities⁹⁵⁰ in the Zone B MI WHQA Markets. In view of this, ComReg considers that the imposition of obligations of price control and cost accounting on Eircom is justified.
- 10.371 ComReg's decision is to impose a range of access obligations upon Eircom, including (but not limited to) the requirement to provide the following MI WHQA products, services and associated facilities⁹⁵¹ in the Zone B MI WHQA Markets:
- (a) Wholesale Symmetrical Ethernet Access (WSEA) Physical;
 - (b) Wholesale Symmetrical Ethernet Access (WSEA) Logical; and
 - (c) Wholesale Ethernet Interconnection Links (WEILs).
- 10.372 ComReg is required to consider whether price control and cost accounting obligations are appropriate for these services and, if so, what type of obligations best meets the regulatory objectives of promoting effective competition for the ultimate benefit of End Users.
- 10.373 Regulation 13 of the Access Regulations provides that ComReg may, inter alia, impose obligations relating to cost recovery and price controls on an SMP operator. These include (but are not limited to) obligations for cost orientation of prices and obligations concerning cost accounting systems, for the provision of specific types of access or interconnection in situations where a market analysis indicates that a lack of effective competition means that the operator concerned may sustain prices at an excessively high level or may apply a price squeeze to the detriment of End Users.
- 10.374 In imposing any such obligations, ComReg is also required to consider a number of principles, in particular:

⁹⁵⁰ Including Related MI WHQA Elements.

⁹⁵¹ Including Related MI WHQA Elements.

- (a) Take into account the investment made by the SMP operator which ComReg considers relevant and allow such operator a reasonable rate of return on adequate capital employed, taking into account any risks specific to a particular new investment network project; and
- (b) Ensure that any cost recovery mechanism or pricing methodology that ComReg imposes serves to promote efficiency and sustainable competition and maximise consumer benefits.

10.375 In this Section, ComReg sets out the specific price control remedies which has decided to impose on Eircom in relation to the Zone B MI WHQA Markets and justifies its choices concerning the appropriate forms of price control and costing methodologies. On this basis, ComReg specifies its pricing approach. Furthermore, in deciding the specific remedies, ComReg has also taken into account the 2016 Consultation and the 2018 Further Consultation and the Respondents' views to both these consultations. With regards to the Respondents' views on the 2018 Further Consultation, ComReg's assessment of these views is discussed in Annex 1, Section A.1.10.4.

10.376 ComReg further notes that appropriate implementation of specific price control obligations rely on an understanding of the SMP operator's costs incurred in the provision of the associated products and services. Obligations to maintain appropriate cost accounting systems generally support obligations of price control and accounting separation, and can also assist ComReg in monitoring the obligation of non-discrimination. As a result, ComReg's decision is for Eircom to ensure that it maintains appropriate cost accounting systems to justify its prices and costs.

Price Control Remedies

- 10.377 ComReg's final position, supported by the rationale laid out in the remainder of this Section, is that the appropriate approach to price control for Zone B MI WHQA products, services and associated facilities⁹⁵² in the Zone B MI WHQA Markets, is through the application of cost oriented prices⁹⁵³, in particular the prices of MI terminating segments (i.e. WSEA Physical and Logical products) and interconnection links (WEILs products) (detailed earlier in this Section concerning Access Obligations). This final position is consistent with ComReg's preliminary conclusion set out in the 2018 Further Consultation.⁹⁵⁴
- 10.378 ComReg is of the view that it is sufficient to apply the obligation of cost orientation on the MI terminating segments and interconnection links, as the key wholesale inputs, in order to provide Access Seekers with cost oriented wholesale inputs, allowing them, for instance, to emulate a retail offering and compete in downstream markets and in other related markets which rely on such inputs.
- 10.379 In addition, ComReg's decision is that the connection charges for such products be cost oriented, based on the likely costs incurred by Eircom, adjusted for efficiencies, plus a regulated rate of return. The adjustment for efficiencies is to ensure that Eircom is unable to recover any inefficiently incurred costs.
- 10.380 The following paragraphs consider the mechanisms required to establish such a price control obligation in the Zone B MI WHQA Markets under the following headings:
- (a) Appropriate form of price control (discussed in paragraphs 10.381 to 10.403 below);
 - (b) Appropriate costing methodology (discussed in paragraphs 10.404 to 10.438 below);
 - (c) Pricing approach (discussed in paragraphs 10.439 to 10.446 below);

⁹⁵² Including Related MI WHQA Elements.

⁹⁵³ All MI WHQA Interconnection Services (i.e., WEILs or the WDM Interconnection Service) shall be subject to price controls on the basis that the Interconnection Service can be used for a regulated MI WHQA product or service terminating in the Zone B MI WHQA Markets. This is the case even if the Interconnection Service is initially provided in association with terminating segments in Zone A as the relevant Interconnection Service will be available for regulated MI WHQA products and services terminating in the Zone B MI WHQA Markets.

⁹⁵⁴ See paragraphs 9.389 to 9.391 of the 2018 Further Consultation

Appropriate Form of Price Control

10.381 This Section assesses the various potential forms of price controls available and what form of price control is appropriate in the Zone B MI WHQA.

10.382 There are a number of price control options available to ComReg for products, services and associated facilities in the Zone B MI WHQA Markets. The relevance and appropriateness of each are discussed below under the following headings:

- (a) **Option 1:** Regulatory Forbearance;
- (b) **Option 2:** Benchmarking;
- (c) **Option 3:** Retail Minus;
- (d) **Option 4:** Margin Squeeze Test; and
- (e) **Option 5:** Cost Orientation.

Option 1: Regulatory Forbearance

10.383 This option means that there are no *ex ante* price control obligations imposed on the SMP operator. In this option, Eircom (as the SMP operator) would be free to set prices in the Zone B MI WHQA Markets. In this situation, ComReg would have no influence over, for example, the monthly rental prices charged for MI terminating segments or interconnection links.

10.384 Therefore, ComReg's view is that Regulatory Forbearance is not an appropriate approach to set prices for products, services and associated facilities in the Zone B MI WHQA Markets for the reasons outlined in Section 9 above including the risks of excessive pricing to the detriment of competition and ultimately consumers.

Option 2: Benchmarking

10.385 Benchmarking is the process whereby the prices of services are set by reference to the prices of comparable services in other countries. Regulation 13 (3) of the Access Regulations states in relation to benchmarking that:

“The Regulator shall ensure that any cost recovery mechanism or pricing methodology that it imposes under this Regulation serves to promote efficiency and sustainable competition and maximise consumer benefits. In this regard, the Regulator may also take account of prices available in comparable competitive markets”

- 10.386 This approach tends to be adopted by NRAs when there is an absence of sufficient data (e.g. costs, volumes) to allow the NRA to arrive at a suitably informed price. However, ComReg, with the assistance of external consultants, has undertaken extensive cost modelling of the Eircom access network and NGN core network, including their use by MI WHQA services. As a consequence, ComReg developed a suite of cost models, which it considers to be robust and representative of the efficient costs incurred by Eircom in providing these services. These models were detailed in the 2012 Pricing Decision and updated by ComReg's 2016 Access Pricing Decision and by ComReg's 2018 Decision concerning WLA and WCA markets and are further specified in paragraphs 10.435 to 10.438 of this Decision.
- 10.387 Therefore, ComReg's view is that benchmarking is not an appropriate approach to set prices for products, services and associated facilities in the Zone B MI WHQA Markets.⁹⁵⁵

Option 3: Retail Minus

- 10.388 In general, a retail minus price control determines the appropriate margin between the wholesale charge and the related downstream retail prices by considering what proportion of retail and other downstream costs would need to be deducted from the retail price in order to be left with the appropriate wholesale price at which competitors, reliant on upstream (wholesale) inputs, can effectively replicate the retail offer of the downstream arm of the operator with SMP.
- 10.389 An advantage of a retail minus price control in some contexts is that it can be comparatively easy to implement, as there is no need to develop a detailed cost model of the underlying network. However, in the case of leased lines services, it can be very difficult to identify the retail price associated with a particular wholesale service given that very often these services are bundled along with other unregulated services. It is also the case that such retail bundles of regulated and unregulated services are offered on a bespoke bid basis. However, as noted, ComReg has already developed cost models to assess the efficient costs incurred by Eircom in providing MI WHQA services. These models were detailed in the 2012 Pricing Decision and updated by ComReg's 2016 Access Pricing Decision and by ComReg's 2018 Decision concerning WLA and WCA markets and are further specified in paragraphs 10.435 to 10.438 of this Decision document.

⁹⁵⁵ ComReg is of the view that this is consistent with the judgment of Cooke J. in *Vodafone Ireland Limited v Commission for Communications Regulation* [2013] IEHC 382.

- 10.390 These issues are even more complex in the case of MI terminating segments (as opposed to end to end leased lines services) where network modelling would be required to estimate those network costs that an OAO would need to incur to supplement the connectivity provided by a MI terminating segment. This undermines arguments around the ease of use of a retail minus remedy.
- 10.391 Based on these considerations, ComReg is of the view that a retail minus form of price control is not appropriate to set prices for products, services and associated facilities in the Zone B MI WHQA Markets.

Option 4: Margin Squeeze Test

- 10.392 A margin squeeze can occur where a vertically integrated operator with SMP at the wholesale level sets wholesale prices such that, given the prevailing retail prices, it does not allow retail competitors to recover its retail costs (e.g. sales, marketing). This would likely foreclose existing competition and prevent entry to downstream markets.
- 10.393 Similarly, a SMP operator could set its downstream retail prices at a level such that a Similarly Efficient Operator ('**SEO**') is not able to recover the downstream retail costs that it incurs after acquiring the essential wholesale inputs from the SMP operator's wholesale business arm. This outcome would ultimately prevent the SEO from competing effectively in the retail market with the SMP operator. This again would likely foreclose existing competition and prevent potential entry and ultimately be detrimental to End Users.
- 10.394 A margin squeeze test can be set between retail and wholesale products and/or between different wholesale products. A retail margin squeeze test compares the retail revenues with the retail and wholesale costs to determine if the margin is positive or negative. If there is a negative margin the wholesale price and/or retail price may have to change. Similarly, a margin squeeze test between retail and wholesale products ensures economic replicability at each layer of the value chain, with adequate economic space between each layer. A well-constructed margin squeeze test can ensure that a deeply interconnected operator can reap the benefits of its network investments, while providing an important competitive constraint on the SMP operator along the value chain, in both wholesale and retail markets.
- 10.395 A margin squeeze test can also be used as a price control obligation to set maximum wholesale prices or as a complementary test in conjunction with other regulatory tools (e.g. cost orientation).

- 10.396 Currently, a margin squeeze test is applied to set a floor on end-to-end wholesale leased line prices based on the input costs of wholesale terminating segments and associated interconnect links and on the input costs of an SEO with 25% market share (for the use of its own infrastructural networks investments). This is required to emulate an end-to-end, customer to customer leased lines product offering.
- 10.397 This Decision is withdrawing the *ex-ante* obligations for terminating segments in the Zone A MI WHQA Markets, which is a significant share of the MI customer base services. The absence of obligations – in particular those of non-discrimination and price controls – will likely provide operators with the freedom to pursue competitive pricing strategies. This freedom applies to tenders composed of a mix of demands for terminating segments in both the Zone A MI WHQA Markets and Zone B MI WHQA Markets. In particular, it may be possible for an operator to competitively bid for an overall tender by meeting the cost orientation of those products provided in the Zone B MI WHQA Markets, while optimising prices for the products in the Zone A MI WHQA Markets. This is likely to undermine the effectiveness of such a test. As such, ComReg's decision is that a Margin Squeeze Test is not appropriate. This issue is further discussed in the Pricing Approach Section applicable to the Zone B MI WHQA Markets (paragraphs 10.439 to 10.446 below) and Annex 1 of this Decision, on the Respondent's views to Price Control Remedies applicable to the Zone B MI WHQA Markets (Section A.1.10.4).
- 10.398 ComReg also notes that a margin squeeze test also faces the same implementation difficulties as retail minus controls outlined above.

Option 5: Cost Orientation

- 10.399 A cost orientation obligation means that the SMP operator has to ensure that its wholesale prices recover no more than its actual incurred costs adjusted for efficiency plus a reasonable rate of return.
- 10.400 The setting of cost oriented maximum prices for Zone B MI WHQA products, services and associated facilities is consistent with ComReg's statutory objectives under Section 12 of the Communications Regulation Act, 2002 and Regulation 16 of the Framework Regulations (as amended). It is envisaged that this should facilitate greater regulatory certainty and avoid the risk of excessive pricing as identified in Section 9 of this Decision.

- 10.401 A disadvantage of a cost orientation price control is that it requires the update or the development of a cost model, which can be resource intensive. However, as already noted above, ComReg has developed cost models to assess the efficient costs incurred by Eircom in providing MI WHQA services, allowing it to set cost oriented prices for these services. These models were detailed in the 2012 Pricing Decision and updated by ComReg's 2016 Access Pricing Decision and by ComReg's 2018 Decision concerning WLA and WCA markets and are further specified in this Decision document in paragraphs 10.435 to 10.438.
- 10.402 Hence, ComReg's decision is that a cost orientation obligation is justified to set maximum price levels for products, services and associated facilities in the Zone B MI WHQA Markets. This obligation is intended to address the risk, as identified in Section 9 of this Decision document, of a vertically-integrated operator with SMP in the wholesale market exploiting its position, by charging excessive prices for wholesale inputs and so over recovering its costs.

Conclusion on form of price control

- 10.403 For the reasons set out above, ComReg's conclusion is that Eircom should be subject to an obligation of Cost Orientation for products, services and associated facilities pursuant to its obligations in the Zone B MI WHQA Markets. Furthermore, having regard to ComReg views set out in paragraphs 10.392 to 10.398, ComReg is withdrawing the margin squeeze obligation currently applied between end-to-end wholesale leased line services and wholesale MI terminating segment services.

Appropriate Costing Methodology

Overview

- 10.404 After deciding that a Cost Orientation price control obligation is appropriate, the next issue to be addressed is to ascertain the correct costing methodology to be applied. The costing methodology determines the costs that should be included in any cost model and how this is converted into a unit price.
- 10.405 When considering the options available to ComReg in determining the most appropriate costing methodology there is a need to ensure compliance with the price control obligations for products, services and facilities in the Zone B MI WHQA Markets. There is also a need to balance a number of objectives, including the promotion of competition, incentivising infrastructure investment, ensuring appropriate cost recovery for Eircom and ensuring that the interests of End Users are protected.

- 10.406 ComReg is of the view that effective competition in the downstream markets that rely on inputs from the Zone B MI WHQA Markets would be best served by applying price ceilings on wholesale inputs required to provide retail leased lines. In effect, cost orientated prices for the MI WHQA products, services and associated facilities⁹⁵⁶ in the Zone B MI WHQA Markets should be established, and these in turn set as maximum wholesale price levels.
- 10.407 In determining an appropriate costing methodology the following options were considered:
- (a) What is the appropriate cost standard? (discussed in paragraphs 10.408 to 10.417 below);
 - (b) What is the appropriate cost approach: Should historic costs or current costs be used? (discussed in paragraphs 10.418 to 10.425 below);
 - (c) What is the appropriate cost modelling approach: Should a Top Down ('TD'), bottom up ('BU') or hybrid model approach be applied? (discussed in paragraphs 10.426 to 10.434 below);
 - (d) What is the appropriate cost model? (discussed in paragraphs 10.435 to 10.438 below).

Appropriate Cost Standard

- 10.408 Cost standards refer to the method by which costs are allocated to services with the objective of allowing the operator to recover all of the efficiently incurred costs associated with its network.
- 10.409 Certain assets and resources can be traced directly to a specific product/service and can, therefore, be considered as direct costs which are attributable to a specific product/service. However, other assets and resources that can be used by many different products/services require allocation rules to share such costs amongst the range of products/services that these assets and resources support. These costs can be generally categorised as follows:
- (a) **Common costs:** costs that in general are not attributable to any product/service (i.e. costs incurred across the whole organisation regardless of the product or service provided). Examples include corporate overheads, general finance function costs, CEO salary, regulatory licence fees, redundancy and voluntary severance costs; and

⁹⁵⁶ Including Related MI WHQA Elements.

- (b) **Joint costs:** costs that are variable and incurred by some, but not all products/services, but cannot be directly attributed to one particular product/service (e.g. cable and trench costs for core network connectivity providing a highway for traffic for a range of services, such as broadband and LLs, but not attributable to local access services such as Local Loop Unbundling).

10.410 The options for the choice of the appropriate cost standard for the purposes of a price control typically involve the following:

- (a) Average Variable Cost ('**AVC**');
- (b) Average Avoidable Cost ('**AAC**');
- (c) Long Run Average Incremental Cost ('**LRAIC**');
- (d) LRAIC plus; or
- (e) Average Total Cost ('**ATC**').

10.411 Each of the above cost standards is discussed below.

Average Variable Cost

10.412 AVC approximates to the variable cost of producing an additional unit of output. However, it does not consider fixed costs, which by definition do not vary with output and which can be a significant cost component faced by operators. ComReg, as a result, is of the view that the application of this cost standard when used to establish wholesale product prices could prevent new market entrants and existing operators from recovering their investment costs. This, in turn, would significantly constrain the potential for entry by efficient entrants and could also lead to an exit of existing operators who cannot sustain a strategy that may, for example, involve short term losses. Hence, ComReg considers that the use of an average variable cost approach might be sustainable for an operator in the short term but would not be a reasonable approach to establish cost oriented prices.

Average Avoidable Cost

10.413 AAC are the short-run avoidable variable and incremental fixed costs of the additional sales of the product/service under review. The inclusion of short run fixed costs, distinguishes the AAC approach from the AVC approach. Furthermore, the exclusion of a mark-up for overall fixed and common costs, distinguishes AAC from ATC. As the AAC standard does not include provision for (non-avoidable) fixed costs and common costs in an *ex ante* margin squeeze test, it could be argued that this provides the SMP operator with an advantage given the broad range of products and services over which it could conceivably recover such common costs. ComReg is of the view that the decision to enter the market depends on the expectation that all fixed and common costs can be recovered at least in the long term. Cost measures such as AAC do not ensure this, as the total costs of an operator are not covered. Thus, ComReg is of the view that to apply an AAC cost rule in an *ex ante* context would be to the detriment of investment and competition overall. This would ultimately be to the detriment of End Users.

LRAIC, LRAIC plus or ATC

10.414 The European Commission in its 'Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty [now Article 102 of the Treaty on the Functioning of the European Union ('TFEU')] to abusive exclusionary conduct by dominant Undertakings'⁹⁵⁷, noted that:

“Long-run average incremental cost is the average of all the (variable and fixed) costs that a company incurs to produce a particular product. LRAIC and average total cost (ATC) are good proxies for each other, and are the same in the case of single product Undertakings. If multi-product Undertakings have economies of scope, LRAIC would be below ATC for each individual product, as true common costs are not taken into account in LRAIC. In the case of multiple products, any costs that could have been avoided by not producing a particular product or range are not considered to be common costs. In situations where common costs are significant, they may have to be taken into account when assessing the ability to foreclose equally efficient competitors.”

10.415 Given that one of the regulatory objectives of ComReg is to promote infrastructure competition the only three available options that ComReg believes are consistent with its objectives in this context are LRAIC, LRAIC plus and ATC. ComReg is of the view that the differences between LRAIC, LRAIC plus and ATC are as follows:

⁹⁵⁷ C (2009) 864 dated 9 February 2009 - at footnote 18.

- (a) LRAIC is the average efficiently incurred variable and fixed costs that are directly attributable to the activity concerned over the long-run. This approach does not include an apportionment for common costs. LRAIC is a forward-looking approach, but does not permit an operator to recover all of its efficiently incurred costs. Significant common costs which are not directly attributable to the product in scope would be excluded under this approach. This could deter an operator from entering the market due to the inability to fully recover investment costs;
- (b) LRAIC plus is the average efficiently incurred variable and fixed costs that are directly attributable to the activity concerned over the long-run, plus a mark-up for joint and common costs. This approach avoids the risk of being unable to recover investment costs associated with joint and common costs;
- (c) ATC is the average total cost and includes variable, fixed, joint and common costs based on historical cost data but with no adjustments for efficiencies. This approach considers all relevant historic costs and so may encourage inefficient investments by operators.

Conclusion on the appropriate cost standard

- 10.416 ComReg is of the view that LRAIC plus is the appropriate cost standard for the setting of prices in the Zone B MI WHQA Markets. ComReg is of the opinion that this approach provides the right “build/buy” signals to new entrants. LRAIC plus also allows the SMP operator the opportunity to recover all of its efficiently incurred costs in the long-term (including a reasonable rate of return) and therefore encourages efficient investment by the SMP operator.
- 10.417 The cost models detailed the 2012 Pricing Decision were based on the LRAIC plus cost standard. These models were updated by ComReg’s 2016 Access Pricing Decision and by ComReg’s 2018 Decision concerning WLA and WCA markets and are further specified in this Decision document in paragraphs 10.435 to 10.438.

Appropriate Cost Approach: Historic Costs or Current Costs

- 10.418 ComReg now considers whether Historic Costs or Current Costs should be used in setting cost-oriented prices.

Historic Costs

- 10.419 Under the historic cost approach, an operator will recover costs that were incurred at the time of the relevant transaction in the provision of services along with a reasonable return on investment.
- 10.420 The historical cost accounts (‘HCA’) are based on the actual reported financial results of an operator for a particular expired period of time.

- 10.421 One of the main concerns with the HCA accounts is their lack of granularity and therefore their suitability for cost modelling. In addition, while HCA has an advantage in that there is a reduced risk of an operator being overcompensated, the European Commission (BEREC) suggested that the use of historic costs are not appropriate for decision making of the NRA as these may include inappropriate costs, inter alia, inefficient investments.⁹⁵⁸
- 10.422 Therefore, ComReg is of the view that the use of historic costs to derive wholesale prices would not send the correct signals to the market to encourage cost reductions nor would it provide other operators with a suitable benchmark for investment decisions.

Current Costs

- 10.423 The current cost approach values assets at the current market value, reflecting changes in asset prices. The current cost approach is normally implemented based on the current cost accounting ('CCA') system of the incumbent or on the basis of a modern equivalent asset ('MEA') alternative approach. ComReg notes that Eircom no longer produces CCA accounts. An MEA approach reflects the costs that a hypothetical entrant would incur through investing in an alternative network.
- 10.424 As noted above in this Decision document, the models detailed in the 2012 Pricing Decision, updated by ComReg's 2016 Access Pricing Decision and by ComReg's 2018 Decision concerning WLA and WCA markets are based on a BU-LRAIC plus approach and incorporate an MEA perspective. These models are further specified in this Decision document in paragraphs 10.435 to 10.438.

Conclusion on the appropriate cost approach

- 10.425 For the reasons set out in the preceding paragraphs, ComReg's position is that the current cost approach is the most relevant cost approach to adopt to determine prices in the Zone B MI WHQA Markets, as it will continue to promote competition and appropriately reward investment by Eircom and Access Seekers.

Appropriate Cost Modelling Approach

- 10.426 Given ComReg's position that LRAIC plus based on Current Costs is more appropriate where infrastructure investment is concerned, ComReg must then consider the type of model that is appropriate to adopt to determine the costs associated with the provision of Zone B MI WHQA services.

⁹⁵⁸ BEREC Report on Regulatory Accounting in Practice 2014, Doc. No. BoR(14)114, published 29 September 2014, Page 64.

10.427 ComReg has considered two options:

- (a) A top down ('TD') model; and
- (b) A bottom up ('BU') model.

Top-Down Model

10.428 A top down model uses as a starting point the current financial information of the SMP operator (or incumbent) as an input. The information required can be obtained from the financial accounts (e.g. income statement, balance sheet) or from budgeted accounts. One advantage in this approach is that it links the cost recovery to the actual costs incurred by an SMP operator.

10.429 However, the disadvantages of this approach are as follows:

- (a) The accounting information may include inefficient costs incurred by an SMP operator;
- (b) It relies on significant amounts of detail from the SMP operator;
- (c) It relies heavily on the robustness of the data provided by the SMP operator; and
- (d) It cannot be converted into a forward-looking approach and may therefore provide the wrong "build/buy" signal to industry.

10.430 TD models can be constructed on Historic or Current Costs. In a TD model based on HCA accounts, the net book value of assets is derived from the SMP operator's fixed asset register (depreciated over their remaining useful life). In a TD model based on CCA accounts, the assets are revalued to their current costs and discounted (via depreciation charged to date) to reflect the period of use since the initial investment. This results in a change in the depreciation and return on capital charges associated with a CCA approach rather than one based on HCA.

Bottom-Up Model

10.431 A BU model does not rely on historical financial data. Instead, it reflects the choices of a hypothetical, forward-looking efficient operator from both a technical and operational point of view.

10.432 Several approaches can be adopted. The most commonly used approaches are as follows:

- (a) **Scorched Earth:** This approach considers the theoretical situation of developing a new network, with the existing network functionality but with 100% efficiency. Operators' networks develop incrementally over many years, dealing with immediate local demands in a region, often leveraging available assets to minimise immediate costs. This leads to inevitable inefficiencies in the network design and costs when considered in retrospect;
- (b) **Scorched Node:** A scorched node approach considers what and where demand exist today and allows for the design of an optimal network configuration. In the scorched node approach the existing nodes are said to be fixed whereas all other network elements can be optimised. An optimised network is then built within the constraints of the existing nodes.

10.433 A scorched node approach is often considered to be the preferred approach as it allows for the modelling of efficient costs and scale while maintaining the nodes or footprint assumptions of an SMP operator.

Conclusion on the appropriate cost modelling approach

10.434 ComReg's conclusion on the appropriate cost modelling approach is that a scorched node BU approach should be used in developing the appropriate cost models. BU models are better suited than TD models to provide appropriate "build/buy" signals to the market since they are more reflective of the conditions faced by Access Seekers. In addition, scorched node BU models provide the opportunity to exclude inefficient costs which an SMP operator might incur in.

Appropriate Cost Model

10.435 In the paragraphs above, ComReg reviewed the costing methodology options available to it in order to determine the appropriate costing methodology to assess the level of costs relevant to Zone B MI WHQA products, services and associated facilities⁹⁵⁹ in the Zone B MI WHQA Markets. ComReg is of the view that it is appropriate to use a BU-LRAIC Plus costing methodology to implement the price control obligation of cost orientation in the Zone B MI WHQA Markets.

⁹⁵⁹ Including Related MI WHQA Elements.

- 10.436 The associated BU-LRAIC plus cost models required to establish cost oriented prices were detailed in the 2012 Pricing Decision and updated by ComReg's 2016 Access Pricing Decision and by ComReg's 2018 Decision concerning WLA and WCA markets. These models set the basis for calculating cost oriented prices for products, services and associated facilities in the Zone B MI WHQA Markets and in particular to set prices for terminating segments (WSEA Physical and Logical products) and for interconnection links (WEILs products).
- 10.437 The terminating segment MI WHQA products principally consist of two components:
- (a) The WSEA Physical, which is the connectivity of a MI terminating segment path from the End User location to the adjacent serving Eircom Exchange or Node. The main cost inputs are the trench and fibre optic cable (based on the distance over which connectivity is required), in addition to the deployment of customer premises device (e.g. a modem) on which the fibre cable is terminated. ComReg's decision is that the prices for the WSEA Physical component should be based on outputs from the Revised CAM specified in the 2016 Access Pricing Decision, as amended from time to time. It is important to point out that ComReg has initiated a review of the existing Revised CAM (now referred to as the "Access Network Model" ("**ANM**")) which will be subject to a consultation process as indicated in ComReg's published Annual Action Plan.⁹⁶⁰ The outcome of that review should be considered by Eircom in relation to the price control obligations specified in this Decision. In any event, the onus remains with Eircom to continue to comply with its regulatory obligations, including its price control obligations, at all times.
 - (b) The WSEA Logical, which is the connectivity of a MI terminating segment path from the Eircom Exchange or Node to an interconnection link or a WEIL, serving the Access Seeker. ComReg's decision is that the prices for the WSEA Logical component be based on the NGN Core model specified in the 2012 Pricing Decision (Section 4 of this Decision document) and updated by the 2018 Decision relating to WLA and WCA Markets (Section 8 of this Decision document).

⁹⁶⁰ ComReg's Annual Action Plan available at <https://www.comreg.ie/media/2019/07/Annual-Action-Plan-Ye-30-June-2020.pdf>.

Conclusion on the Appropriate Cost Model

10.438 ComReg's conclusion is that the combination of the Revised CAM and the NGN Core model provide Eircom with the required inputs to establish an update of the cost oriented prices for the WSEA Physical and Logical components of terminating segments in the Zone B MI WHQA Markets and associated WEILs. For WSEA Physical prices, ComReg's position is that Eircom use the Revised CAM model specified in the 2016 Access Pricing Decision, as amended from time to time, for the main cost elements. In relation to the WSEA Logical prices, ComReg's position is that Eircom use the NGN Core model, specified in the 2012 Pricing Decision and updated by ComReg's 2018 Decision relating to WLA and WCA Markets. For WEIL prices, ComReg's position is that the combined use of the Revised CAM and the NGN Core model provide the basis for setting the relevant prices.

Pricing Approach

Pricing approach for WSEA Physical, WSEA Logical and WEILs

10.439 ComReg's position is that combination of the Revised CAM and the NGN Core model provide Eircom with the required inputs to establish an update of the cost oriented prices for the WSEA Physical and Logical components of terminating segments in the Zone B MI WHQA Markets and associated WEILs. However, ComReg recognises that these models require further processing by Eircom to develop a new and comprehensive price list for the large range of product variants which exist in the MI WHQA Markets pursuant to the price control obligations set out in this Decision. In the interim, ComReg's position is that existing wholesale regulated prices, which are listed on Eircom's LLRO price list for MI terminating segments (WSEA Physical and WSEA Logical products), should continue to apply in the Zone B MI WHQA Markets. Furthermore, wholesale prices for associated facilities such as interconnection links (WEILs) should also pertain for a period, until Eircom conclude on the update of its new price list.

10.440 ComReg's position is that the development of a comprehensive price schedule for Zone B MI WHQA terminating segments and associated interconnection links should be completed by Eircom within a reasonable period of time. ComReg's decision is that a proposal with the updated cost oriented prices should be provided by Eircom to ComReg no later than four (4) months after the publication of this Decision, including an explanation demonstrating how the new prices are in compliance and supported by detailed calculations.

- 10.441 Furthermore, ComReg's position is that Eircom use the Revised CAM and the NGN Core model to set new prices for MI WHQA terminating segments in Zone B MI WHQA Markets and interconnect links in such way as to be consistent with the form and structure of the cost models pertaining to the 2012 Pricing. The present structure of the technology deployed in the Eircom core network is largely similar to that in existence at the time of the 2012 Pricing Decision. Similarly, the Revised CAM is also similar to the access network cost model used to determine wholesale cost oriented access prices at the time of the 2012 Pricing Decision. In this context, despite the significant migration to a fibre cable access network, the structure of the supporting models to be used to determine wholesale regulated prices is largely similar and therefore affords the ability to replicate the existing price structure.
- 10.442 In relation to the existing Margin Squeeze Test, this Decision is withdrawing the *ex-ante* obligations for terminating segments in the Zone A MI WHQA Markets, which is a significant share of the MI customer base services. The absence of obligations in Zone A – in particular those of non-discrimination and price controls – will likely provide operators with the freedom to pursue competitive pricing strategies. This freedom applies to tenders composed of a mix of demands for terminating segments in both the Zone A MI WHQA Markets and Zone B MI WHQA Markets. In particular, it may be possible for an operator to competitively bid for an overall tender by meeting the cost orientation of those products provided in the Zone B MI WHQA Markets, while optimising prices for the products in the Zone A MI WHQA Markets. The effective application of a Margin Squeeze Test relies on conditions being met. One condition is that it should be based on the delineation of a market where a service provider has SMP on a national basis or where the geographic market boundaries are well defined. A second condition is that the relevant SMP operator costs should be directly observable by the regulator. As noted, this Decision is withdrawing the *ex-ante* obligations for terminating segments in the Zone A MI WHQA Markets, a significant share of the MI customer base services. This adds to the difficulty of ComReg observing the set of costs associated with services normally bundled with leased lines (e.g. disaster recovery, managed network solutions). This is likely to undermine the effectiveness of such a test. As such, ComReg's decision is that a Margin Squeeze Test is not appropriate.
- 10.443 However, some Respondents to 2018 Further Consultation highlighted the risk that Eircom might supply MI terminating segments to its own retail or downstream business at price levels below those available to other operators. A summary of Respondents' views and ComReg's assessment of these views is included in Annex 1, Section A.1.10.4.

- 10.444 Furthermore, in the context of the de-regulated retail leased line market and the de-regulation of terminating segments in Zone A MI WHQA Markets imposed by this Decision, ComReg's is of the view that the combination of *ex post* competition law assurances in Zone A MI WHQA Markets and cost orientation and non-discrimination obligations in Zone B MI WHQA Markets is the proportionate approach to mitigate the concerns highlighted by operators. This Decision removes the obligations for terminating segments in the Zone A MI WHQA Markets which likely provide operators with the freedom to pursue competitive pricing strategies, but imposes obligations for Eircom in the Zone B MI WHQA Markets. In particular, Eircom is obliged to provide products, services and associated facilities at cost-oriented prices on a non-discriminatory basis to both wholesale purchasers and its downstream business. ComReg also notes in this regard that Eircom's obligations in Zone B MI WHQA Markets are further specified, with the imposition of a Statement of Compliance (SoC) in this Decision.
- 10.445 Notwithstanding the above, ComReg has further considered ways of limiting the risk of inappropriate pricing behaviour and to this effect is, in this Decision, requiring Eircom to provide as part of its accounting separation obligations a breakdown of revenues and volumes in Zone B MI WHQA Markets (as described in paragraph 10.455) so that ComReg retain the capacity to monitor the quantum of MI revenues in each market zone.
- 10.446 It is further noted that ComReg may carry out a review, as appropriate, of the main aggregated inputs in the Revised CAM to reassess fibre cable and trench costs associated with the WSEA Physical component of MI terminating segments. A similar review may be undertaken of the NGN Core Model insofar as this model assists in the determination of cost orientated prices for the WSEA Logical component of MI terminating segments. Additionally, the review of these models may also be considered insofar they assist with the setting of cost oriented prices for interconnection links (WEILs products). Any such reviews will include a reassessment of the costs and volumes to ascertain if any material or exceptional changes associated with model inputs are required.

Summary of Price Control and Cost Accounting Remedies

- 10.447 Having regard to the analysis set out in paragraphs 10.377 to 10.446 above, ComReg's position is that price control obligations of cost orientation, including cost accounting, are proportionate and justified. This position is consistent with the preliminary conclusions set out in the 2018 Further Consultation.
- 10.448 Therefore, ComReg's decision is to continue the imposition of a price control obligation of cost orientation, including cost accounting, on Eircom with respect to Zone B MI WHQA products, services and associated facilities:
- (a) The price control obligation of cost orientation, including cost accounting, will continue to apply to Zone B MI WHQA products, services and associated facilities, including terminating segments (WSEA Physical and WSEA Logical products) and interconnect links (WEILs);
 - (b) Cost orientation is to be based on a BU-LRAIC plus cost modelling approach, based on the Revised CAM and NGN Core cost models (as amended from time to time);
 - (c) With respect to terminating segments in Zone B MI WHQA and interconnected links Eircom shall submit within four (4) months from the date of this Decision a proposal with updated cost oriented prices;
 - (d) The margin squeeze test obligations, currently applied between end-to-end wholesale leased line prices and wholesale terminating segments will be withdrawn with immediate effect from the date of this Decision.

10.10 Accounting Separation Remedies

Overview

10.449 In Section 9 ComReg identified that Eircom has the ability and incentive to potentially engage in a range of anti-competitive pricing behaviours to the ultimate detriment to competition and consumers. These included the risk that Eircom could charge excessive prices for MI WHQA products, services and associated facilities⁹⁶¹ in the Zone B MI WHQA Markets. In view of this, ComReg considers that the imposition of obligations of accounting separation on Eircom is justified, in addition to the imposition of the price control obligations of cost orientation and cost accounting.

⁹⁶¹ Including Related MI WHQA Elements.

10.450 In general, if specific price control obligations, via cost orientation, are to be meaningful, it may be necessary to have a clear and comprehensive understanding of the costs associated with an SMP operator's provision of those products. Obligations to maintain appropriate cost accounting systems generally support obligations of price control (and accounting separation), and can also assist ComReg in monitoring the obligation of non-discrimination.

ComReg's Position on Accounting Separation Remedies

10.451 Having regard to the need to support the effectiveness of the proposed price control obligations set out above, ComReg's decision is that the continued imposition of accounting separation and cost accounting obligations upon Eircom in the Zone B MI WHQA Markets is required. This decision is consistent with ComReg's position set out in the 2018 Further Consultation.⁹⁶² In this respect, Eircom shall ensure that it maintains appropriate cost accounting systems to justify its prices/costs or to permit a review of the appropriate level of costs which should be considered in future reviews of the cost model used to determine cost orientated prices. These obligations also apply to MI WHQA interconnection links (i.e. WEILs products). This later requirement recognises the use of such facilities for the interconnection of broadband traffic between Eircom and OAOs, and the ongoing need to monitor their profitability, as part of a regulated market. The detailed nature of these accounting separation and cost accounting obligations are those currently imposed upon Eircom and as specified in the 2010 Accounting Separation Decision (as may be amended from time-to-time)⁹⁶³.

10.452 The burden of proof rests with Eircom to show that its prices/charges for MI WHQA LL in the Zone B MI WHQA Markets and associated facilities or interconnection links in both Zones A and B, are derived from costs, having regard to the nature of the proposed price control obligations. Furthermore, for the purpose of calculating the costs of efficient provision of such services, in accordance with Regulation 13(4) of the Access Regulations, ComReg notes that it may also use cost accounting methods independent of those used by any operator in the market. Additionally, ComReg can also issue a direction requiring an operator to provide full justification for its prices, and may, where appropriate, require prices to be adjusted.

⁹⁶² See paragraphs 9.394 to 9.396 of the 2018 Further Consultation.

⁹⁶³ Accounting Separation and the Cost Accounting Review of Eircom Limited, ComReg Document 10/67, Decision D08/10, August 2010.

Accounting Separation remedies

- 10.453 ComReg's decision is to retain the obligation requiring Eircom to publish in its Separated Accounts a Consolidated Income Statement and Consolidated Statement of Mean Capital Employed for Wholesale Leased Lines (WHQA). This arises in light of the decision for ongoing cost orientation regulation of TI Market based PPC products at bandwidths of 2Mb/s and below, and of the decision for the price control obligation of cost orientation to continue to apply in the Zone B MI WHQA Markets.
- 10.454 As it is intended that Zone B MI WHQA Markets products, services and associated facilities will continue to be regulated, ComReg proposes to retain the requirement to provide consolidated financial results for all MI WHQA products. Specifically, ComReg's decision is that the existing reporting format for MI WHQA services in the published HCA Statements and in the Additional Financial Statements is to be maintained. However, as noted in paragraph 8.282, ComReg's decision is to remove the obligation to report the Wholesale Leased Lines Income Statement as part of the Additional Financial Statements and instead to have this statement included as part of the Additional Financial Information submissions.
- 10.455 In addition to this, ComReg's decision is to include an obligation for Eircom to provide a statement within the AFI portfolio of reports (if and when required by ComReg), outlining the total revenues and volumes realised from terminating segments in the Zone B MI WHQA Markets. This information will be used by ComReg to inform a later assessment of appropriate accounting separation obligations for the Zone B MI WHQA Markets and will assist with any *ex post* reviews if needed. Finally, ComReg's decision is that other AFI reports relating to MI interconnection links (WEILs) remain an obligation. These requirements are further discussed in the Annex 1, in the Respondents' views to the Price Control and Accounting Remedies proposed in the 2018 Further Consultation (refer to Annex 1, Section A.1.10.4).

Summary of Accounting Separation remedies

- 10.456 Having regard to the analysis set out in paragraphs 10.449 to 10.455 above, ComReg's position is that accounting separation obligations are proportionate and justified. This position is consistent with the preliminary conclusions set out in the 2018 Further Consultation.
- 10.457 Therefore, ComReg's decision is to continue the imposition of accounting separation obligations on Eircom with respect to Zone B MI WHQA products, services and associated facilities.
- 10.458 Existing accounting separation obligations continue to apply. However, a number of changes will apply in relation to the disclosure of revenues and costs associated with MI WHQA products. These include:

- (a) The removal of the Wholesale Leased Lines Income Statement from the Additional Financial Statements and its inclusion within the Additional Financial Information (AFIs) statements;
- (b) The obligation for Eircom to provide a statement within the AFI portfolio of reports (if and when required by ComReg), outlining the total revenues and volumes realised from terminating segments in the Zone B MI WHQA Markets.

10.11 Statement of Compliance ('SoC')

Imposition of SoC Remedies

Introduction

- 10.459 In paragraphs 9.399 to 9.449 of the 2018 Further Consultation, ComReg outlined its views on the imposition of SoC remedies upon Eircom in the Zone B MI WHQA Markets.
- 10.460 In Annex A.1.10 paragraphs A1.1009 to A1.1083 of this Decision, ComReg summarises the main views of Respondents on the Access obligations that were proposed in the 2018 Further Consultation, followed by ComReg's assessment of Respondents' views.
- 10.461 Of the seven Respondents to the 2018 Further Consultation, five Respondents (ALTO, BT, Eircom, Verizon and Vodafone) expressed views on issues relating to the proposed SoC remedies set out in the 2018 Further Consultation.
- 10.462 Four Respondents (ALTO, BT, Verizon and Vodafone) broadly agreed with ComReg's proposal. Eircom disagreed with ComReg's proposal requiring Eircom to provide a SoC to ComReg with respect to all of its regulatory obligations as imposed in the Zone B MI WHQA Markets.
- 10.463 ComReg grouped Respondents' Submissions and related issues using the following themes:
- (a) Transparency – Publication of the SoC (see paragraphs A1.1012 to A1.1017, Annex A.1.10);
 - (b) Potential impact on Eircom of the proposed SoC obligation (see paragraphs A1.1018 to A1.1024, Annex A.1.10);
 - (c) SoC Signatory (see paragraph A1.1025, Annex A.1.10);
 - (d) SoC and risk assessment on investment decisions (see paragraphs A1.1026 to A1.1027, Annex A.1.10);
 - (e) SoC and Eircom RGM (see paragraphs A1.1028 to A1.1032, Annex A.1.10);
 - (f) SoC and Compliance (see paragraph A1.1033 below, Annex A.1.10);

(g) ComReg's vires with respect to the imposition of the SoC obligation in the WHQA market (see paragraph A1.1034 below); and

(h) Other issues raised by Respondents (see paragraph A1.1035, Annex A.1.10).

10.464 Having regard to the analysis carried out in the 2018 Further Consultation and having assessed Respondents views (see Annex A.1.10, paragraphs A1.1009 to A1.1083), ComReg's position is to impose upon Eircom the SoC obligations set out in paragraphs 10.465 to 10.474 below.

SoC Remedies to be imposed

10.465 Below, ComReg sets out the SoC obligations to be imposed.

10.466 Pursuant to Regulation 9, 10, 11, 12 and 13 of the Access Regulations ComReg requires that Eircom shall submit to ComReg a written Statement of Compliance ('**SoC**') demonstrating its compliance with its regulatory obligations, i.e. not just its non-discrimination obligations, in the Zone B MI WHQA Markets. This is considered proportionate and justified having regard to the need to ensure effective monitoring and enforcement of all regulatory obligations, given the potential for any non-compliance to impact ultimately on competition in downstream or adjacent markets.

10.467 ComReg's view is that, subject to any confidentiality considerations, the SoC should be published by Eircom on its publicly available website, in accordance with its transparency obligations which are discussed in paragraphs 10.258 to 10.369 above.

10.468 Eircom is also required to submit to ComReg a written SoC that adequately demonstrates its compliance with its regulatory obligations in the Zone B MI WHQA Markets, to include the following:

- (a) a full and true written statement, signed by a Director or Directors (the 'Directors') on behalf of the Board of Directors, of Eircom Ltd.⁹⁶⁴, in which,
 - (i) the Directors acknowledge that they are responsible for Eircom securing compliance with its regulatory obligations;
 - (ii) the Directors confirm that - in their opinion - arrangements, structures and internal controls are in place that provide reasonable assurance that Eircom is compliant with its regulatory obligations;

⁹⁶⁴ Which, for the avoidance of doubt, shall include any successors and/or assigns of Eircom Limited.

- (iii) the Directors explain the basis upon which the confirmation is made, including a description of the information relied upon, and the process followed, by the Directors of Eircom in order to be satisfied that to the best of their knowledge the arrangements, structures and internal controls in place provide reasonable assurance that Eircom is in compliance with the obligations set out in the Decision Instrument (Annex 8 Section 20 of this Decision).
- (b) a description of the process of risk identification, and the controls developed to mitigate risks of non-compliance with Eircom's regulatory obligations, as they relate to the categories of activities in paragraph 10.469 below and shall include the following in particular:
- (i) a detailed description of the risk analysis process, to include the following:
 - a. a description of the expertise employed by Eircom;
 - b. a list of all material including all relevant documentation;
 - c. a description of how the material and expertise was used; and
 - d. a description of the purpose of each process which was analysed for risks of non-compliance.
 - (ii) a detailed description of the risks identified utilising the risk analysis process described in paragraph 10.468(b)(i) above;
 - (iii) a detailed description of the controls developed utilising the control development process described in paragraph 10.468(b)(iv) below;
 - (iv) a detailed description of the control development process to include the following:
 - a. a description of the relationship of each control to the underlying risk identified at paragraph 10.468(b)(ii) above;
 - b. a description of the expertise relied upon by Eircom management;
 - c. a list of all material including all relevant documentation used;
 - d. a description of how the material and expertise was used; and
 - e. a description of the process used to assess the effectiveness of the controls.
 - (v) a description of the operation of controls including the method employed by Eircom to record and store the data produced when controls are operated;
 - (vi) a description of and the identification of the repository in which the data from the operation of each control is recorded and stored.

- 10.469 The obligations set out in paragraph 10.468 above shall apply, but, are not limited to, the following categories of activities:
- (a) Pre-provisioning, provisioning and service assurance for products services and facilities;
 - (b) Product development including product enhancements, and pre product development screening of Access requests;
 - (c) Product prioritisation and investment decisions;
 - (d) Access to shared resources including IT and product development resources;
 - (e) The management of information, both Structured Information⁹⁶⁵ and Unstructured Information⁹⁶⁶ in conformance with regulatory requirements;
 - (f) The preparation and submission of bids in response to a commercial or government request for proposal or tender;
- 10.470 The documentation referred to in paragraph 10.468 above shall be of sufficient clarity and detail to enable ComReg, or a third party, as determined by ComReg, to review any relevant SoC for completeness and accuracy. Such documentation and information shall also enable ComReg, or a third party, as determined by ComReg, to assess whether Eircom has taken all reasonable steps to ensure that the risk assessment and control and governance measures referred to in paragraph 10.468 above provide reasonable assurance to ComReg that Eircom is compliant with the obligations set out in the Decision Instrument contained in Annex 8 Section 20 of this Decision.
- 10.471 Eircom shall also ensure that the SoC is kept updated as required to reflect material changes to the documentation and information detailed in paragraph 10.468 above. These updates will be provided to ComReg within one (1) month of the update being made by Eircom.

⁹⁶⁵ Structured Information means information that is documented and managed through an established business process in a formal manner and includes memos, email messages, letters, order forms, invoices, agendas, reports, etc.

⁹⁶⁶ Unstructured Information means information that is managed in an informal manner.

- 10.472 Updates or changes to any SoC provided to ComReg will be presented such that the changes are highlighted and the Statement of Compliance documents include a Version Control⁹⁶⁷ and Revision History⁹⁶⁸.
- 10.473 Eircom is also required to publish the SoC, and updates to the SoC, on its publicly available website within one (1) month of providing it to ComReg, unless otherwise agreed with ComReg.
- 10.474 Unless otherwise agreed with ComReg, Eircom shall provide to ComReg a SoC as referred to above within six (6) months of the effective date of the decision arising from this Decision and:
- (a) in the case of any offer of a new MI WHQA product, service or facility⁹⁶⁹ in the Zone B MI WHQA Markets, at least three (3) months and five (5) working days in advance of it being made available;
 - (b) in the case of any change to an existing MI WHQA product, service or facility⁹⁷⁰ in the Zone B MI WHQA Markets, at least three (3) months and five (5) working days in advance of it being made available;
 - (c) as otherwise may be required by ComReg.

Amendments to SoC Remedies proposed in the 2018 Further Consultation

- 10.475 ComReg has reconsidered the requirement on Eircom to provide a Statement of Compliance annually within 6 months of Eircom's financial period as set out in paragraph 9.401(a) of the 2018 Further Consultation which required Eircom to provide:

a full and true written statement, signed by a Director or Directors (the 'Directors') on behalf of the Board of Directors, of Eircom Ltd, to be provided annually within 6 months of Eircom's financial period end....,

⁹⁶⁷ Version Control means a standardised regime for the management of changes to documents with different versions being identified by a number, letter or code, associated with a date and timestamp.

⁹⁶⁸ Revision History means a documented list of changes to a document containing the changes from the previous draft of the document.

⁹⁶⁹ Including Related MI WHQA Elements.

⁹⁷⁰ Including Related MI WHQA Elements.

- 10.476 ComReg considers that the requirement to provide a Statement of Compliance as set out in paragraph 10.474 above satisfies the requirement to provide a SoC to ComReg and therefore the requirement to provide a SoC annually within 6 months of Eircom's financial period, as set out in paragraph 9.401(a) of the 2018 Further Consultation, has been removed.
- 10.477 ComReg has reconsidered the Statement of Compliance obligation as it relates to aspects of the Directors confirmation regarding the arrangements, structures and internal controls in Eircom as set out in paragraph 9.401(a)(iii) - (vi) of the 2018 Further Consultation. The relevant text from the 2018 Further Consultation are as follows:
- (i) The Directors explain the basis upon which the confirmation in (ii) above is made, including the information relied upon and the processes followed, in order to support the assertions made in this Statement of Compliance and to ensure that its contents are materially accurate in all respects;
 - (ii) in the event that the Directors cannot provide the confirmation required in (ii) above, the Directors shall provide the reasons for this in writing to ComReg. Such explanation should explain, amongst other things, whether;
 - a. the arrangements, structures and internal controls, referred to in (ii) are not in place, and if so, why,
 - and/or
 - b. in the Directors' opinion, the arrangements structures and internal controls, referred to in (ii) above do not provide reasonable assurance that Eircom is compliant with its regulatory obligations.
 - (iii) the Directors confirm that, in their opinion, they have conducted an appropriate review process in the period since the last Statement of Compliance was [sic] provided, pursuant to this Section, to ensure the ongoing effectiveness of the arrangements, structures and internal controls referred to in (ii) above. This confirmation shall be accompanied by a description of the review process;
 - (iv) the Directors confirm that adequate documentation is in place that, in their opinion, would be sufficient to provide evidence as to the operation and adequacy of the arrangements, structures and internal controls on which reliance is placed to ensure Eircom's regulatory compliance including, but not limited to:
 - a. risk identification as it relates to non-compliance with regulatory obligations;

- b. the design of measures and arrangements and internal controls to mitigate such risk;
- c. the operation of such controls; and
- d. a review of the adequacy of measures arrangements and internal controls.

10.478 ComReg now considers that the Directors should not be required to provide the information relied upon or the details of the process followed but they should provide a description of the process followed and a description of the information relied upon in order to be satisfied that to the best of their knowledge that Eircom is in compliance with its regulatory obligations. The text in paragraph 9.401(a)(iii) of the 2018 Further Consultation has been replaced with the text in paragraph 10.468(a)(iii) above, which states:

the Directors explain the basis upon which the confirmation is made, including a description of the information relied upon, and the process followed, by the Directors of Eircom in order to be satisfied that to the best of their knowledge the arrangements, structures and internal controls in place provide reasonable assurance that Eircom is in compliance with the obligations set out in this Decision Instrument.

10.479 The SoC obligation requires the Directors to provide a full and true written statement therefore ComReg would expect that should the Directors not be in a position to provide the required confirmation for some aspects of the arrangements, structures or internal controls in Eircom then sub paragraph 10.468(a)(ii) requiring the Directors to provide confirmation would apply. ComReg considers that Directors should also state circumstances where that confirmation cannot be given. Therefore ComReg considers that paragraph 9.401(a)(iv) of the 2018 Further Consultation, is not required and therefore has been removed in this Decision.

10.480 ComReg considers that the requirement paragraph 9.401(a)(v) of the 2018 Further Consultation for the Directors to confirm that they have conducted an appropriate review process is included in the requirements of paragraph 10.468(a)(ii) and (iii) above. These paragraphs requires the Directors to confirm that, in their opinion, the arrangements, structures, and internal controls that provide the required assurance are in place in Eircom and also require the Directors to explain the basis on which the confirmation is made.

10.481 ComReg considers that the requirement detailed in paragraph 9.401(a)(vi) of the 2018 Further Consultation is adequately captured in the Directors confirmation as set out in paragraph 10.468(a)(i),(ii) and (iii) and paragraph 10.468 (b) therefore the requirement detailed in paragraph 9.401(a)(vi) of the 2018 Further Consultation has been removed.

- 10.482 ComReg has reconsidered the inclusion of the requirement for the Statement of Compliance to include “*other categories as reasonably required by ComReg*”. ComReg has decided to remove this requirement in order to ensure certainty regarding the scope of the SoC obligation. However ComReg would expect that in order to ensure compliance with its regulatory obligations Eircom’s regulatory governance would extend to all relevant areas of business activity.
- 10.483 Finally, ComReg considered correspondence from Eircom regarding inconsistencies between the timelines for the notification and publication of products and the submission of associated statements of compliance (see Annex 14). Acknowledging that the timelines were not fully aligned and that this may create operational difficulties, ComReg has rectified the timelines applicable to the submission of Statements of Compliance so that they are aligned to the timelines applicable to the notification of pricing and material changes to existing MI WHQA products, services or facilities and of new MI WHQA products, services and facilities in the Zone B MI WHQA Markets. In both instances, this means Eircom is required to submit a Statement of Compliance at the same time as Eircom notifies a pricing change or a non-pricing material change to an existing MI WHQA product, service or facility and of a new MI WHQA product, service or facility in the Zone B MI WHQA Markets, namely at least three months and five working days in advance of the product, service or facility being made available.

11 Withdrawal of obligations in the LB TI WHQA Market, HB TI WHQA Markets and the Zone A MI WHQA Markets

- 11.1 In this Section, ComReg sets out its positions in relation to the withdrawal of certain obligations in the LB TI WHQA Markets (which continues to be regulated), as well as in the HB TI WHQA Market and Zone A MI WHQA Markets which are being de-regulated on foot of this Decision.
- 11.2 Five Respondents (ALTO, BT, Eircom, enet, and Vodafone) to the 2018 Further Consultation commented on the proposals in regarding the withdrawal of obligations. These comments are summarised and assessed in detail in Section A.1.11 of Annex 1.
- 11.3 In Section 5 of this Decision, ComReg has defined two TI WHQA Markets, namely the LB TI WHQA Market and the HB TI WHQA Market, and four separate MI WHQA Markets. In Section 6 of this Decision, ComReg's position is that Eircom has SMP in the LB TI WHQA Market, the Area 2 MI WHQA Market and the Area 4 MI WHQA Market, these latter two markets being collectively known as the Zone B MI WHQA Markets). Regulatory obligations are therefore being imposed in these markets, although ComReg is also removing certain obligations that have been imposed to date given proportionality considerations and them no longer being justified.
- 11.4 Additionally, ComReg has decided that no SP has SMP in the HB TI WHQA Market, the Area 1 MI WHQA Market and the Area 3 MI WHQA Market (these latter two markets collectively known as the Zone A MI WHQA Markets). Regulatory obligations are therefore being removed from these markets.
- 11.5 Having considered Respondents' views to the 2018 Further Consultation (and the 2016 Consultation, as appropriate) ComReg's position is that the following sunset periods should apply.
- (a) **HB TI WHQA Market:** A sunset period of six months is appropriate. During this sunset period, Eircom will not be required to provide access to new orders for HB TI WHQA LLs (although it is free to do so on a commercial basis).
 - (b) **LB TI WHQA Market:** A sunset period of six months is appropriate for certain of those obligations being withdrawn. During this sunset period, Eircom is not required to provide access to new orders for WLLs (although it is free to do so on a commercial basis).

- (c) **Zone A MI WHQA Markets:** A sunset period of twelve months is appropriate. During the first three months of this sunset period, Eircom is required to provide access to new orders for MI WHQA LLs.

11.6 In all cases above, Eircom is required to maintain access at existing prices during the relevant sunset periods. Eircom is also not required, from the effective date of this Decision, to meet other obligations (for example, in relation to transparency, non-discrimination, margin squeeze etc.).

12 Regulatory Impact Assessment

12.1 Overview

- 12.1 In this Section, ComReg sets out its Regulatory Impact Assessment ('**RIA**') of the potential impact of the proposed approach to the imposition of regulatory obligations on Eircom in the LB TI WHQA Market and Zone B MI WHQA Markets and the removal of regulatory obligations in the HB TI WHQA Market and Zone A MI WHQA Markets.
- 12.2 Of the Seven Submissions to the 2018 Further Consultation, four Respondents (ALTO, BT, Eircom, and enet) commented on the RIA. These comments are summarised, and responded to in Section A.1.12 of this Decision.
- 12.3 The RIA is an analysis of the likely effect of proposed new regulation or regulatory change. The purpose of a RIA is to establish whether regulation is actually necessary, to identify any possible negative effects which might result from imposing a regulatory obligation and to consider any alternatives. The RIA should help identify regulatory options, and should establish whether proposed regulation is likely to have the desired impact. It is a structured approach to the development of policy, and analyses the impact of regulatory options on different stakeholders. Appropriate use of the RIA should ensure that the most effective approach to regulation is adopted.
- 12.4 ComReg's approach to RIA follows ComReg's published RIA Guidelines⁹⁷¹ and takes into account the "Better Regulation" programme⁹⁷² and international best practice (for example, considering developments involving RIA published by the European Commission and the OECD).

⁹⁷¹ [ComReg Document 07/56a](#), ComReg, "Guidelines on ComReg's Approach to Regulatory Impact Assessment", 10 August 2007 (the '**RIA Guidelines**').

⁹⁷² Department of the Taoiseach, "Regulating Better", January 2004. See also "Revised RIA Guidelines: How to conduct a Regulatory Impact Analysis", June 2009, ('**The Department of An Taoiseach's Revised RIA Guidelines**'), available from: https://www.taoiseach.gov.ie/eng/RIA_and_Related_Legislation/.

- 12.5 Section 13(1) of the Communications Regulation Acts 2002 (as amended) requires ComReg to comply with Ministerial Policy Directions. In this regard, Ministerial Policy Direction 6 of February 2003⁹⁷³ requires that, before deciding to impose regulatory obligations on Undertakings, ComReg shall conduct a RIA in accordance with European and international best practice and otherwise in accordance with measures that may be adopted under the “Better Regulation” programme.
- 12.6 In conducting the RIA, ComReg has regard to the RIA Guidelines, while recognising that regulation by way of issuing decisions, e.g. imposing obligations or specifying requirements in addition to promulgating secondary legislation, may be different to regulation exclusively by way of enacting primary or secondary legislation. Our ultimate aim in conducting a RIA is to ensure that all measures are appropriate, proportionate and justified. To ensure that a RIA is proportionate and does not become overly burdensome, a common sense approach will be taken. As decisions are likely to vary in terms of their impact, if after initial investigation, a decision appears to have relatively low impact ComReg may carry out a lighter RIA in respect of those decisions.
- 12.7 ComReg’s approach to RIA follows five steps:
- (a) **Step 1:** Describe the policy issue and identify the objectives.
 - (b) **Step 2:** Identify and describe the regulatory options.
 - (c) **Step 3:** Determine the impacts on stakeholders.
 - (d) **Step 4:** Determine the impacts on competition.
 - (e) **Step 5:** Assess the impacts and choose the best option.
- 12.8 The purpose of carrying out a RIA is to aid decision-making through identifying regulatory options and analysing the impact of those options in a structured manner. The Department of An Taoiseach’s Revised RIA Guidelines state that
- “RIA should be conducted at an early stage and before a decision to regulate has been taken”⁹⁷⁴.*

⁹⁷³ Ministerial Policy Direction made by the Minister of Communications, Marine and Natural Resources on 21 February 2003.

⁹⁷⁴ See paragraph 2.1 of the Department of An Taoiseach’s Revised RIA Guidelines.

12.9 The European Commission, in reviewing its own use of impact assessments, also notes that:

“Impact assessments need to be conducted earlier in the policy development process so that alternative courses of action can be thoroughly examined before a proposal is tabled”⁹⁷⁵.

12.10 In determining the impacts of the various regulatory options, current best practice appears to recognise that full cost-benefit analysis would only arise where it would be proportionate or in exceptional cases where robust, detailed and independently verifiable data is available. Such comprehensive reviews may be undertaken by ComReg when necessary and appropriate.

12.11 Having regard to the various sets of guidelines, it is clear that the RIA should be introduced as early as possible in the assessment of potential regulatory options, where appropriate and feasible. The consideration of regulatory impact provides a discussion of options, and the RIA should therefore be integrated within the overall analysis. This is the approach which ComReg is following in this market review. The RIA is now finalised in this Decision, having taken into account all the responses to the 2016 Consultation and 2018 Further Consultation, the CCPC Response and the European Commission Response.

12.12 ComReg now conducts its RIA having regard to its approach to impose (or not) regulatory remedies identified in this Decision, along with a consideration of other options. The following Sections, in conjunction with the rest of the analysis and discussion set out elsewhere in this Decision, represent a RIA.

12.13 The rest of this Section is set out as follows

- (a) First in Section 12.2, ComReg sets out in detail ComReg’s approach to the RIA;
- (b) Then, in Section 12.3 ComReg sets out an assessment of the potential impact of the approach to the imposition of regulatory obligations on Eircom in the LB TI WHQA Market;
- (c) In Section 12.4 an assessment of the removal of regulatory obligations in the HB TI WHQA Markets is detailed;

⁹⁷⁵ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, “Second strategic review of Better Regulation in the European Union”, COM(2008) 32 final 30.01.2008, p. 6.

- (d) In Section 12.5, ComReg then sets out an assessment of the potential impact of the approach to the imposition of regulatory obligations on Eircom in the Zone B MI WHQA Markets;
- (e) In Section 12.6, an assessment of the removal of regulatory obligations in the Zone A MI WHQA Markets is detailed; and
- (f) Finally, Section 12.7 sets out ComReg's overall conclusions on the RIA.

12.2 Approach to the RIA

Principles in Selecting Remedies

- 12.14 In Sections 8 and 10 ComReg set out the legislative basis upon which it must consider the imposition of remedies. In choosing remedies, ComReg is obliged, pursuant to Regulation 8(6) of the Access Regulations, to ensure that they are:
- (a) Based on the nature of the problem identified;
 - (b) Proportionate and justified in the light of the objectives laid down in Section 12 of the Communications Regulation Acts 2002 (as amended), and Regulation 16 of the Framework Regulations; and
 - (c) Only imposed following consultation in accordance with Regulations 12 and 13 of the Framework Regulations.
- 12.15 Section 12(1)(a) of the Communications Regulation Acts 2002 (as amended) sets out the objectives of ComReg in exercising its functions in relation to the provision of electronic communications networks, electronic communications services and associated facilities, namely:
- (a) To promote competition;
 - (b) To contribute to the development of the internal market; and
 - (c) To promote the interests of users within the European Union.

Describe the Policy Issue and Identify the Objectives

- 12.16 In general, the European Commission acknowledges that once SMP is identified in markets which are defined as susceptible to *ex ante* regulation, then the regulatory framework foresees that at least one regulatory obligation would be imposed to mitigate against the exercise of SMP and to ensure the development of effective competition within and across communications markets. We have noted previously⁹⁷⁶ that the European Commission has established that the WHQA Markets are susceptible to *ex ante* regulation and on this basis ComReg has carried out the preceding analysis in this Decision.
- 12.17 Having regard to the competition problems identified in Sections 7 and 9, ComReg's objectives are to enhance the development of effective competition in relevant downstream markets and to help ensure that consumers can reap maximum benefits in terms of price, choice and quality of service. In so doing, ComReg is seeking to prevent exploitative behaviour and/or restrictions or distortions in competition amongst SPs. ComReg is also seeking to provide regulatory certainty to all SPs through the development of an effective and efficient forward-looking regulatory regime that serves to promote competition.
- 12.18 In pursuing these objectives, ComReg has considered the impact of specific forms of regulation in the LB TI WHQA Market and the Zone B MI WHQA Markets. As a result, ComReg's position is that the remedies specified in Sections 8 and 10 are both appropriate and justified in light of the market analysis and the identified competition problems. The regulatory options are further considered below.

Identify and Describe the Potential Regulatory Options

- 12.19 ComReg recognises that regulatory measures should be kept to the minimum necessary to address the identified market failure in an effective, efficient and proportionate manner. There are a range of potential regulatory options available to ComReg to address the potential competition problems in the LB TI WHQA Market and the Zone B MI WQHA Markets.

⁹⁷⁶ See paragraph 2.18.

- 12.20 In this regard, regulation can be considered to be incremental, such that only obligations are imposed which are necessary and proportionate to the competition problems which have been identified. The lightest measure that can be imposed is the obligation of transparency⁹⁷⁷. Should this be insufficient to address competition problems on its own, ComReg may apply a non-discrimination obligation⁹⁷⁸. If this is still not sufficient, ComReg may next consider the imposition of an access obligation⁹⁷⁹, or accounting separation obligations⁹⁸⁰. The final measure to be considered is the imposition of a price control and cost accounting remedy⁹⁸¹.
- 12.21 Given ComReg has identified in Sections 6 that no Undertaking is likely to have SMP in the HB TI WHQA Market and the Zone A MI WHQA Markets, ComReg cannot, as a matter of law, impose any SMP based regulatory obligations in these markets. However, as noted in Section 11, ComReg has decided upon sunset periods of 6 and 12 months respectively for the withdrawal of existing remedies imposed upon Eircom in these markets (subject to the requirements specified therein).

12.3 RIA in the LB TI WHQA Market

- 12.22 In Sections 5 and 6 of this Decision, ComReg set out its position on the definition of LB TI WHQA Market, and carried out an assessment of competition within this market. ComReg consequently decided to designate Eircom with SMP in the LB WHQA Market, as set out in Section 6. In Section 7, ComReg considered, on the basis of its SMP finding, the potential for competition problems to arise in the LB TI WHQA Market over the review period in question. As noted above, in order to address the identified competition problems in the LB TI WHQA Market, ComReg is required to impose on Eircom one or more (as appropriate) of the obligations (or remedies) set out below:
- (a) Access;
 - (b) Transparency;
 - (c) Non-Discrimination;
 - (d) Price Control and Cost Accounting; and

⁹⁷⁷ Regulation 9 of the Access Regulations.

⁹⁷⁸ Regulation 10 of the Access Regulations.

⁹⁷⁹ Regulation 12 of the Access Regulations.

⁹⁸⁰ Regulation 11 of the Access Regulations.

⁹⁸¹ Regulation 13 of the Access Regulations.

(e) Accounting Separation.

12.23 First, ComReg must consider the question of regulatory forbearance, and then incremental imposition of one or more of the obligations outlined above.

Forbearance

12.24 In the case of the current analysis of the LB TI WHQA Market, ComReg is required⁹⁸² to impose at least some level of regulation on Eircom, having been designated as having SMP. Regulation 8(1) of the Access Regulations and Regulation 27(4) of the Framework Regulations requires ComReg to impose at least some level of regulation on Undertakings ultimately designated as having SMP. In Section 6, ComReg set out its position that Eircom has SMP in the LB TI WHQA Market. In Section 7, ComReg identified a range of competition problems that could occur in the LB TI WHQA Market, absent regulation.

12.25 In Section 7, ComReg set out its position that, absent regulation, Eircom has the ability and incentive to engage in exploitative and/or exclusionary behaviour in the LB TI WHQA Market. In view of this, absent the imposition of any remedies within the LB TI WHQA Market, it is ComReg's position that the market would not likely function effectively. For example, access could be effectively refused or materially delayed (resulting in certain consumers not being able to use retail TDM LLs (or other) services or having to incur the additional costs in accessing such services). In addition, the price for LB TI WHQA LLs may be set above the level that would pertain in a competitive outcome and/or Eircom may be in a position to distort competition in other markets (such as for MI retail LLs⁹⁸³). As highlighted in Section 8⁹⁸⁴, it is ComReg's position that the option of regulatory forbearance in the LB TI WHQA Market is not, therefore, appropriate or justified. By not imposing any regulatory obligations on Eircom, ComReg would be acting contrary to its own regulatory obligations. Per Regulation 8(1) of the Access Regulations and Regulation 27(4) of the Framework Regulations, once SMP has been identified ComReg is obliged to impose at least one regulatory remedy.

⁹⁸² Per Regulation 8(1) of the Access Regulations.

⁹⁸³ For example, a purchaser of MI retail LLs may also require LB TI Retail LLs and a SP may not be in a position to service all the purchaser's needs, absent having access to LB TI WHQA LLs.

⁹⁸⁴ See paragraphs 8.31 to 8.35.

Transparency Obligations

- 12.26 As noted in paragraphs 8.22 to 8.24, Eircom has previously been designated with SMP under the 2008 Decision and is currently subject to transparency obligations in that market.
- 12.27 ComReg's position in Section 7.1 is that Eircom should be required to comply with transparency obligations in order to minimise information asymmetries and, therefore, facilitate effective access to LB TI WHQA and promote effective competition in downstream markets. In Section 7.1 ComReg identified competition problems which, absent regulation, could potentially arise in the LB TI WHQA Market (and related markets). The competition problems identified included inter alia potentially excessive and/or discriminatory pricing, as well as a potential for outright or constructive (e.g. through protracted negotiations on terms and conditions) refusal to supply with a view to extracting prices above efficient cost and/or distorting competition in related markets. In this regard, ComReg has decided that, as part of a general transparency obligation pursuant to Regulation 9 of the Access Regulations, Eircom shall be required to publish a LLRO setting out the contractual terms and conditions and technical basis upon which Service Providers can obtain access to LB TI WHQA. It is further decided that Eircom is being required to publish wholesale prices and to provide advance notice of price/product changes to ComReg and to other SPs.
- 12.28 ComReg recognises that the LLRO and other transparency obligations may require some slightly increased level of implementation. However, as the LLRO is effectively the standard offer of contract for LB TI WHQA services and associated facilities which Eircom has already published, ComReg's position is that the incremental level of implementation associated with publishing such standard contracts and in meeting the other transparency obligations should be relatively contained.
- 12.29 ComReg has considered whether transparency obligations alone would be sufficient to address the competition problems identified in Section 7 and does not consider this to be the case. For example, problems inter alia associated with excessive pricing, discriminatory behaviour (on price or non-price grounds) and/or impeded or delayed access would not be capable of being adequately addressed through transparency obligations alone.

Non-Discrimination Obligations

- 12.30 The principle of non-discrimination is designed to ensure that Undertakings with market power do not distort competition, in particular, where they are vertically-integrated Undertakings that supply services to Undertakings with whom they compete on downstream markets. As discussed in Section 7 a potential competition problem arises when an integrated operator has SMP in one market which has links with other adjacent markets either at a similar (horizontal) or different (vertical) level in the production or distribution chain. In such circumstances the SMP operator may attempt to transfer (leverage) its market power to such horizontally or vertically related markets. This could enable the SMP operator to strengthen its position in those related markets and potentially also reinforce its existing market power in the SMP market in question.
- 12.31 As noted in Section 8⁹⁸⁵, Eircom currently has an obligation of non-discrimination with respect to the provision of LB TI WHQA and additional associated facilities.
- 12.32 In Section 7 ComReg identified that Eircom has the ability and incentive to engage in such behaviour which can impact upon downstream competition and consumers. For example, Eircom could offer different access products or service quality to different buyers. Equally so, Eircom could treat Access Seekers differently to its own retail subscribers. As a consequence, ComReg proposes to require that Eircom is subject to non-discrimination obligations, including in respect of LB TI WHQA prices or other charges and ensure that access and information are provided to all other Undertakings under the same conditions as Eircom provides to itself or to its downstream retail arm.
- 12.33 ComReg has considered whether non-discrimination obligations alone would be sufficient to address the competition problems identified in Section 7 and does not consider this to be the case. For example, excessive/discriminatory pricing, outright or constructive denial of access problems, delaying tactics or poor service quality issues could inter alia still remain in the presence of a transparency obligation. Therefore, the imposition of non-discrimination obligations is both proportionate and justified having regard to the competition problems identified.

⁹⁸⁵ See paragraph 8.21.

Access Obligations

- 12.34 An access obligation gives SPs the right to request access to LB TI WHQA products and associated facilities and establishes the principles on which the relevant products and services should be made available. As noted in Section 8⁹⁸⁶, Eircom has a range of access obligations currently imposed upon it by virtue of its existing designation with SMP in the 2008 Decision. These include obligations to negotiate in good faith with Undertakings requesting access; not withdraw access to facilities already granted and continue to provide such facilities in accordance with existing terms and conditions and specifications; and meet reasonable requests for access to specified network elements, facilities or both such elements and facilities.
- 12.35 ComReg's position is that such obligations to provide LB TI WHQA, which largely mirror existing obligations, are both proportionate and justified in view of the competition problems identified. ComReg has considered whether obligations other than those relating to access would in themselves resolve the competition problems identified and does not consider this to be the case. Similarly, the imposition of access obligations on their own also would not likely prevent all possible forms of exploitative/exclusionary behaviour in the LB TI WHQA Market such as excessive pricing, discrimination (on price or quality grounds) or ensure transparency of terms and conditions of access.

Price Control and Cost Accounting Obligations

- 12.36 The purpose of price control and cost accounting obligations is to ensure that prices charged are not set above efficient cost (or cause a margin squeeze) and to promote efficiency and sustainable retail competition while maximising consumer benefits. As noted in Section 8⁹⁸⁷, Eircom is currently subject to a price control obligation of cost orientation and cost accounting pursuant to the 2008 Decision and the 2012 Pricing Decision.
- 12.37 In the review of competition problems in Section 7, ComReg considered on a forward-looking basis the scope for competition problems to arise absent the imposition of price control and cost accounting obligations. Furthermore, Section 7 identifies a number of competition, efficiency and ultimately consumer impacts arising from LB TI WHQA prices that are set above efficient cost.

⁹⁸⁶ See paragraphs 8.17 to 8.20.

⁹⁸⁷ See paragraphs 8.25 to 8.26.

- 12.38 ComReg has decided that Eircom should be subject to a cost-orientation obligation with respect to access to LB TI WHQA. ComReg's analysis, set out in Section 7, indicates that Eircom has the ability and incentive to engage in excessive pricing in the LB TI WHQA Market, absent regulation. Imposing a cost orientation obligation on Eircom also promotes harmonisation and regulatory certainty.
- 12.39 In general, if specific price control obligations are to be meaningful, it may be necessary to have a clear and comprehensive understanding of the costs associated with Eircom's provision of LB TI WHQA products. ComReg has decided to continue to impose a cost accounting obligation on Eircom having regard to its integrated position across several markets (in particular noting its SMP designations in a number of these markets). In the discussion of competition problems (Section 7), Eircom was identified as having particular ability and incentives to leverage its SMP position from the LB TI WHQA Market into related markets. There is thus still a need to ensure sufficient visibility of how costs are allocated across LB TI WHQA and other horizontally and vertically-related inputs. As Eircom is already subject to a cost accounting obligation across a number of regulated markets, including LB TI WHQA, ComReg considers any incremental burden is minimal.
- 12.40 ComReg has considered whether price control obligations alone would be sufficient to address the competition problems identified in Section 7, and does not consider this to be the case. For example, discriminatory behaviour (on price or non-price grounds) or denial of access problems would not be capable of being adequately addressed through such obligations alone.

Accounting Separation Obligations

- 12.41 As noted in Section 8⁹⁸⁸, in general, the purpose of an accounting separation obligation would be to provide a higher level of detail of information than that which can be derived from the statutory financial statements of Undertakings designated with SMP, with the objective of reflecting, as closely as possible, the performance of those parts of the Undertaking's business were it to operate on a standalone basis. In the case of vertically-integrated Undertakings, it can support non-discrimination obligations and prevent unfair cross-subsidies to other services.

⁹⁸⁸ See Section 8.10 of this Decision.

- 12.42 Eircom currently has an obligation to maintain separated accounts pursuant to the 2008 Decision and the 2010 Accounting Separation Decision. In Section 7, ComReg has identified potential competition problems associated with possible price-related leveraging to be particularly pertinent in the case of Eircom (absent regulation) which highlights the importance of continuing to ensure a transparent and effective mechanism of accounting separation.
- 12.43 Having regard to Eircom's integrated position across several related markets (in particular noting its SMP designations in a number of these markets), separated accounts help disclose such possible competition problems and make visible the wholesale and internal transfer prices of a dominant operator's services, thereby facilitating transparency as regards any potential misallocation of costs across different services. The main objective of accounting separation is to make the practical implementation of non-discrimination and cost-orientation transparent by showing cross-subsidisation between products. Requiring separated accounts for the main products and services creates more transparency on internal transfer pricing and repartition of common and joint costs. It is therefore considered proportionate and justified to continue to impose an obligation on Eircom to maintain separated accounts.

Determined Impacts on Stakeholders

- 12.44 Given that ComReg has designated Eircom with SMP in the LB TI WHQA Market, it is ComReg's position, as outlined paragraphs 12.24 to 12.25 above, that the option of regulatory forbearance is not appropriate or justified and can be discounted when considering the impact on stakeholders.
- 12.45 Having regard to the SMP designation in Section 6 (which requires ComReg to impose at least some level of regulation⁹⁸⁹) as well as the review of competition problems and remedies in Sections 7 and 8 respectively, ComReg has, on an incremental basis, identified why a range of appropriate remedies are necessary, proportionate and justified, while at the same time discounting other remedies where appropriate.
- 12.46 Having regard to the analysis and assessment of the LB TI WHQA Market, ComReg groups remedies into four options for the purpose of considering the incremental impact of each option on stakeholders:
- (a) **Option 1:** Impose Access obligations only;

⁹⁸⁹ Pursuant to Regulation 8(1) of the Access Regulations and Regulation 27(4) of the Framework Regulations.

- (b) **Option 2:** Impose Access, Transparency and Non-Discrimination obligations;
- (c) **Option 3:** Impose Access, Transparency, Non-Discrimination and Price Control and Cost Accounting obligations;
- (d) **Option 4:** Impose Access, Transparency, Non-Discrimination, Price Control and Cost Accounting and Accounting Separation obligations.

Option 1: Impose Access Obligations only		
Impact on Eircom	Impact on Competition	Impact on Consumers
<p>Eircom would benefit from reduced regulatory burden relative to 2008 Decision.</p> <p>There would be increased flexibility for Eircom to use its market power at wholesale level to engage in exploitative behaviour and/or influence market developments at the wholesale/retail level. It could facilitate extraction of excessive rents from LB TI WHQA purchasers and ultimately End Users.</p> <p>Eircom's incentives to innovate and increase efficiency may be reduced where prices are set above efficient cost are paid for by competitors and, in turn, by their customers.</p> <p>Increased risk of disputes and legal challenges involving Eircom's LB TI WHQA LL services arising from ineffective transparency and other preventative measures to protect against non-discrimination. Disputes could increase legal and regulatory costs faced by Eircom.</p>	<p>High risk that, even though access mandated in principle, there would be significant scope for it to be effectively undermined through such practices as high or discriminatory pricing, imposing unreasonable terms and conditions, delaying tactics, poor service quality, etc.</p> <p>Where access is provided to downstream competitors on exploitative or discriminatory terms (relative to that provided to Eircom's own retail arm) this could significantly disadvantage existing rivals and distort existing competition in downstream markets.</p> <p>Ineffective access to LB TI WHQA LLs could also raise barriers to expansion for existing entrants in downstream markets due to inability to guarantee end-to-end connectivity to Eircom's established customer base.</p> <p>LB TI WHQA prices set above efficient cost would raise financial barriers to entry and expansion for smaller or newer entrants in downstream retail and wholesale markets. Where LB TI WHQA prices are set above efficient cost, this could limit scope for downstream pricing innovations by Eircom's downstream rivals.</p> <p>Scope would persist for Eircom to squeeze competitors across related wholesale/retail markets through its relative pricing of LB TI WHQA.</p> <p>Regulatory certainty is reduced given wholesale access and pricing uncertainty. A potentially increased incidence of disputes could also raise legal and regulatory costs for Eircom's rivals.</p>	<p>There would be a risk that, even though access to LB TI WHQA is mandated, there would be significant scope for it to be effectively undermined through such practices as high or discriminatory pricing, unreasonable terms and conditions, delaying tactics, poor service quality, etc.</p> <p>If downstream competition is distorted or investments discouraged due to ineffective LB TI WHQA access, consumers would potentially have reduced service choice, quality and innovation.</p> <p>Above-cost LB TI WHQA could put upward pressure (or slow the rate of any decline) on retail prices. Above-cost LB TI WHQA may also limit scope for retail pricing innovations thereby potentially depriving consumers of bundles/packages.</p>

	<p>Differences in regulatory approach between Ireland and other EU countries and deviations from European Commission guidance could also generate legal uncertainty for pan-European operators.</p>	
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Option 2: Impose Access, Transparency and Non-Discrimination Obligations		
Impact on Eircom	Impact on Competition	Impact on Consumers
<p>Eircom would benefit from a reduced regulatory burden relative to 2008 Decision.</p> <p>There would be increased flexibility for Eircom to use its market power at wholesale level to engage in exploitative behaviour and/or influence market developments at the wholesale/retail level. It could facilitate extraction of excessive rents from LB TI WHQA purchasers and ultimately End Users.</p> <p>Eircom's incentives to innovate and increase efficiency may be reduced where LB TI WHQA prices set above efficient cost are paid for by competitors and, in turn, by their customers.</p> <p>While risk of disputes and legal challenges involving Eircom's LB TI WHQA services might be eased somewhat relative to Option 1, risk of disputes would persist due to lack of direct regulatory oversight in respect of Eircom's LB TI WHQA prices. Disputes could increase the legal and regulatory costs faced by Eircom.</p>	<p>While risk of impeding access to LB TI WHQA may be moderated somewhat relative to Option 1, effective access to LB TI WHQA may still be undermined through excessive LB TI WHQA pricing (including in circumstances where Eircom is vertically integrated).</p> <p>Where access is provided to downstream competitors on exploitative terms, this could significantly disadvantage existing rivals and distort existing competition in downstream markets.</p> <p>Ineffective access to LB TI WHQA (through exploitative or exclusionary pricing) could also raise barriers to expansion for existing competitors in downstream markets.</p> <p>Regulatory certainty is improved although remains reduced given wholesale pricing uncertainty. A potentially increased incidence of disputes could also raise legal and regulatory costs for Eircom's rivals.</p> <p>Differences in regulatory approach between Ireland and other EU countries (broader set of obligations are generally envisaged by other NRAs) and deviations from European Commission guidance could also generate legal uncertainty for pan-European operators considering investments in Ireland.</p>	<p>There would be a risk that, even though LB TI WHQA is mandated in principle, there would be significant scope for it to be effectively undermined through such practices as excessive pricing, and ultimately consumers would be impacted (through say, higher prices).</p> <p>If downstream competition is distorted or investments discouraged due to ineffective LB TI WHQA access, consumers would potentially have reduced service choice, quality and innovation.</p> <p>Above-cost LB TI WHQA prices could put upward pressure (or slow the rate of any decline) on retail prices. Above-cost LB TI WHQA prices would also limit scope for retail pricing innovations thereby potentially depriving consumers of new and innovative bundles/packages involving fixed data (and other) services.</p>

Option 3: Impose Access, Transparency, Non-Discrimination and Price Control and Cost Accounting Obligations		
Impact on Eircom	Impact on Competition	Impact on Consumers
<p>As Eircom is currently subject to price control and cost accounting obligations (including cost orientation) pursuant to the 2008 Decision, the incremental burden of such obligations is not likely to be significant.</p> <p>Cost orientation ensures that Eircom can recover its efficiently incurred cost plus a reasonable rate of return.</p> <p>Eircom’s regulatory burden under Option 3 would not be significantly less than under Option 4 (below) as Eircom is already subject to accounting separation obligations in other SMP markets. Under Option 3 there would be increased flexibility for Eircom to obscure internal transfer prices and the real costs of LB TI WHQA if no accounting separation obligation imposed. There would thus be an increased opportunity for Eircom’s non-discrimination and/or price control obligations to be undermined.</p> <p>Risk of disputes and legal challenges involving Eircom’s LB TI WHQA prices may be eased relative to Options 1 and 2 due to price control obligation. However, a lack of adequate cost accounting data may generate uncertainty regarding Eircom’s compliance with non-discrimination and price control obligations, thus also contributing to risk of disputes.</p>	<p>Regulating LB TI WHQA prices at efficient cost would reinforce the effectiveness of the access, transparency and non-discrimination obligations thus reducing risk of competitive distortions in downstream retail markets and potentially lowering barriers to expansion for SPs.</p> <p>Regulating LB TI WHQA prices at efficient cost would potentially provide greater scope for retail pricing innovations by rivals.</p> <p>Greater consistency with EU guidance and other regulatory decisions would promote legal certainty and a more predictable environment.</p> <p>While greater certainty that LB TI WHQA prices would be set at efficient cost potentially moderates risk of disputes relative to Options 1 and 2, the lack of transparency of Eircom’s costs due to absence of a cost accounting systems may still contribute to an ineffective cost orientation price control and scope for discrimination (relative to its own retail arm) and consequent risk of disputes.</p>	<p>Availability of LB TI WHQA access would facilitate interoperability of services by enabling subscribers of other networks to call Eircom’s subscribers.</p> <p>Reduced risk of competitive distortions and more level playing field in downstream markets and greater wholesale pricing certainty helps facilitate retail price and service innovations (e.g. in terms of packages/bundles offered).</p> <p>Reduced risk of high LB TI WHQA prices being passed through to End Users in form of higher prices relative to Options 1 and 2 above.</p> <p>Potential for discriminatory behaviour due to lack of accounting separation may impact on downstream competition and investment with consequent negative implications in terms of price and service choice over time.</p>

Option 4: Impose Access, Transparency, Non-Discrimination, Price Control and Cost Accounting and Accounting Separation Obligations		
Impact on Eircom	Impact on Competition	Impact on Consumers
<p>Existing regulatory burden on Eircom as per the 2008 Decision would remain.</p> <p>Risk of disputes and legal challenges involving Eircom's LB TI WHQA prices would be eased relative to Options 1, 2 and 3.</p>	<p>As set out for Option 3 above, greater consistency with EU guidance and other regulatory decisions would promote legal certainty and a more predictable environment for potential investors.</p> <p>Greater certainty that LB TI WHQA prices would be set at efficient cost, complemented by greater visibility of internal transfers to support non-discrimination obligation, moderates risk of disputes relative to Options 1, 2 and 3.</p>	<p>Reduced risk of competitive distortions and more level playing field in downstream markets and greater wholesale pricing certainty helps facilitate retail price and service innovations (e.g. in terms of packages/bundles offered).</p> <p>Reduced risk of above-cost LB TI WHQA prices being passed through to End Users in form of higher prices relative to Options 1 and 2 above.</p>

Likely Impacts and the Best Option

- 12.47 In the discussion on the approach on remedies set out in Section 7.1, ComReg has taken full account of its obligations under Regulation 8(6) of the Access Regulations (including that any remedies are to be based on the nature of the problem identified), as well as its relevant objectives as set out under Section 12 of the Communications Regulation Acts 2002 (as amended).
- 12.48 ComReg's position is that, absent regulation, there is the potential and incentive for Eircom, as the SP designated with SMP in the LB TI WHQA Market, to engage in exploitative and exclusionary behaviours which would impact on competition and consumers. In Section 7 ComReg provided examples of potential competition problems and the impact of these on competition and consumers. ComReg has also highlighted its objectives in regulating the LB TI WHQA Market in paragraph 12.15 above, in particular, preventing restrictions or distortions of competition in affected downstream retail and wholesale markets and helping to ensure that consumers can achieve maximum benefits in terms of price, choice and quality of service.
- 12.49 The imposition of appropriate *ex ante* remedies to address such competition problems was discussed and justified in Section 7 and each of the specific remedies is designed to promote the development of effective competition and to protect End Users. Given that a full suite of remedies is to be applied on Eircom, it is ComReg's belief that the risk of competition problems and associated impacts should be minimised. This will ultimately be to the benefit of SPs and End Users of downstream retail and wholesale services.
- 12.50 The maintenance of existing regulation on Eircom in the LB TI WHQA Market (i.e. Option 4) is considered justifiable in that it is required to ensure that Eircom does not exploit its market power at the wholesale level to the detriment of competition in both related markets, and to the ultimate detriment of consumers. In Section 7, a broad range of potential competition problems were identified for Eircom, which has the ability and incentives for both exploitative and exclusionary practices given its continuing significant presence in upstream and downstream markets.
- 12.51 In particular, Eircom's strong position on downstream retail markets (see Section 4 of this Decision) implies that the ability and incentives to engage in vertical leveraging/foreclosure would seem particularly strong for Eircom. In view of its control over a number of key input markets, Eircom has the ability and incentives to impede downstream competitors through price (e.g. excessive/ discriminatory pricing) and/or non-price means (e.g. by not facilitating access to essential services in the LB TI WHQA Market). The regulatory obligations are designed to specifically address the competition problems identified and are proportionate in that they are the least burdensome means of achieving this objective.

12.4 HB TI WHQA Market Considerations

- 12.52 As set out in Section 6, ComReg's position is that no Undertaking is likely to have SMP in the HB TI WHQA Market. As a result, no regulatory obligations are being imposed on any SP in this market.
- 12.53 At present, Eircom is regulated in the HB TI WHQA Market area by virtue of the 2008 Decision. As a result of the analysis contained in this Decision, the existing regulatory obligations on Eircom will be withdrawn in the HB TI WHQA Market (see Section 11 above). In particular, ComReg's position is that given the size of this market it is no longer one which is worth monopolising. ComReg's finding that no Undertaking is likely to have SMP in the HB TI WHQA Market implies that the market is no longer susceptible to *ex ante* regulation and, therefore, regulation is not warranted.
- 12.54 On that basis, ComReg has decided that the removal of regulation from the HB TI WHQA Market is warranted. Therefore, ComReg's regulatory options in the HB TI WHQA Market are limited to the timing of the withdrawal of existing regulation. As noted in Section 11, ComReg has decided upon a sunset period of 6 months for the withdrawal of existing remedies imposed upon Eircom in the HB TI WHQA Market.
- 12.55 This will, amongst other things, allow Access Seekers sufficient time to seek alternative forms of HB TI WHQA supply, if required, and thereby preserve continuity in the supply of retail/wholesale services (were Eircom to withdraw, or significantly alter, its terms and conditions of HB TI WHQA supply following deregulation). To ultimately ensure the protection of consumer interests, ComReg will continue to monitor the effectiveness of competition within the HB TI WHQA Market, notwithstanding the removal of regulation. In this respect, ComReg reserves its right to re-examine competitive conditions within the HB TI WHQA Market and, if appropriate, to intervene accordingly.
- 12.56 ComReg also decided that, from the effective date of this Decision, Eircom will no longer have to meet new requests for access in the HB TI WHQA Market in the context of regulatory requirements (although is free to do so commercially). ComReg believes that this is appropriate given it would be illogical to maintain this requirement for a short period which, having expired, would then be subject to commercial negotiation. Additionally, ComReg notes that the tendency towards sufficient competitive constraints being present in the HB TI WHQA Market means that this market outcome now facilitates the removal of existing obligations on Eircom. These dynamics also facilitate a reduction in Eircom's regulatory burden and given the market can operate effectively absent regulation.

12.57 Given regulatory obligations cannot be imposed in the HB TI WHQA Market (aside from the limited obligations regarding the sunset period), this RIA does not further consider regulatory options with respect to the HB TI WHQA Market.

12.5 Zone B MI WHQA Markets

12.58 In Section 5, ComReg set out its position on the definition of the Area 2 MI WHQA Market and Area 4 MI WHQA Market (referred to in this RIA as the '**Zone B MI WHQA Markets**'), followed by an assessment in Section 6 of competition within these markets. ComReg consequently as decided to designate Eircom with SMP in the Zone B MI WHQA Markets, as set out in Section 6. In Section 9 ComReg considered, on the basis of the SMP finding, the potential for competition problems to arise in the Zone B MI WHQA Markets over the review period in question. In order to address the identified competition problems in the Zone B MI WHQA Markets, ComReg is required to impose on Eircom one or more (as appropriate) of the obligations (or remedies) set out below:

- (a) Access;
- (b) Transparency;
- (c) Non-Discrimination;
- (d) Price Control and Cost Accounting; and/or
- (e) Accounting Separation.

12.59 First, ComReg must consider the question of regulatory forbearance, and then incremental imposition of one or more of the obligations outlined above.

Forbearance

12.60 In the case of the current analysis of the Zone B MI WHQA Markets, ComReg is required⁹⁹⁰ to impose at least some level of regulation on Eircom, having been designated as having SMP. Regulation 8(1) of the Access Regulations and Regulation 27(4) of the Framework Regulations requires ComReg to impose at least some level of regulation on Undertakings ultimately designated as having SMP. In Section 6, ComReg set out its view that Eircom has SMP in the Zone B MI WHQA Markets. In Section 9, ComReg identified a range of competition problems that could occur in the Zone B MI WHQA Markets, absent regulation.

⁹⁹⁰ Per Regulation 8(1) of the Access Regulations.

12.61 In Section 9, ComReg set out its position that, absent regulation, Eircom has the ability and incentive to engage in exploitative and/or exclusionary behaviour in the Zone B MI WHQA Markets (and related markets). In view of this, absent the imposition of any remedies within the Zone B MI WHQA Markets, it is ComReg's position that such markets would not likely function effectively. For example, access could be effectively refused or materially delayed (resulting in certain consumers not being able to use retail MI LLs (or other) services or having to incur the additional costs in accessing such services). In addition, the price for MI WHQA LLs may be set above the level that would pertain in a competitive outcome and/or Eircom may be in a position to distort competition in other markets, such as the retail MI LL market. As highlighted in this Section, it is ComReg's position that the option of regulatory forbearance in the Zone B MI WHQA Markets is not, therefore, appropriate or justified. By not imposing any regulatory obligations on Eircom, ComReg would be acting contrary to its own regulatory obligations, as per Regulation 8(1) of the Access Regulations and Regulation 27(4) of the Framework Regulations, once SMP has been identified ComReg is obliged to impose at least one regulatory remedy.

Transparency Obligations

- 12.62 As noted in Section 2.3 above Eircom has previously been designated with SMP under the 2008 Decision and is currently subject to transparency obligations in that market.
- 12.63 ComReg's position in Section 10 is that Eircom should be required to comply with transparency obligations in order to minimise information asymmetries and, therefore, facilitate effective access to WHQA LLs and promote effective competition in related and downstream markets. In Section 9 ComReg identified competition problems which, absent regulation, could potentially arise in the Zone B MI WHQA Markets (and related markets). The competition problems identified included inter alia potentially excessive and/or discriminatory pricing, as well as a potential for outright or constructive (e.g. through protracted negotiations on terms and conditions) refusal to supply with a view to extracting prices above efficient cost and/or distorting competition in related markets. In this regard, ComReg has decided that, as part of a general transparency obligation pursuant to Regulation 9 of the Access Regulations, Eircom is being required to publish a LLRO setting out the contractual terms and conditions and technical basis upon which Service Providers can obtain access to MI WHQA LLs. It has been further decided to require Eircom publish wholesale prices and to provide advance notice of price/product changes to ComReg and to other SPs.

- 12.64 ComReg recognises that the LLRO and other transparency obligations may require some slightly increased level of implementation. However, as the LLRO is effectively the standard offer of contract for MI WHQA LL products, services and associated facilities which Eircom has already largely published, ComReg's position is that the incremental level of implementation associated with publishing such standard contracts and in meeting the other transparency obligations should be relatively contained.
- 12.65 ComReg is also requiring Eircom to continue to provide information to SPs regarding its roll out plans, as well as information relating to wholesale MI WHQA products, services, and facilities such as the expected time for service availability. While ComReg has given some further specificity to the detail such obligations they largely mirror existing obligations. In any event, ComReg considered that such enhanced obligations are necessary and justified.
- 12.66 Furthermore, as detailed in Section 10, ComReg has decided to require that Eircom submit to ComReg a written Statement of Compliance adequately demonstrating its compliance with all of its regulatory obligations. While ComReg discusses this obligation here in the context of transparency obligations, it applies with respect to all of its other obligations.
- 12.67 ComReg has considered whether transparency obligations alone would be sufficient to address the competition problems identified in Section 9 and does not consider this to be the case. For example, problems inter alia associated with excessive pricing, discriminatory behaviour (on price or non-price grounds) and/or impeded or delayed access would not be capable of being adequately addressed through transparency obligations alone.

Non-Discrimination Obligations

- 12.68 The principle of non-discrimination is designed to ensure that Undertakings with market power do not distort competition, in particular, where they are vertically-integrated Undertakings that supply services to Undertakings with whom they compete on downstream markets. As discussed in Section 9 a potential competition problem arises when an integrated operator has SMP in one market which has links with other adjacent markets either at a similar (horizontal) or different (vertical) level in the production or distribution chain. In such circumstances the SMP operator may attempt to transfer (leverage) its market power to such horizontally or vertically related markets. This could enable the SMP operator to strengthen its position in those related markets and potentially also reinforce its existing market power in the SMP market in question.

- 12.69 As noted in Section 10⁹⁹¹, Eircom currently has an obligation of non-discrimination with respect to the provision of MI WHQA LLs and additional associated facilities.
- 12.70 In Section 9 ComReg identified that Eircom has the ability and incentive to engage in such behaviour which can impact upon downstream competition and consumers. For example, Eircom could offer different access products or service quality to different buyers. Equally so, Eircom could treat Access Seekers differently to its own retail subscribers. As a consequence, ComReg proposes to require that Eircom is subject to non-discrimination obligations, including in respect of Zone B MI WHQA prices or other charges and ensure that access and information are provided to all other Undertakings under the same conditions as Eircom provides to itself or to its downstream retail arm.
- 12.71 ComReg has considered whether non-discrimination obligations alone would be sufficient to address the competition problems identified in Section 9 and does not consider this to be the case. For example, excessive/discriminatory pricing, outright or constructive denial of access problems, delaying tactics or poor service quality issues could inter alia still remain in the presence of a transparency obligation. Therefore, the imposition of non-discrimination obligations is both proportionate and justified having regard to the competition problems identified.

Access Obligations

- 12.72 An access obligation gives SPs the right to request access to MI WHQA LL products and associated facilities and establishes the principles on which the relevant products and services should be made available. As noted in Section 10⁹⁹², Eircom has a range of access obligations currently imposed upon it by virtue of its existing designation with SMP in the 2008 Decision. These include obligations to negotiate in good faith with Undertakings requesting access; not withdraw access to facilities already granted and continue to provide such facilities in accordance with existing terms and conditions and specifications; and meet reasonable requests for access to specified network elements, facilities or both such elements and facilities.

⁹⁹¹ See paragraph 10.18.

⁹⁹² See paragraphs 10.14 to 10.17.

- 12.73 ComReg's position is that such obligations to provide MI WHQA LL products, services and facilities, which largely mirror existing obligations, are both proportionate and justified in view of the competition problems identified. ComReg has considered whether obligations other than those relating to access would in themselves resolve the competition problems identified and does not consider this to be the case. Similarly, the imposition of access obligations on their own also would not likely prevent all possible forms of exploitative/exclusionary behaviour in the Zone B MI WHQA Markets such as excessive pricing, discrimination (on price or quality grounds) or ensure transparency of terms and conditions of access.

Price Control and Cost Accounting Obligations

- 12.74 The purpose of price control and cost accounting obligations is to ensure that prices charged are not set above efficient cost and to promote efficiency and sustainable retail competition while maximising consumer benefits. As noted in Section 10⁹⁹³, Eircom is currently subject to a price control obligation of cost orientation and cost accounting pursuant to the 2008 Decision and the 2012 Pricing Decision.
- 12.75 In the review of competition problems in Section 9, ComReg considered on a forward-looking basis the scope for competition problems to arise absent the imposition of price control and cost accounting obligations. Furthermore, Section 9 identifies a number of competition, efficiency and ultimately consumer impacts arising from MI WHQA LL prices that are set above efficient cost.
- 12.76 ComReg has decided that Eircom should be subject to a cost-orientation obligation with respect to various access products, service and facilities. ComReg's analysis, set out in Sections 9 and 10, indicates that Eircom has the ability and incentive to engage in excessive pricing in the provision of access in the Zone B MI WHQA Markets, absent regulation.

⁹⁹³ See paragraphs 10.22 to 10.31.

- 12.77 In general, if specific price control obligations are to be meaningful, it may be necessary to have a clear and comprehensive understanding of the costs associated with Eircom's provision of WHQA products, services and facilities. ComReg has decided to continue to impose a cost accounting obligation on Eircom having regard to its integrated position across several markets (in particular noting its SMP designations in a number of these markets). In the discussion of competition problems in Section 9, Eircom was identified as having particular ability and incentives to leverage its SMP position from the Zone B MI WHQA Markets into related markets. There is thus, still a need to ensure sufficient visibility of how costs are allocated across the Zone B MI WHQA Markets and other horizontally and vertically-related inputs. As Eircom is already subject to a cost accounting obligation across a number of regulated markets, including the Zone B MI WHQA Markets, ComReg considers any incremental burden is minimal.
- 12.78 ComReg has considered whether price control obligations alone would be sufficient to address the competition problems identified in Section 9, and does not consider this to be the case. For example, discriminatory behaviour (on price or non-price grounds) or denial of access problems would not be capable of being adequately addressed through such obligations alone.

Accounting Separation Obligations

- 12.79 As noted in Section 10, in general, the purpose of an accounting separation obligation would be to provide a higher level of detail of information than that which can be derived from the statutory financial statements of Undertakings designated with SMP, with the objective of reflecting, as closely as possible, the performance of those parts of the Undertaking's business were it to operate on a standalone basis. In the case of vertically-integrated Undertakings, it can support non-discrimination obligations and prevent unfair cross-subsidies to other services.
- 12.80 In Section 10⁹⁹⁴ ComReg noted that Eircom currently has an obligation to maintain separated accounts pursuant to the 2008 Decision and the 2010 Accounting Separation Decision. In Section 9, ComReg has identified potential competition problems associated with possible price-related leveraging to be particularly pertinent in the case of Eircom (absent regulation) which highlights the importance of continuing to ensure a transparent and effective mechanism of accounting separation.

⁹⁹⁴ See paragraphs 10.32 to 10.33.

12.81 Having regard to Eircom's integrated position across several related markets (in particular noting its SMP designations in a number of these markets), separated accounts help disclose such possible competition problems and make visible the wholesale and internal transfer prices of a dominant operator's services, thereby facilitating transparency as regards any potential misallocation of costs across different services. The main objective of accounting separation is to make the practical implementation of non-discrimination and cost-orientation transparent by showing cross-subsidisation between products. Requiring separated accounts for the main products and services creates more transparency on internal transfer pricing and repartition of common and joint costs. It is therefore considered proportionate and justified to continue to impose an obligation on Eircom to maintain separated accounts.

Determined Impacts on Stakeholders

12.82 Given that ComReg has decided to designate Eircom with SMP in the Area 2 MI WHQA Market and Area 4 MI WHQA Market, it is ComReg's position, as outlined paragraphs 12.60 to 12.61 above, that the option of regulatory forbearance is not appropriate or justified and can be discounted when considering the impact on stakeholders.

12.83 Having regard to the SMP designation proposed in Section 6 (which requires ComReg to impose at least some level of regulation⁹⁹⁵) as well as the review of competition problems and remedies in Sections 9 and 10 respectively, ComReg has, on an incremental basis, identified why a range of appropriate remedies are necessary, proportionate and justified, while at the same time discounting other remedies where appropriate.

12.84 Having regard to the analysis and assessment of the Zone B MI WHQA Markets, ComReg has now groups remedies into four options for the purpose of considering the incremental impact of each option on stakeholders:

- (a) **Option 1:** Impose Access obligations only;
- (b) **Option 2:** Impose Access, Transparency and Non-Discrimination obligations;
- (c) **Option 3:** Impose Access, Transparency, Non-Discrimination and Price Control and Cost Accounting obligations;
- (d) **Option 4:** Impose Access, Transparency, Non-Discrimination, Price Control and Cost Accounting and Accounting Separation obligations.

⁹⁹⁵ Pursuant to Regulation 8(1) of the Access Regulations and Regulation 27(4) of the Framework Regulations.

Option 1: Impose Access Obligations only		
Impact on Eircom	Impact on Competition	Impact on Consumers
<p>Eircom would benefit from reduced regulatory burden relative to 2008 Decision.</p> <p>There would be increased flexibility for Eircom to use its market power at wholesale level to engage in exploitative behaviour and/or influence market developments at the wholesale/retail level. It could facilitate extraction of excessive rents from Zone B MI WHQA purchasers and ultimately End Users.</p> <p>Eircom's incentives to innovate and increase efficiency may be reduced where prices are set above efficient cost are paid for by competitors and, in turn, by their customers.</p> <p>Increased risk of disputes and legal challenges involving Eircom's Zone B MI WHQA services arising from ineffective transparency and other preventative measures to protect against non-discrimination. Disputes could increase legal and regulatory costs faced by Eircom.</p>	<p>High risk that, even though access mandated in principle, there would be significant scope for it to be effectively undermined through such practices as high or discriminatory pricing, imposing unreasonable terms and conditions, delaying tactics, poor service quality, etc.</p> <p>Where access is provided to downstream competitors on exploitative or discriminatory terms (relative to that provided to Eircom's own retail arm) this could significantly disadvantage existing rivals and distort existing competition in downstream markets.</p> <p>Ineffective access to Zone B MI WHQA could also raise barriers to expansion for existing entrants in downstream markets due to an inability to guarantee end-to-end connectivity to Eircom's established customer base.</p> <p>Zone B MI WHQA prices set above efficient cost would raise financial barriers to entry and expansion for smaller or newer entrants in downstream retail and wholesale markets. Where Zone B MI WHQA prices are set above efficient cost, this could limit scope for downstream pricing innovations by Eircom's downstream rivals.</p> <p>Scope would persist for Eircom to squeeze competitors across related wholesale/retail</p>	<p>There would be a risk that, even though access to Zone B MI WHQA access is mandated, there would be significant scope for it to be effectively undermined through such practices as high or discriminatory pricing, unreasonable terms and conditions, delaying tactics, poor service quality, etc.</p> <p>If downstream competition is distorted or investments discouraged due to ineffective Zone B MI WHQA access, consumers would potentially have reduced service choice, quality and innovation.</p> <p>Above-cost Zone B MI WHQA could put upward pressure (or slow the rate of any decline) on retail prices. Above-cost Zone B MI WHQA may also limit scope for retail pricing innovations thereby potentially depriving consumers of bundles/packages.</p>

Option 1: Impose Access Obligations only		
	<p>markets through its relative pricing of Zone B MI WHQA.</p> <p>Regulatory certainty is reduced given wholesale access and pricing uncertainty. A potentially increased incidence of disputes could also raise legal and regulatory costs for Eircom's rivals.</p> <p>Differences in regulatory approach between Ireland and other EU countries and deviations from European Commission guidance could also generate legal uncertainty for pan-European operators.</p>	

Option 2: Impose Access, Transparency and Non-Discrimination Obligations		
Impact on Eircom	Impact on Competition	Impact on Consumers
<p>Eircom would benefit from a reduced regulatory burden relative to 2008 Decision.</p> <p>There would be increased flexibility for Eircom to use its market power at wholesale level to engage in exploitative behaviour and/or influence market developments at the wholesale/retail level. It could facilitate extraction of excessive rents from Zone B MI WHQA purchasers and ultimately End Users.</p> <p>Eircom's incentives to innovate and increase efficiency may be reduced where Zone B MI WHQA prices set above efficient cost are paid for by competitors and, in turn, by their customers.</p> <p>While risk of disputes and legal challenges involving Eircom's Zone B MI WHQA services might be eased somewhat relative to Option 1, risk of disputes would persist due to lack of direct regulatory oversight in respect of Eircom's Zone B MI WHQA prices. Disputes could increase the legal and regulatory costs faced by Eircom.</p>	<p>While risk of impeding access to Zone B MI WHQA may be moderated somewhat relative to Option 1, effective access to Zone B MI WHQA may still be undermined through excessive Zone B MI WHQA pricing (including in circumstances where Eircom is vertically integrated).</p> <p>Where access is provided to downstream competitors on exploitative terms, this could significantly disadvantage existing rivals and distort existing competition in downstream markets.</p> <p>Ineffective access to Zone B MI WHQA (through exploitative or exclusionary pricing) could also raise barriers to expansion for existing competitors in downstream markets.</p> <p>Regulatory certainty is improved although remains reduced given wholesale pricing uncertainty. A potentially increased incidence of disputes could also raise legal and regulatory costs for Eircom's rivals.</p> <p>Differences in regulatory approach between Ireland and other EU countries (broader set of obligations are generally envisaged by other NRAs) and deviations from European Commission guidance could also generate legal uncertainty for pan-European operators considering investments in Ireland.</p>	<p>There would be a risk that, even though Zone B MI WHQA is mandated in principle, there would be significant scope for it to be effectively undermined through such practices as excessive pricing, and ultimately consumers would be impacted (through say, higher prices).</p> <p>If downstream competition is distorted or investments discouraged due to ineffective Zone B MI WHQA access, consumers would potentially have reduced service choice, quality and innovation.</p> <p>Above-cost Zone B MI WHQA prices could put upward pressure (or slow the rate of any decline) on retail prices. Above-cost Zone B MI WHQA prices would also limit scope for retail pricing innovations thereby potentially depriving consumers of new and innovative bundles/packages involving fixed data (and other) services.</p>

Option 3: Impose Access, Transparency, Non-Discrimination and Price Control and Cost Accounting Obligations		
Impact on Eircom	Impact on Competition	Impact on Consumers
<p>As Eircom is currently subject to price control and cost accounting obligations (including cost orientation) pursuant to the 2008 Decision, the incremental burden of such obligations is not likely to be significant.</p> <p>Cost orientation ensure that Eircom can recovers its efficiently incurred cost plus a reasonable rate of return.</p> <p>Eircom’s regulatory burden under Option 3 would not be significantly less than under Option 4 (below) as Eircom is already subject to accounting separation obligations in other SMP markets. Under Option 3 there would be increased flexibility for Eircom to obscure internal transfer prices and the real costs of Zone B MI WHQA if no accounting separation obligation imposed. There would thus be an increased opportunity for Eircom’s non-discrimination and/or price control obligations to be undermined.</p> <p>Risk of disputes and legal challenges involving Eircom’s Zone B MI WHQA prices may be eased relative to Options 1 and 2 due to price control obligation. However, a lack of adequate cost accounting data may generate uncertainty regarding Eircom’s compliance with non-discrimination and price control obligations, thus also contributing to risk of disputes.</p>	<p>Regulating Zone B MI WHQA prices at efficient cost would reinforce the effectiveness of the access, transparency and non-discrimination obligations thus reducing risk of competitive distortions in downstream retail markets and potentially lowering barriers to expansion for SPs.</p> <p>Regulating Zone B MI WHQA prices at efficient cost would potentially provide greater scope for retail pricing innovations by rivals.</p> <p>Greater consistency with EU guidance and other regulatory decisions would promote legal certainty and a more predictable environment.</p> <p>While greater certainty that Zone B MI WHQA prices would be set at efficient cost potentially moderates risk of disputes relative to Options 1 and 2, the lack of transparency of Eircom’s costs due to absence of a cost accounting systems may still contribute to an ineffective cost orientation price control and scope for discrimination (relative to its own retail arm) and consequent risk of disputes.</p>	<p>Availability of Zone B MI WHQA access would facilitate interoperability of services by enabling subscribers of other networks to call Eircom’s subscribers.</p> <p>Reduced risk of competitive distortions and more level playing field in downstream markets and greater wholesale pricing certainty helps facilitate retail price and service innovations (e.g. in terms of packages/bundles offered).</p> <p>Reduced risk of high Zone B MI WHQA prices being passed through to End Users in form of higher prices relative to Options 1 and 2 above.</p> <p>Potential for discriminatory behaviour due to lack of accounting separation may impact on downstream competition and investment with consequent negative implications in terms of price and service choice over time.</p>

Option 4: Impose Access, Transparency, Non-Discrimination, Price Control and Cost Accounting and Accounting Separation Obligations		
Impact on Eircom	Impact on Competition	Impact on Consumers
<p>Existing regulatory burden on Eircom as per the 2008 Decision would remain.</p> <p>Risk of disputes and legal challenges involving Eircom's Zone B MI WHQA prices would be eased relative to Options 1, 2 and 3.</p>	<p>As set out for Option 3 above, greater consistency with EU guidance and other regulatory decisions would promote legal certainty and a more predictable environment for potential investors.</p> <p>Greater certainty that Zone B MI WHQA prices would be set at efficient cost, complemented by greater visibility of internal transfers to support non-discrimination obligation, moderates risk of disputes relative to Options 1, 2 and 3.</p>	<p>Reduced risk of competitive distortions and more level playing field in downstream markets and greater wholesale pricing certainty helps facilitate retail price and service innovations (e.g. in terms of packages/bundles offered).</p> <p>Reduced risk of above-cost Zone B MI WHQA prices being passed through to End Users in form of higher prices relative to Options 1 and 2 above.</p>

Likely Impacts and the Best Option

- 12.85 In the discussion on the approach on remedies set out in Section 10, ComReg has taken full account of its obligations under Regulation 8(6) of the Access Regulations (including that any proposed remedies are to be based on the nature of the problem identified), as well as its relevant objectives as set out under Section 12 of the Communications Regulation Acts 2002 (as amended).
- 12.86 ComReg's position is that, absent regulation, there is the potential and incentive for Eircom, as the SP designated with SMP in the Zone B MI WHQA Markets, to engage in exploitative and exclusionary behaviours which would impact on competition and consumers. In Section 9 ComReg provided examples of potential competition problems and the impact of these on competition and consumers. ComReg has also highlighted its objectives in regulating the Zone B MI WHQA Markets in paragraph 12.15 above, in particular, preventing restrictions or distortions of competition in affected downstream retail and wholesale markets and helping to ensure that consumers can achieve maximum benefits in terms of price, choice and quality of service.
- 12.87 The imposition of appropriate *ex ante* remedies to address such competition problems was discussed and justified in Sections 9 and 10 and each of the specific remedies is designed to promote the development of effective competition and to protect End Users. Given that a full suite of remedies is proposed to be applied on Eircom, it is ComReg's position that the risk of competition problems and associated impacts should be minimised. This will ultimately be to the benefit of SPs and End Users of downstream retail and wholesale services.
- 12.88 The maintenance of existing regulation on Eircom in the Zone B MI WHQA Markets (i.e. Option 4) is considered justifiable in that it is required to ensure that Eircom does not exploit its market power at the wholesale level to the detriment of competition in both related markets, and to the ultimate detriment of consumers. In Section 9, a broad range of potential competition problems were identified for Eircom, which has the ability and incentives for both exploitative and exclusionary practices given its continuing significant presence in upstream and downstream markets.

12.89 In particular, Eircom's strong position on downstream retail markets (see Section 4 of this Decision) implies that the ability and incentives to engage in vertical leveraging/foreclosure would seem particularly strong for Eircom. In view of its control over a number of key input markets, Eircom has the ability and incentives to impede downstream competitors through price (e.g. excessive/ discriminatory pricing) and/or non-price means (e.g. by not facilitating access to essential services in the Zone B MI WHQA Markets). The regulatory obligations proposed in designed to specifically address the competition problems identified and are proportionate in that they are the least burdensome means of achieving this objective.

12.6 Zone A MI WHQA Markets Considerations

12.90 As set out in Section 6, ComReg is of the view that no Undertaking is likely to have SMP in the Area 1 MI WHQA Market and Area 3 MI WHQA Market (together referred to in this RIA as the '**Zone A MI WHQA Markets**'). As a result, no regulatory obligations are being imposed on any SP in these markets.

12.91 At present, Eircom is regulated in the Zone A MI WHQA Markets by virtue of the 2008 Decision. As a result of the analysis contained in this Decision, the existing regulatory obligations on Eircom will be withdrawn in the Zone A MI WHQA Markets (see Section 11 above). In particular, ComReg's position is that high and non-transitory barriers to entry no longer appear to be present, and that the Zone A MI WHQA Markets are tending towards effective competition. ComReg's finding that no Undertaking is likely to have SMP in the Zone A MI WHQA Markets implies that these markets are no longer susceptible to *ex ante* regulation and, therefore, regulation is not warranted.

12.92 On that basis, ComReg has decided that the removal of regulation from the Zone A MI WHQA Markets is warranted. Therefore, ComReg's regulatory options in the Zone A MI WHQA Markets are limited to the timing of the withdrawal of existing regulation. As noted in Section 11, ComReg has decided that a sunset period of 12 months for the withdrawal of existing remedies imposed upon Eircom in the Zone A MI WHQA Markets.

12.93 This will, amongst other things, allow Access Seekers sufficient time to seek alternative forms of Zone A MI WHQA supply, if required, and thereby preserve continuity in the supply of retail/wholesale services (were Eircom to withdraw, or significantly alter, its terms and conditions of Zone A MI WHQA supply following deregulation). To ultimately ensure the protection of consumer interests, ComReg intends to continue to monitor the effectiveness of competition within the Zone A MI WHQA Markets, notwithstanding the proposed removal of regulation. In this respect, ComReg reserves its right to re-examine competitive conditions within the Zone A MI WHQA Markets and, if appropriate, to intervene accordingly.

- 12.94 ComReg also decided that, within three months from the effective date of this final decision, Eircom will no longer have to meet new requests for access in the Zone A MI WHQA Markets in the context of regulatory requirements (although is free to do so commercially). Seekers will require some time to make alternative supply arrangements and, in view of this, where access to MI WHQA LLs is not available immediately after such a decision, they will not be in a position compete for tenders/bids already underway. On the other hand, requiring Eircom to meet new access requests during the sunset period would not be ultimately sustainable in circumstances where post the twelve month sunset period Eircom is free to withdraw access to all MI WHQA LL services (although it may wish to continue to do so on a commercial basis). On balance, ComReg considers, therefore, that it is reasonable to require Eircom to provide new MI WHQA access requests for a very short period of 3 months following the effective date of this Decision.

12.7 ComReg's Conclusion on the RIA for the Relevant WHQA Markets

- 12.95 ComReg remains of the view that the RIA accompanying the 2016 Consultation and the 2018 Further Consultation properly assessed the impact of the imposition of regulation in the LB TI WHQA Market and its removal in the HB TI WHQA Market and so it remains largely unchanged.
- 12.96 ComReg remains of the view that the RIA accompanying the 2018 Further Consultation properly assessed the impact of the imposition of regulation in the Zone B MI WHQA Markets and its removal from the Zone A MI WHQA Markets and so it also remains largely unchanged.

13 Next Steps

- 13.1 ComReg has set out its position in the preceding Sections regarding its analysis of the Relevant WHQA Markets, and has 24 January 2020 published its Decision on its publicly available website www.comreg.ie .
- 13.2 Eircom Limited (trading as eir), which is subject to the regulatory obligations set out in the Decision Instrument appended to this Decision, is 24 January 2020 notified of this Decision.

Annex 1 Summary and Assessment of Respondents' Views to the 2018 Further Consultation

A.1.1 Overview

- A1.1 This Annex provides a summary and assessment of the seven Submissions received in response to the 2018 Further Consultation. The list of the Respondents provided Submissions is set out in paragraph 1.23 of this Decision.
- A1.2 In the 2018 Further Consultation ComReg invited all interested parties to respond to the various questions set out in the 2018 Further Consultation, and to comment on any other aspect of the Consultation.
- A1.3 A total of 10 questions were posed throughout the Consultation on which input was sought from interested parties on ComReg's preliminary views in relation to the key themes as set out in the 2018 Further Consultation. The complete list of questions can be seen in below. Respondents were requested to provide reasoning and factual evidence to support their responses and to clearly indicate relevant paragraph numbers to which their responses referred to.
- A1.4 The 2018 Further Consultation contained the following list of questions which related to different Sections of the paper.

Table 16: Questions Asked in the 2018 Further Consultation

Structure of 2018 Further Consultation: Sections and Questions	
Sections in Consultation	Consultation Questions
Retail Market Developments, Trends and Assessments Section 3 in the 2018 Further Consultation	Q.1. Do you have any further observations on ComReg's Retail Market Assessment?
Definition of the Relevant WQA Markets Section 4 in the 2018 Further Consultation	Q.2. Do you agree with ComReg's further preliminary conclusions on the definition of the Relevant WHQA Markets? Please explain the reasons for your answer, clearly indicating the relevant paragraph numbers to which your comments refer, along with all relevant factual evidence supporting your views.
Competition Analysis and Assessment of SMP in the WHQA Markets	Q.3. Do you agree with ComReg's further preliminary conclusions on the assessment of competition within the Relevant WHQA Markets, including the proposed designation of Eircom as having SMP, as appropriate?

Structure of 2018 Further Consultation: Sections and Questions	
Section 5 in the 2018 Further Consultation	Please explain the reasons for your answer, clearly indicating the relevant paragraph numbers to which your comments refer, along with all relevant factual evidence supporting your view.
Competition Problems in the Low Bandwidth TI WHQA Market and Impacts on Competition and Consumers Section 6 in the 2018 Further Consultation	Q.4. Do you have any further observations on this Section 6 concerning competition problems in the LB TI WHQA Market?
Imposition of Remedies in the Low Bandwidth TI WHQA Market Section 7 in the 2018 Further Consultation	Q.5. Do you have any further observations on this Section 7 concerning obligations in the LB TI WHQA Market?
Competition Problems in the Zone B MI WHQA Markets and Impacts on Competition and Consumers Section 8 in the 2018 Further Consultation	Q.6. Do you agree that the competition problems and the associated impacts on competition consumers identified are those which could potentially arise in the Zone B MI WHQA Market? Please explain the reasons for your answer, clearly indicating the relevant paragraph numbers to which your comments refer, along with all relevant factual evidence supporting your views
Proposed remedies in the Zone B MI WHQA Market Section 9 in the 2018 Further Consultation	Q.7. Do you agree with ComReg's approach to imposing access, non-discrimination, transparency, price control and cost accounting and accounting separation remedies in the Zone B MI WHQA Market? Please explain the reasons for your answer, clearly indicating the relevant paragraph numbers to which your comments refer, along with all relevant factual evidence supporting your views
Proposed remedies in the Zone B MI WHQA Market Section 9 in the 2018 Further Consultation	Q.8. Do you agree with ComReg's draft Decision Instrument set out in Annex: 4, in particular, that its wording accurately captures the intentions expressed in this Section 9? Do you agree with ComReg's Definitions and Interpretations as set out in Part I of the Draft Decision Instrument? Please explain the reasons for your answer, clearly indicating the relevant paragraph numbers in the Draft Decision Instrument to which your comments refer.
Withdrawal of obligations in the LB, HB TI WHQA Markets and the Zone A MI WHQA Market Section 10 in the 2018 Further Consultation	Q.9. Do you agree with ComReg's approach on the withdrawal of all existing obligations in the HB TI WHQA Market and the Zone A MI WHQA Markets and withdrawal of the obligation to provide WLLs in the LB TI WHQA market? Please explain the reasons for your answer, clearly indicating the relevant paragraph numbers to which your comments refer, along with all relevant factual evidence supporting your views.
Regulatory Impact Assessment	Q.10. Do you agree with ComReg's preliminary conclusions on the Regulatory Impact Assessment for the MI WHQA Markets?

Structure of 2018 Further Consultation: Sections and Questions

Section 11 in the 2018 Further Consultation

Please explain the reasons for your answer, clearly indicating the relevant paragraph numbers to which your comments refer, along with all relevant factual evidence supporting your position.

- A1.5 This Annex is structured as follows, with reference to Respondents' views on relevant Sections of the 2018 Further Consultation and ComReg's assessment of these Respondents' views.
- (a) Respondents' views on the Retail Market Trends and Developments as set out in Section 3 of the 2018 Further Consultation have been summarised and assessed by ComReg in Section A.1.2 below (see paragraphs A1.6 to A1.27 below).
 - (b) Respondents' views on the Retail Market Assessment as also set out in Section 3 of the 2018 Further Consultation have been summarised and assessed by ComReg in Section A.1.3 below (see paragraphs A1.28 to A1.64 below).
 - (c) Respondents' views on the Definition of the Relevant WHQA Markets as set out in Section 4 of the 2018 Further Consultation have been summarised and assessed by ComReg in Section A.1.4 below (see paragraphs A1.65 to A1.101 below).
 - (d) Respondents' views on the Geographic Scope of the Relevant WHQA Markets as set out in Section 4 of the 2018 Further Consultation have been summarised and assessed by ComReg in Section A.1.5 below (see paragraphs A1.103 to A1.344 below).
 - (e) Respondents' views on the Competition Analysis and Assessment of SMP in the WHQA Markets as set out in Section 5 of the 2018 Further Consultation have been summarised and assessed by ComReg in Section A.1.6 below (see paragraphs A1.345 to A1.393 below).
 - (f) Respondents' views on the Competition Problems in the Low Bandwidth TI WHQA Market and Impacts on Competition and Consumers as set out in Section 6 of the 2018 Further Consultation have been summarised and assessed by ComReg in Section A.1.7 below (see paragraphs A1.394 to A1.407 below).
 - (g) Respondents' views on the Imposition of Remedies in the Low Bandwidth TI WHQA Market as set out in Section 7 of the 2018 Further Consultation have been summarised and assessed by ComReg in Section A.1.8 below (see paragraphs A1.408 to A1.489 below).

- (h) Respondents' views on the Competition Problems in the Zone B MI WHQA Markets and Impacts on Competition and Consumers as set out in Section 8 of the 2018 Further Consultation have been summarised and assessed by ComReg in Section A.1.9 below (see paragraphs A1.490 to A1.504 below).
- (i) Respondents' views on the Imposition of Remedies in the Zone B MI WHQA Markets as set out in Section 9 of the 2018 Further Consultation have been summarised and assessed by ComReg in Section A.1.10 and A.1.10.6 below (see paragraphs A1.505 to A1.1090 below).
- (j) Respondents' views on the withdrawal of obligations in the LB TI WHQA Market, HB TI WHQA Market and the Zone A MI WHQA Markets as set out in Section 10 of the 2018 Further Consultation have been summarised and assessed by ComReg in Section A.1.11 below (see paragraphs A1.1091 to A1.1122 below).
- (k) Respondents' views on the Regulatory Impact Assessment as set out in Section 11 of the 2018 Further Consultation have been summarised and assessed by ComReg in Section A.1.12 below (see paragraphs A1.1123 to A1.1170 below).

A.1.2 Summary and Assessment of Respondents' Views on the Retail Market Trends and Developments

A1.6 In Section 3 of the 2018 Further Consultation (Section 3 of this Decision) ComReg summarised Respondents' views as set out in the submissions to the 2016 Consultation and provided an assessment of those views. This included:

- (a) A summary of the preliminary views set out in Section 3 (Retail Market Trends and Developments) of the 2016 Consultation;
- (b) A summary of Respondents' views on Section 3 (Retail Market Trends and Developments) of the 2016 Consultation; and
- (c) ComReg's Assessment of Respondents' views to Section 3 (Retail Market Trends and Developments) of the 2016 Consultation.

A1.7 Of the Seven Submissions received, four Respondents (BT, Eircom, enet and Vodafone) commented on the retail market trends and developments in the 2018 Further Consultation. Three Respondents (ALTO, Verizon and Zayo) did not comment. Respondents commented on the following areas:

- (a) Migration from Traditional Interface to Modern Interface is considered in paragraphs A1.8 to A1.9 below;

- (b) Wired and Wireless Trends and Developments is considered in paragraphs A1.10 to A1.16 below; and
- (c) Importance of Multi-site Customers is considered in paragraphs A1.17 to A1.25 below;

A.1.2.1 Migration from Traditional Interface to Modern Interface

Respondents' Views

A1.8 BT agreed with ComReg's assessment that there had been a steady decline in both the volumes of LB TI and HB TI retail LLs and that this would likely continue over the period of the review.

ComReg's Assessment of Respondents Views

A1.9 ComReg notes BT's agreement on ComReg's assessment of the LB TI and HB TI retail markets. ComReg's position on the migration from TI to MI LLs is set out in Section 3.5⁹⁹⁶.

A.1.2.2 Wired and Wireless Trends and Developments

Respondents' Views

A1.10 Eircom noted that since the last market review of the WHQA market, in 2008, wireless technology has changed significantly. In the past leased lines needed to be provided over wired technology (copper or fibre optics) and this involved costly construction and extended delivery times. Eircom stated that since then:

⁹⁹⁶ See paragraphs 3.81 to 3.86 of this Decision.

“The availability of cost-efficient wireless Ethernet technology has had a significant impact on the leased line market. This technology delivers point-to-point symmetrical connectivity at bandwidths comparable to those of Ethernet-based services. For example Host Ireland provides symmetrical wireless services at bandwidths up to 1Gbps in the greater Dublin area. The potential cost savings associated with wireless LLs has led to the technology being deployed as an access mechanism for data communications networks. Wireless services have been widely deployed to deliver retail and wholesale leased lines across all geographies. Indeed, wireless technologies have proved particularly competitive in rural areas because, unlike fibre-based services, their cost does not increase significantly with the distance of the link.”⁹⁹⁷

ComReg’s Assessment of Respondents’ Views

- A1.11 ComReg acknowledges that one development since the 2008 Decision has been the growth in the volume of wireless LLs. Figure 24 shows that in 2014 15% of all retail LLs were wireless and that this has increased to 17% by 2018. The growth in wireless LLs has slowed noticeably since 2016, with only an increase of 54 circuits by 2018, a 2% increase.
- A1.12 ComReg agrees that wireless Ethernet technology is comparable in some respects, to those of wired Ethernet-based services. Table 2, ‘Overview of product characteristics’, in Section 5⁹⁹⁸ of this Decision, shows that exception of the product characteristics of Ethernet based wireless LLs are comparable to Ethernet LLs over a wired medium at lower bandwidths but wireless links are severely distance limited as bandwidth increases (the focal product used in the retail market assessment, Section 4). Moreover, the demand characteristics are such that the majority of demand do not consider wireless to be a substitute for wired services, but can sometimes act as a complement to them for back-up purposes.
- A1.13 While Eircom notes that there are potential cost savings associated with wireless LLs, ComReg’s analysis of the average retail revenues of wired and wireless LLs, found no substantial difference between them⁹⁹⁹.

⁹⁹⁷ Eircom’s Submission, paragraph 6.

⁹⁹⁸ See paragraph 4.32 of this Decision.

⁹⁹⁹ See paragraph 4.115. The comparison of retail LL prices comes with the caveat that these prices can include a number of other bundled in services.

- A1.14 ComReg accepts Eircom's view that wireless LLs play a role in providing connectivity services alongside wired LLs especially in rural areas. However, an important cohort of retail customers, multi-site customers who purchased 80% of circuits in 2017, have a strong preference for wired over wireless LLs. Only 4% of multi-site customers purchased solely wireless LLs in 2017, while 60% purchased wired only LLs.
- A1.15 ComReg accepts that wireless LLs may be used in rural areas where wired based LL services are not economically viable.
- A1.16 Overall, while ComReg acknowledges that wireless LLs have become more prevalent since the 2008 Decision, ComReg disagrees with Eircom on the significance that wireless LLs have made on the retail LL market, based on the preferences of multi-site customers for wired LLs.¹⁰⁰⁰

A.1.2.3 Importance of Multi-site Customers

Respondents' Views

- A1.17 Respondents commented on ComReg's analysis of multi-site retail customers in Section 3¹⁰⁰¹ of the 2018 Further Consultation. In this respect, 4 Respondents commented on the emphasis ComReg placed on multi-site customers in the 2018 Further Consultation where ComReg had noted that Access Seekers have a reliance on Eircom's WHQA services when providing LLs to multi-site retail LL customers.
- A1.18 3 Respondents (BT, enet and Vodafone) supported ComReg's acknowledgement of the importance of multi-site customers noting that in order to compete for these customers, nationwide network coverage is required and that this, in turn, places a dependency on access to Eircom's WHQA products given Access Seekers' lack of nationwide network coverage.

¹⁰⁰⁰ Section 4.4, paragraphs 4.101 to 4.145, for a more comprehensive analysis on substitutability of wired and wireless LLs.

¹⁰⁰¹ See paragraphs 3.63 to 3.77 of the 2018 Further Consultation.

- A1.19 Eircom considered that ComReg had placed too much emphasis on the importance of multi-site customers. Eircom noted that ComReg has not defined a separate retail market for multi-site LL customers as being distinct from single-site retail LL customers. Therefore, it considered it inappropriate to characterise the whole market based on the characteristics of a subset of customers. Commenting on the analysis of interviews with End Users of LLs¹⁰⁰², Eircom noted that ComReg used a “*very small sample*” of this multi-site customer subset and consequently, could not be considered “*sufficiently large, robust or representative of the relevant market*”¹⁰⁰³ and that “*this sample is far too small and biased to produce reliable results to infer conclusions about the market as a whole*”¹⁰⁰⁴. Eircom considered that the “*stated preferences are liable to represent potentially biased perceptions of respondents*”¹⁰⁰⁵.
- A1.20 Eircom also stated that the underlying inputs used in the supply of retail LLs are fundamentally similar whether a LL is provided to a single or multi-site customer. Therefore, there should be no differentiation of demand by customer type.
- A1.21 Finally, Eircom indicated that SPs offered LLs to both single and multi-site customers, although in doing so offered differentiated services and pricing to match those customers. Overall, Eircom considered that LL product characteristics were similar to both customer types such that the behaviour of a subset of the retail market should not define the boundaries of the total market.

ComReg’s Assessment of Respondents’ Views

- A1.22 ComReg notes Respondents’ support regarding its assessment of the importance of multi-site customers.

¹⁰⁰² See paragraphs 3.72 to 3.74 of the 2018 Further Consultation.

¹⁰⁰³ Eircom Submission, paragraph 12.

¹⁰⁰⁴ Eircom Submission, paragraph 16.

¹⁰⁰⁵ Eircom Submission, paragraph 17.

- A1.23 ComReg acknowledges that multi-site customers, relative to single site customers, represent the smaller proportion of the total number of customers but, as can be seen in Figure 18 and Figure 19 in Section 4 of this Decision¹⁰⁰⁶, multi-site customers' account for the majority of LL circuits sold and the revenue in the market. In this respect, they accounted for over 80% of retail LL circuits and revenues in 2017. This evidence suggests that multi-site customers are a significant component of the overall market, and are likely to be of greater importance for SPs in attracting and maintaining LL related revenues, relative to single-site customers. ComReg consequently considers that due consideration should be given to the impact that these multi-site customers can have on retail market dynamics, including demand-side and supply-side considerations.
- A1.24 ComReg considers the sample size of 17 interviews with multi-site customers to be adequate for the purposes of developing and understanding of the views of such types of customers. ComReg would categorise these interviews as exploratory research rather than being determinative in and of itself. The aim of this research was to elicit a detailed understanding of the thinking and motivations behind the purchasing choices of different types of large/multi-site retail customers. This was carried out following the points raised by Respondents in response to the 2016 Consultation regarding the importance of multi-site customers. The insights from this exploratory research guided the examination and analysis of Q2 2016 SIR data collected from operators on the retail market. This data can be considered as close to population/census data as it would be possible to get, compared to the small number of multi-site customers interviewed for the exploratory research. This is discussed in detail in paragraphs 3.73 to 3.80 of this Decision, where the analysis of SIR data was expanded to four years (2014 to 2017) from the single year analysed in the 2018 Further Consultation. Therefore, ComReg disagrees with Eircom's view that the behaviour of the whole market was characterised using a very small sample of multisite customers.
- A1.25 ComReg agrees with Eircom's view that the underlying inputs used in the supply of LL services to single and multisite customers are sufficiently similar and, when considered alongside other factors, the similarities suggest that both types of customers fall within the same retail market¹⁰⁰⁷.

¹⁰⁰⁶ See paragraph 3.78 of this Decision.

¹⁰⁰⁷ ComReg defined a single MI retail LL market, not separate MI retail markets single site and multi-site customers, see paragraph 3.178 in the 2018 Further Consultation.

- A1.26 ComReg is satisfied that this view is consistent with taking on board the preferences of a group within the market, i.e. multi-site customers. Multi-site customers dominate the volumes of circuits sold and revenues generated in the retail LL market. The lack of substitutability of wireless LLs for wired LLs, exhibited by the behaviour of multi-site customers is an important factor that ComReg must consider when analysing the retail market.
- A1.27 As such, ComReg disagrees with Eircom's view that the behaviour of multi-site customers, a subset of the retail market (28% of retail customers in 2017), should not set the boundaries of the total retail market. Multi-site customers purchase the overwhelming majority of retail LL circuits, accounting for over 80% of wired and wireless retail LL circuits and revenues in 2017. Therefore, their preferences set the standards by which the majority of SPs need to respond to.

A.1.3 Summary and Assessment of Respondents' Views on the Retail Market Assessment

- A1.28 In Section 3 of the 2018 Further Consultation (Section 4 of this Decision) ComReg summarised Respondents' views as set out in the Submissions to the 2016 Consultation, provided an assessment of those views and set out its amended preliminary position on the Retail Market Assessment. This included:
- (a) A summary of the preliminary views set out in Section 4 (Retail Market Assessment) the 2016 Consultation;
 - (b) A summary of Respondents views on Section 4 (Retail Market Assessment) of the 2016 Consultation;
 - (c) ComReg's Assessment of Respondents' views to Section 4 (Retail Market Assessment) the 2016 Consultation; and
 - (d) ComReg's Overall Preliminary Position on the Retail Market Assessment.
- A1.29 In Question 1¹⁰⁰⁸ of the 2018 Further Consultation ComReg sought any further observations on ComReg's retail market assessment.

¹⁰⁰⁸ Question 1 on page 100 of the 2018 Further Consultation asked "Do you have any further observations on ComReg's Retail Market Assessment?"

- A1.30 Of the 7 Submissions received, 5 Respondents (ALTO, BT, Eircom, enet and Vodafone) commented on the retail market developments, trends and assessment in the 2018 Further Consultation. 2 Respondents (Verizon and Zayo) did not comment. Respondents commented on the following areas:
- (a) Application of the Hypothetical Monopolist Test is considered in Section A.1.3.1 below;
 - (b) An Ethernet Interface as the Focal Product is considered in Section A.1.3.2 below;
 - (c) Excluding Wireless LLs from the Retail Product Markets is considered in Section A.1.3.3 below;
 - (d) Excluding Business Broadband from the Retail Product Markets is considered in Section A.1.3.4 below;
 - (e) Excluding Dark Fibre from the Retail Product Markets is considered in Section A.1.3.5 below;
 - (f) Retail Geographic Market Assessment is considered in Section A.1.3.6 below; and
 - (g) Finally a number of other comments are considered in Section A.1.3.7 below.

A.1.3.1 Application of the Hypothetical Monopolist Test

Respondents' Views

- A1.31 Eircom stated that ComReg failed to consider all the competitive constraints and over simplified the consumers' interaction with and the operation of the market. It outlined the need for the application of the HMT or SSNIP test to be quantitative in nature and that any End User surveys are designed appropriately and reflect the reality of the market, not a presupposed outcome.

ComReg's Assessment of Respondents' Views

- A1.32 ComReg does not agree with Eircom that the retail market assessment did not consider all the competitive constraints. Competitive constraints in each market have been considered as evidence from the analysis in Section 4 of this Decision, in particular:
- (a) Section 4.4 (Product Market Assessment) assessed the demand and supply side substitution of TDM LLs; Analogue LLs; xWDM; Wireless Ethernet; Business Broadband; EFM and dark fibre against a focal product of wired Ethernet LLs;

- (b) Section 4.5 (Bandwidth Breaks in the Retail LL Product Markets) assessed the bandwidth breaks in each of the three Retail LL Product Markets identified in Section 4.4; and
 - (c) Section 4.6 (Geographic Market Assessment) assessed the geographic homogeneity of conditions of competition in the three Retail LL Product Markets across the country.
- A1.33 Similarly, ComReg rejects the claim that customer interaction in the retail LL market was over simplified in the retail market assessment. ComReg has through the 2014 market research and the 2017 interviews with multi-site consumers gained insights into retail consumer's interactions in the LL markets. This includes information set out in the 2016 Consultation which shows that in general retail LLs are sold on a 'Price on Application' ('**PoA**') basis and that 70%¹⁰⁰⁹ of LL customers surveyed indicated that they can negotiate terms and conditions, including lower prices. The 2017 interviews with multi-site customers showed that customers either had a formal tendering process (13 out of 17), renegotiated with their existing provider (2 out of 17) or held bilateral negotiations with several SPs (2 out of 17). Another insight from the 2014 Research was that 56% of business users bundle LLs with wider services as outlined in paragraph 3.106.
- A1.34 ComReg does not agree with Eircom's view that the HMT or SSNIP test needs to be purely quantitative in its application. The European Commission's Notice on Market Definition demonstrates a more holistic approach to product market definition, than a purely quantitative application:
- "A relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, their prices and their intended use"*
- A1.35 ComReg has applied a considerable amount of data analysis especially in the assessment of retail customers 'intended use' of different technology. This has come through the use of SIR data collected from SPs for Q2 2016 in the 2018 Further Consultation and expanded to the years 2014 to 2017 in this Decision. This is particularly the case with the assessment of the intended use of wireless Ethernet LLs by multi-site customers in paragraphs 4.122 to 4.129.

¹⁰⁰⁹ The 2014 Market Research, slide 104.

A.1.3.2 An Ethernet Interface as the Focal Product

Respondents' Views

A1.36 Two Respondents (Vodafone and Eircom) commented on the focal product. Both Respondents agreed with ComReg's proposals that the focal product has an Ethernet interface and the definition of the Relevant Retail LL Markets.

ComReg's Assessment of Respondents' Views

A1.37 ComReg notes Respondents' support for the approach to the focal product and the definition of the Relevant Retail LL Markets. As noted in Section 4.4¹⁰¹⁰ of this Decision, ComReg's position remains that the focal product is a wired Ethernet LL.

A.1.3.3 Excluding Wireless LLs from the MI Retail Product Market

Respondents' Views

A1.38 Three Respondents (BT, enet and Vodafone) agreed with ComReg's updated preliminary view in the 2018 Further Consultation that wireless LLs should be excluded from the MI Retail LL Market. One Respondent (Eircom) disagreed.

A1.39 Eircom's view is the MI Retail LL Market include all wired and wireless MI LLs and that ComReg had failed to justify or present any coherent reasoning for the change in the preliminary view was that originally set out in the 2016 Consultation. Eircom stated that the substitutability analysis set out in the 2018 Further Consultation¹⁰¹¹ was inherently flawed. Eircom noted there had been an increase in the prevalence of wireless LLs since the 2008 Decision and the number of SPs specialising in the supply of wireless LL products at the wholesale and retail levels.

¹⁰¹⁰ See paragraphs 4.34 to 4.40 of this Decision.

¹⁰¹¹ See paragraphs 3.118 to 3.155 of the 2018 Further Consultation.

- A1.40 Eircom noted that ComReg had stated in the 2016 Consultation and 2018 Further Consultation that wired and wireless LL prices are broadly comparable. It also noted it was significant that that 26.4% of all LL purchased by 399 End Users¹⁰¹² were wireless and 20% of the 399 users purchased more wireless than wired LLs. In addition, Eircom referred to paragraph 3.129 of the 2018 Further Consultation, which stated that 44% of all multi-site LL customers were purchasing wireless LLs. Although critical of the sample size of the 2017 interviews with multi-site customers, Eircom noted as significant that 82% (14 out of 17) were purchasing wireless LLs and 30% (5 out of 17) were using them as their primary data connectivity service.
- A1.41 Eircom highlighted that the majority of those using wireless LLs as their primary data connectivity services considered wireless better value than wired LLs in terms of bandwidth and price. Eircom also referenced on the results of the 2014 market research that stated there was a noticeable demand for wireless among businesses (26%)¹⁰¹³ and that demand was not limited to a set of End Users or geographic areas.
- A1.42 Overall Eircom stated that the ComReg's change of position on the inclusion of wireless LLs is based on an assessment of intended use and substitution by customers, derived from the interviews with 17 multi-site customers. Eircom noted no substantial change to ComReg's preliminary view on the issue of product characteristic or pricing between the 2016 Consultation and the 2018 Further Consultation. It appears to Eircom that ComReg's revised preliminary conclusions are based on stated preferences from interviewees rather than observed behaviour of End Users.
- A1.43 Eircom also queried the location of a question, on the substitutability of wireless for wired LLs in the event of a SSNIP (5-10%), asked during the 2017 interviews with multi-site customers. Paragraph A5.26 in the 2018 Further Consultation, reported statistics on interview responses to this question but this question did appear in the list of interview questions in an information note¹⁰¹⁴ published subsequent to the publication of the 2018 Further Consultation.

¹⁰¹² Retail End Users that purchase wired & wireless LLs. See paragraph 3.127 of the 2018 Further Consultation. Based on data collected from SPs for Q2 2016.

¹⁰¹³ See paragraph 3.42 of the 2016 Consultation.

¹⁰¹⁴ Annex of ComReg's 'Response to Requests for Clarifications' (ComReg 18/28).

ComReg's Assessment of Respondents' Views

- A1.44 ComReg does not agree with Eircom's view that ComReg failed to justify or present any coherent reasoning for the change in the preliminary view that was originally set out in the 2016 Consultation, resulting in the proposed exclusion of wireless LLs from the MI Retail LL Market. The 2018 Further Consultation re-examined the substitutability analysis carried out in the 2016 Consultation having regard to ComReg's consideration of the 2016 Submissions and in light of further available market evidence. This included not only a further examination of demand-side and supply-side considerations but also the data gathered from SPs via the SIRs and information gathered via the 2017 interviews with multi-site customers. This Decision has expanded the analysis carried out in the 2018 Further Consultation from using a single year of SIR data (Q2 2016) to 4 years of SIR data (2014 to 2017)¹⁰¹⁵, which has confirmed those preliminary views.
- A1.45 Eircom stated that the growth in wireless LLs and SPs providing wireless LL products is evidence that wired and wireless LLs are substitute products. ComReg does not dispute the trends in the provision of wireless LLs as outlined by Eircom but would note that that it was the demand side substitution and not only the supply side substitution which was the basis for excluding wireless from the Relevant Retail LL Markets.
- A1.46 With regard to the 20% of End Users who purchased more wireless than wired LLs out of all the End Users who consumed both media (399), cited by Eircom as being significant, ComReg would point out that this represents only 2-3%¹⁰¹⁶ of all retail LL customers in Q2 2016¹⁰¹⁷. The other figure that was stated as being significant by Eircom was the 44% of multi-site customers purchasing wireless LLs. The vast majority, 40% out of the 44% (91%), of these retail LL customers purchased both wired and wireless LLs and only the remaining 4% purchased solely wireless LLs¹⁰¹⁸. For comparison, over 55% of multi-site LL customers purchased wired only LLs in Q2 2016¹⁰¹⁹.

¹⁰¹⁵ See paragraphs 4.122 to 4.129 in this Decision.

¹⁰¹⁶ 3,128 End Users were identified in Table 6 of the 2018 Further Consultation.

¹⁰¹⁷ See Figure 27 of this Decision for related data covering the years 2014 to 2017.

¹⁰¹⁸ Ibid.

¹⁰¹⁹ Ibid.

A1.47 While ComReg presented statistics in the 2018 Further Consultation based on the Interviews with End Users of LLs, this is only one piece of data, enabling ComReg to validate Respondents' Submissions to the 2016 Consultation on the issue of their reliance on regulated access to MI WHQA in order to meet the requirements of customers with multiple sites in different geographic locations. As mentioned above, the analysis of the SIR data submissions from SPs is the primary source of evidence that ComReg relies upon assessing demand-side substitutability between wired and wireless LLs. In this respect, Appendix 5 of the 2018 Further Consultation¹⁰²⁰ makes clear that:

*"..ComReg does not solely or overly rely on results of the Interviews with End Users of LLs in forming its preliminary conclusions as set out in this Further Consultation."*¹⁰²¹

A1.48 Eircom quotes the 2016 Consultation and ComReg's 2014 Market Research, which stated that there was a noticeable demand for wireless LLs among businesses (26%)¹⁰²² and that demand was not limited to a set of End Users or geographic areas. ComReg considers that additional and more in-depth analysis into the substitutability of wired and wireless LLs in the 2018 Further Consultation supersedes the preliminary conclusions in the 2016 Consultation. Data analysis in the 2018 Further Consultation utilised SIR data collected from SPs, which is closer to population data of retail LLs. This allowed more in-depth analysis to complement the 2014 market research, such as the breakdown between single-site and multi-site retail customers.

¹⁰²⁰ See also paragraph 1.58 of the 2018 Further Consultation.

¹⁰²¹ Paragraph A 5.4 in the 2018 Further Consultation, page 493.

¹⁰²² Slide 18 of the 2014 Market Research.

- A1.49 ComReg acknowledges that from a technical perspective there has been no change in the assessment of the product characteristics of wireless LLs but that evidence gathered from the 2017 interviews with multi-site customers showed a perception of quality differences between wired and wireless LLs, favouring wired LLs. The reassessment of retail customers' intended use and the overall patterns of substitution between wired and wireless LLs required a change to the preliminary view outlined in the 2016 Consultation. The analysis of retail customers' 'intended use' has been expanded in this Decision to include the analysis of four years of data (2014 to 2017), reinforcing the conclusions reached in the 2018 Further Consultation.¹⁰²³
- A1.50 ComReg disagrees with Eircom's conclusion that the revised preliminary conclusions/SSNIP analysis in the 2018 Further Consultation were based on the stated preferences from interviews with 17 multi-site customers, over and above the observed behaviour of End Users. The weight of evidence that formed the basis of ComReg's preliminary view that excluded wireless Ethernet LLs from the Relevant Retail LL markets in the 2018 Further Consultation and the view in this Decision comes from the analysis of SIR data collect from SPs¹⁰²⁴.
- A1.51 The interview question that Eircom identified as missing from the list published in ComReg 18/28 (Response to Requests for Clarifications), was a supplemental question to those listed. Interviewees that were using wired LLs as their primary data connection links were asked whether they would consider continuing purchasing these services or switch to wireless LLs if the price of wired LLs would increase by 5 to 10%. ComReg 18/28 did not give an exhaustive list of all questions asked in the interviews, noting that:
- ".. these questions are a guide to the areas and topics that ComReg would like to touch upon in the survey."*
- A1.52 Overall, ComReg rejects Eircom's criticism of the analysis carried out in the 2018 Further Consultation, that was expanded within this Decision, which resulted in the exclusion of wireless Ethernet LLs from the Relevant Retail LL markets.

¹⁰²³ See paragraphs 4.122 to 4.129 in this Decision.

¹⁰²⁴ Ibid.

A.1.3.4 Excluding Business Broadband from the Relevant Retail Product Markets

Respondents' Views

A1.53 Two Respondents (BT and Vodafone) commented on ComReg 's analysis in the 2018 Further Consultation which proposed the exclusion of business broadband from the Relevant Retail LL Markets. Both were supportive of ComReg's proposal.

ComReg's Assessment of Respondents' Views

A1.54 ComReg notes Respondents' support for the exclusion of business broadband from the as outlined in the 2018 Further Consultation. As noted in Section 4.4¹⁰²⁵ of this Decision, ComReg's position remains that business broadband does not fall within the Relevant Retail LL Markets.

A.1.3.5 Excluding Dark Fibre from the Relevant Retail Product Markets

Respondents' Views

A1.55 Two Respondents (BT and Vodafone) commented on exclusion of dark fibre from the Relevant Retail LL Markets as proposed in the 2018 Further Consultation¹⁰²⁶. Both were supportive of ComReg's proposal.

ComReg's Assessment of Respondents' Views

A1.56 ComReg notes the support from Respondents regarding the exclusion of dark fibre from the Relevant Retail LL Markets. As noted in Section 4.4¹⁰²⁷ of this Decision, ComReg's position remains that dark fibre does not fall within the Relevant Retail LL Markets.

¹⁰²⁵ See paragraphs 4.146 to 4.178 of this Decision.

¹⁰²⁶ See paragraphs 3.110 to 3.117 of the 2018 Further Consultation.

¹⁰²⁷ See paragraphs 4.196 to 4.213 of this Decision.

A.1.3.6 MI Retail Geographic Market Assessment

Respondents' Views

A1.57 Three Respondents (Eircom, enet and Vodafone) commented on the MI retail geographic market assessment in the 2018 Further Consultation¹⁰²⁸. All 3 Respondents agreed with the ComReg's proposed position that the MI Retail LL Market was national in its geographic scope.

ComReg's Assessment of Respondents' Views

A1.58 ComReg notes the support from all of Respondents to the geographic market assessment as set out in the 2018 Further Consultation. As noted in Section 4.6¹⁰²⁹ of this Decision, ComReg's position remains that all the Relevant Retail LL Markets, including the MI Retail LL market, are national in their geographic scope.

A.1.3.7 Other Comments

Respondents' Views

A1.59 ALTO stated that a number of the preliminary conclusions that were set out in the 2016 Consultation remained unchanged in the 2018 Further Consultation and suggested that the assessments in both consultations were not diligently carried out.

A1.60 enet acknowledged the significant effort made by ComReg to reconsider the retail market following the submissions to the 2016 Consultation and the consequential proposed reduction in the level of deregulation for WHQA services. Regarding the redaction of much of the analysis and SP data in the 2016 Consultation, enet also acknowledged the need for ComReg to balance the need for transparency with the need to protect SPs commercially sensitive information.

A1.61 BT raised concerns that, absent wholesale regulation, the retail market will become a duopoly. This is a result of retail competition's reliance on the wholesale market, primarily two large suppliers.

ComReg's Assessment of Respondents' Views

A1.62 ComReg notes Respondents' views.

¹⁰²⁸ Paragraphs 3.156 to 3.167 in the 2018 Further Consultation.

¹⁰²⁹ See paragraphs 4.232 to 4.263 of this Decision.

- A1.63 ComReg disagrees with ALTO's view that the retail market assessment in both the 2016 Consultation and the 2018 Further Consultation lacked a diligent application. ALTO did not provide sufficient detailed feedback as to the purported deficiencies in order for ComReg to respond in detail.
- A1.64 ComReg notes BT's concern regarding the absence of wholesale regulation and its impact on the retail market. ComReg notes that there a significant number of retail suppliers with their own networks in the Relevant Retail LL Markets, 14 are identified in Table 1. ComReg's assessment of competition in the WHQA Markets¹⁰³⁰ and the WHQA remedies¹⁰³¹ outlined in this Decision are deemed justified and appropriate to support competition in the Relevant Retail LL Markets.

¹⁰³⁰ See Sections 5,6,7 and 9 of this Decision.

¹⁰³¹ See Sections 8, 10 and 11 of this Decision.

A.1.4 Summary and Assessment of Respondents' Views on the Definition of the Relevant WHQA Product Markets

- A1.65 In Section 4 of the 2018 Further Consultation (Section 5 of this Decision) ComReg summarised Respondents' views as set out in the submissions to the 2016 Consultation and provided an assessment of those views.
- A1.66 Of the Seven Submissions received, five Respondents (BT, Eircom, enet, Vodafone and Zayo) commented on the product market definition. However, most of the comments were focussed on the scope of the MI WHQA product market definition. BT commented briefly on the definition of the TI WHQA markets.
- A1.67 BT agreed that there are separate LB TI WHQA, HB TI WHQA and MI WHQA markets. However, in BT's view there is a break in the chain of substitution at 1GB/s in the MI WHQA product market, thus meriting the identification of a separate High Bandwidth MI WHQA product market above this bandwidth. BT noted that breaks in the chain of substitution were found by other NRAs and was of the view that SPs' market shares would be different if two separate MI WHQA Markets were defined.
- A1.68 Four particular themes in the submission were discerned. These were the treatment of TI and broadband services in relation to MI WHQA services, the treatment of wireless P2P radio links in relation to the MI WQHA product market definition, the treatment of MNO backhaul, and whether, for MI WHQA services, a break in the chain of substitution exists at the 1 Gb bandwidth.
- A1.69 These issues are discussed below as follows.
- (a) BT's views on the treatment of TI WHQA and broadband in the context of the MI WHQA market (discussed in paragraphs A1.70 to A1.72);
 - (b) The treatment of wireless P2P radio links (discussed in paragraphs A1.74 A1.81 below);
 - (c) The treatment of MNO backhaul (discussed in paragraphs A1.82 to A1.100 below); and
 - (d) a break in the chain of substitution exists for MI WHQA services at the 1 Gb bandwidth level (discussed in paragraph A1.101 below).

A.1.4.1 BT's Views on the treatment of TI WHQA and broadband in the context of the MI WHQA market

A1.70 In its Submission, BT stated that it agreed that there is a separate market for LB TI WHQA up to and including 2 Mb/s. Moreover, they consider that business broadband services are not part of the relevant WHQA markets.¹⁰³² However, BT go on to state that:

“The delineation of WHQA from shared broadband services is generally regarded as reasonable; the extent to which there is migration away from the former to the latter is however not to be ignored and BT is seeing demand for smaller sites as part of existing multi-site deals to be supplied by broadband.”¹⁰³³

A1.71 BT then state that it approximates that 80% of LB TI WHQA will migrate to MI WHQA and the rest will migrate to broadband services. BT continue that is their view, the majority of the demand for MI WHQA originating from LB TI WHQA will be served by Eircom.¹⁰³⁴ However, ComReg has considered the fall in demand for LB TI WHQA services from 2015-2018 and found no evidence that the drop in demand for LB TI WHQA services from Eircom meant a commensurate rise in MI WHQA services being supplied by Eircom.¹⁰³⁵

A1.72 BT goes on to state that HB TI WHQA LLs should, however, be included in the MI WHQA Markets as:

“Following the changes to the MI market proposed by ComReg we consider the HB TI market needs to be reconsidered to align with the Zone A vs Zone B approach to MI otherwise it's quite possible for Eircom to circumvent the regulated Zone B MI market, both by using TI technology (some of which may already be sunk investment with little cost) and also TI emulation over an Modern networks. Both situations are unacceptable and undermine the regulation of MI Zone B.”¹⁰³⁶

¹⁰³² BT Submission Part 1, page 5.

¹⁰³³ BT Submission Part 1, paragraph 35.

¹⁰³⁴ BT Submission Part 1, paragraph 100.

¹⁰³⁵ See paragraph 5.193 above for more details.

¹⁰³⁶ BT Submission Part 1, page 5.

A1.73 However, ComReg disagrees with this approach because were Eircom to provide TI emulation, it is not providing an MI WHQA service, but rather a TI product, which is outside the scope of the MI WHQA Markets. Furthermore, there are 65 HB TI WHQA customers in the market. As such, they have a trivial effect on the number of MI WHQA circuits present in either the Zone A or Zone B MI WHQA markets.

A.1.4.2 P2P Wireless Radio Links

A1.74 Below, ComReg sets out its assessment of respondents' views in relation to the exclusion of Wireless P2P radio links from the MI WHQA market.

A1.75 3 of the 7 Respondents to the 2018 Further Consultation commented on the exclusion of P2P radio links from the MI WHQA Markets. Of these, 2 (BT and enet) agreed that they should be excluded as they are not comparable to MI WHQA over wired media due to poorer quality¹⁰³⁷, and that retail end-users have a preference for wired connections.¹⁰³⁸ On the other hand Eircom was of the view that they should be included in the MI WHQA Market.¹⁰³⁹ Much of Eircom's comments in relation to wireless LLs was focussed on the retail market assessment, and ComReg's assessment of Eircom's views in this regard have been considered in Section 4¹⁰⁴⁰ of this Decision, as well as in Section A.1.3.3 of Annex 1.

A1.76 It should be noted that (with the exception of P2P radio links used for some backhaul purposes such as MNO backhaul), P2P radio links are used primarily by retail end-users. As such, the rationale for excluding them from the MI WHQA markets is largely related to the considerations at the retail level as set out in detail in paragraphs 4.108 to 4.142 above.

A1.77 Eircom states that:

¹⁰³⁷ BT Submission Part 1, page 5; enet Submission, page 8

¹⁰³⁸ Vodafone Submission, page 8

¹⁰³⁹ Eircom Submission page 10

¹⁰⁴⁰ See paragraphs

“...for example, that wireless has been considered to be part of the market in other recent WHQA reviews, including in Portugal and Finland. eir is also of the view that the ComReg analysis conducted in this regard does not meet the threshold required to make a concrete conclusion in terms of the boundaries of the product market”¹⁰⁴¹

- A1.78 ComReg would note that irrespective of the findings in relation to the market definition by other NRAs, ComReg has considered all aspects of the supply and demand for MI WHQA services in depth and carried out a detailed assessment of the substitutability of P2P wireless radio links with wired MI WHQA services. For the majority of retail end-users P2P wireless radio links are not considered a substitute.¹⁰⁴² Furthermore, from a purely wholesale perspective, SPs (with the exception of Eircom) do not consider P2P wireless radio links as a substitute for MI WHQA provided over a wired medium.¹⁰⁴³
- A1.79 Eircom also states that in the context of wireless services ComReg should have considered the following factors
- (i) How a SSNIP would be likely to affect the retail market in terms of wholesale price increase pass through (i.e. the dilution ratio)*
 - (ii) What response in retail demand would be required to make the price increase unprofitable (i.e. the critical loss test)*
 - (iii) Whether the strength of indirect constraints would be weakened by retail customer switching to eir’s own retail arm¹⁰⁴⁴*

¹⁰⁴¹ Eircom Submission, page 11.

¹⁰⁴² See Figure 39 above.

¹⁰⁴³ ComReg also notes correspondence from Eircom on the 2 October 2019 where it states that Eircom notes ComReg’s statement in its Fixed radio links Annual Report 2019 (ComReg 19/89). In particular that *“Some operators use fixed radio links as an economic alternative to leased lines and optical fibre....Fixed radio links are often the preferred solution over cable and fibre where constraints such as cost, local topography (e.g. mountainous terrain or paths across water) and the need for access to remote rural regions are fundamental considerations.”* ComReg agrees with Eircom that where it is not viable to have a wired solution for leased lines, P2P radio links are considered as there is no alternative.

¹⁰⁴⁴ Eircom response; paragraph 51

A1.80 However, ComReg is of the view that in the detailed analysis of the extent and circumstances in which users of wireless P2P radio links consume them has implicitly taken these considerations into account and that constraint from wireless on a Hypothetical Monopolist of wired WHQA would not be sufficient to make a SSNIP profitable.

A1.81 As such, ComReg is satisfied that the analysis it has undertaken is sufficient to ascertain that P2P radio links are not part of the relevant MI WHQA Markets.

A.1.4.3 MNO Backhaul and self-supply

A1.82 2 of the 7 Respondents (BT and Zayo) made submissions in relation to the approach ComReg set out in the 2018 Further Consultation in relation to the treatment of self-supplied WHQA services for the for the purposes of MNO backhaul.

A1.83 In its submission. BT makes a number of observations which ComReg sets out under the themes below:

- (a) BT considers in its summary that ComReg has excluded MNO backhaul from the relevant MI WHQA markets;
- (b) BT provides observations on self-supply and captive sales;
- (c) BT then discusses the Guidance of the EU and BEREC on the matter and also the practice in other member states; and
- (d) The 3/02 Merger and netshare arrangements

That ComReg excluded MNO backhaul from the relevant market

A1.84 In paragraphs 44-50 of its submission, BT states that it;

“does not find it relevant that ComReg draws a distinction between the downstream retail division of leased lines of the incumbent and sales to a daughter company” ¹⁰⁴⁵

A1.85 They go on to state that;

*“Nor do we see the distinction as arising from Commission guidance, if ComReg was correct, then the whole point of postulating notional upstream markets would likely evaporate in large measure.”*¹⁰⁴⁶

¹⁰⁴⁵ BT Submission Part 1, paragraph 45.

¹⁰⁴⁶ BT Submission Part 1 page 46.

A1.86 In response, ComReg would note that there is a distinction between sales of WHQA that are used to connect retail customers and those that are used as network inputs, such as for the purposes of backhaul, either fixed or mobile. ComReg does not gather information on the own network inputs of all SPs through which they build their networks. Rather ComReg assesses the retail and wholesale sales of SPs to ascertain the extent of the relevant WHQA markets. However, where SPs purchase and sell WHQA services for the purposes of network inputs as well as those that are used for the provision of services to retail end-users, ComReg does explicitly consider these services in its market definition. As such, where WHQA services are sold or purchased for any reason, including for the purposes of MNO or fixed backhaul, they are included.

BT observations on self-supply and captive sales

A1.87 BT disagrees with ComReg's statement that:

“Eircom’s subsidiaries are unlikely to purchase WHQA products from other SPs irrespective of the price charged for these products by the upstream arm. Thus, ComReg are of the...view that Eircom’s self-supply to its mobile arm...is outside the scope of the relevant...market as such supply is unlikely to be converted into external merchant supply. Similarly, other MNO’s internal supply of...connectivity to their...mobile operations is excluded from the relevant market as such supply is likely to be captive.”¹⁰⁴⁷

A1.88 BT stated that:

“The justification for excluding an assessment of sales to the downstream MNO division is not self-evidently correct...and derives from a narrow view of the relevance of vertical integration or separation.”¹⁰⁴⁸

A1.89 BT goes on to discuss the economic theory of replicating integration through contract and the theory of optimising internal transfer charges.¹⁰⁴⁹

¹⁰⁴⁷ See paragraph 5.24 of the 2018 Further Consultation.

¹⁰⁴⁸ Paragraph 55; The BT Submission Part 1

¹⁰⁴⁹ Paragraphs 56-59; BT Submission Part 1

A1.90 ComReg does not consider it appropriate to comment on these issues but simply to note again, that self-supplied network inputs that are used for either fixed or mobile backhaul are not considered contestable. Where these services are purchased from other SPs, they are considered part of the relevant MI WHQA markets.¹⁰⁵⁰ Furthermore, in the relevant WHQA markets where Eircom is designated with SMP, it is obliged to provide WHQA services to all SPs for all purposes, including those to be used as network inputs.

The guidance of BEREC and the EU as well as the practice in other Member States

A1.91 BT begins by reiterating the established guidance of the Commission that it is “appropriate for NRA’s to construct notional markets where potential demand exists. Here the implicit self-supply of this input by the incumbent should to itself should be taken into account”.¹⁰⁵¹

A1.92 ComReg would note that this is precisely the approach that has been taken in this Decision under the Modified Greenfield Approach.

A1.93 BT go onto quote that the SMP Guidelines where they state that:

*“NRAs should consider the ability of an operator to self-supply (either through a portfolio of products generated through vertical integration or through the operation of intra-corporate arrangements with members of a wider corporate group) multiple-play services, in markets where such offers are important and/or where a separate retail market could be defined for bundled offers, when compared to the smaller portfolio offerings of its immediate competitors.”*¹⁰⁵²

A1.94 BT then states because of these statements, MNO backhaul should be included in the regulatory assessment.

A1.95 In response, ComReg notes that it has taken full account of the relevant guidelines and that it has included MNO backhaul, as well as all other network inputs where they are supplied and purchased by other SPs at the wholesale level.

¹⁰⁵⁰ ComReg would also note that to consider all network assets of all SPs including their core network assets – be they for the purposes of fixed or mobile network inputs is not in keeping with established market definition principles.

¹⁰⁵¹ Paragraph 64; BT Submission Part 1

¹⁰⁵² Paragraph 65; BT Submission Part 1

A1.96 At paragraph 69 of its submission, BT again asserts that ComReg has excluded MNO backhaul. Again, ComReg would note that it hasn't.

A1.97 BT then reference a study on MNO backhaul that it undertook in other EU countries. In particular, it states that

“In summary, the situation is that there is wide variation in the domestic circumstances which has meant that is great variation in outcomes for the regulation of MNO backhaul...there is no support of the captive sales argument not to look at MNO backhaul purely as a matter of principle.”¹⁰⁵³

A1.98 Again, ComReg would note that it has considered MNO backhaul, as all other network inputs and has considered the wholesale supply and demand for these services in the relevant WHQA markets.

The 3/02 Merger and net-share arrangements

A1.99 BT makes reference to the MVNO remedies that were stipulated as part of the 2014 Hutchison/02 merger and in particular to the relative failure of these MVNO's to gain retail mobile market shares.¹⁰⁵⁴ ComReg does not consider these issues relevant to the treatment of self-supply for the purposes of the definition of the relevant WHQA markets.

A1.100 Finally, ComReg understanding is that the Mosaic is no longer active in the mobile base station business.¹⁰⁵⁵

A.1.4.4 Chain of Substitution and the MI Market

A1.101 ComReg has considered this to be a substantive issue and deals with the comments and the response in the main body of this Decision. Please see paragraphs 05.90 to 5.145 for more details.

¹⁰⁵³ Paragraph 78; BT Submission Part 1

¹⁰⁵⁴ Paragraph 79; BT Submission Part 1

¹⁰⁵⁵ An extensive desktop search did not return any results for Mosaic

A.1.5 Summary and Assessment of Respondent Views in relation to the Geographic Scope of the Relevant WHQA Markets

A1.103 In this section, ComReg sets out its assessment of Respondent's views in relation to the geographic scope of the Relevant WHQA Markets with a particular emphasis on the MI WHQA markets.

A.1.5.1 Introduction and Background

A1.104 This Section considers the comments and observations made by Respondents in their Submissions to the 2018 Further Consultation (and in subsequent meetings) with respect to the geographic scope of the MI WHQA Markets. It also discusses additional evidence gathered by ComReg and its further analysis of geographic delineation of these markets. Broadly, the structure of the Section address issues on a thematic basis and is separated into 8 sub-sections. These are:

- (a) the use of the forecast and current demand as applied to the 2018 Tera Algorithm (discussed in Section A.1.5.2 below);
- (b) the approach taken to the mapping of SPs' networks (discussed in Section A.1.5.3 below);
- (c) the choice of geographic unit used in the analysis (discussed in Section A.1.5.4 below);
- (d) the distance criterion used in the analysis (discussed in Section A.1.5.5 below);
- (e) Eircom's CEI offers and their usage (discussed in Section A.1.5.6 below);
- (f) the proportionality criterion used in the algorithm (discussed in Section A.1.5.7 below);
- (g) other important matters relating to the 2018 Tera algorithm and mapping contiguity issues considered under the general heading of Boundary issues (discussed in Section A.1.5.8 below); and
- (h) The Trunk-Terminating boundary of the MI WHQA Markets (discussed in Section A.1.5.9 below).

A.1.5.2 Current and Forecast Demand databases

Introduction

- A1.105 The purpose of this Section is to respond to Submissions to the 2018 Further Consultation on ComReg's use of the forecast database of potential HQA end-users' premises (referred to as the "Organisations"¹⁰⁵⁶ database) in the 2018 Tera Algorithm and to explain why ComReg has decided not to use any forecast database in the updated 2019 version of this algorithm (referred to as the '**2019 Tera Algorithm**'). It also explains why ComReg has decided to continue to use the Connected Premises¹⁰⁵⁷ metric to represent current HQA demand and how some issues concerning the 2016 Connected Premises database relating to data accuracy have been remedied.
- A1.106 The Tera algorithm as detailed in the flowchart contained in the 2018 Tera Report¹⁰⁵⁸ (replicated in Figure 74 below) published as part of the 2018 Further Consultation, contained 2 main strands of computation as highlighted in the red boxes in Figure 74. These described how the spatial computations calculated the volumes of Small Areas ('**SA(s)**') contained within various component "buckets" which ultimately contributed to the overall delineation of the then Zone A MI WHQA Markets and Zone B MI WHQA Markets. These in turn used the current demand database composed of the locations of all SPs' Connected Premises and the forecast demand Organisations database. This was extracted from the Eircode database of premises locations of all non-residential organisations as described in page 19 of the 2018 Tera Report. These were applied as laid out in section 3.1. of the 2018 Tera Report and are reprised in the following 2 paragraphs.

¹⁰⁵⁶ As explained in Appendix 1 of the 2018 Further Consultation ('**2018 Tera Report**'), ComReg Document No.18/08a,p.19.

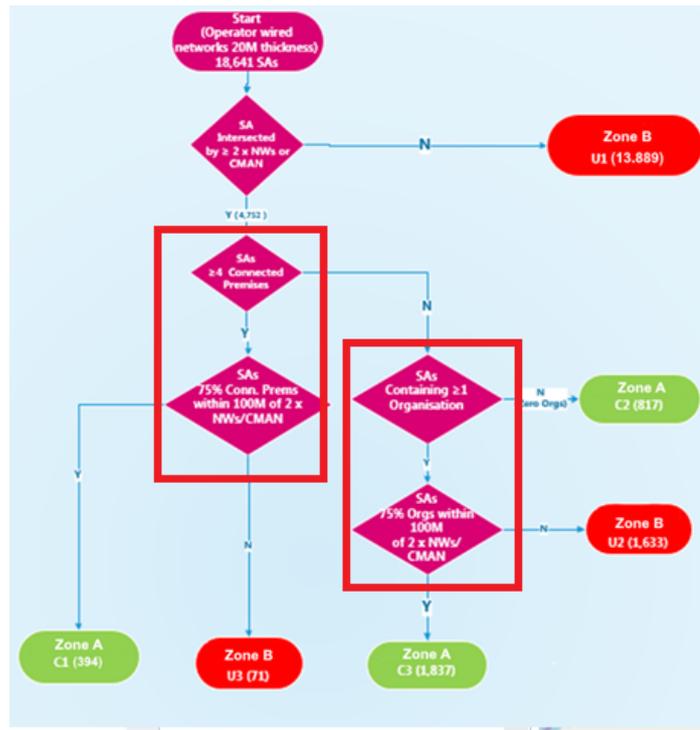
¹⁰⁵⁷ Connected Premises refers to customer premises or locations which are connected by SPs with fixed wired media for the purposes of delivering MI HQA services.

¹⁰⁵⁸ 2018 Tera Report, p.23.

- A1.107 The first test in the 2018 Tera Algorithm was to assess whether or not a SA was touched or intersected by 2 or more Alternative Networks ('ANs')¹⁰⁵⁹. Those SAs which failed this test were considered to be areas of low concentration of alternative telecommunications infrastructure. Those SAs which passed this test were then subject to a second test to assess the number of Connected Premises contained within them. Those SAs that were found to have 4 or more Connected Premises were then tested a third time to measure the distance between such Connected Premises and ANs. Where 75% or more of the Connected Premises within a SA were within 100 metres of 2 ANs, the SA(s) were considered to be areas of high concentration of alternative infrastructure. Those that failed the 75% criterion test were considered to be areas of low concentration of alternative infrastructure.
- A1.108 Those SAs which were found to contain less than 4 Connected Premises (i.e. those that failed the test above) were then tested to assess the number of Organisations contained within them (being a proxy of potential demand). There are just over 15K Organisations distributed throughout the country. The same 75% distance criterion was again applied to those SAs found to contain more than 1 Organisation and the 75% distance criterion was applied to each such SA. Those that passed this test were considered to be SAs of high concentration of alternative infrastructure and those that failed as areas of low concentration. SAs with no Organisations within them but containing 2 or more AN infrastructure were considered to be areas of high concentration of alternative infrastructure.

¹⁰⁵⁹ Alternative Networks refers to fixed telecommunications networks of SPs other than Eircom.

Figure 74: 2018 Tera Algorithm in Appendix 1 of the 2018 Further Consultation



Future Demand – Forecast “Organisations” Database

Preliminary View on the Forecast “Organisations” Database in the 2018 Further Consultation

A1.109 In the 2018 Further Consultation¹⁰⁶⁰, ComReg’s noted that its analysis should be forward looking in order that its final decision would be appropriate and fit for purpose for the review period. For this reason, various methods for attempting to understand possible future demand (referred to as ‘potential demand’) for HQA leased lines were considered, but only one appeared in any way realistic or feasible given the data sets available to ComReg.

¹⁰⁶⁰ See paragraphs 4.184 to 4.189 of the 2018 Further Consultation.

- A1.110 In particular, ComReg explored ways of finding business data which would rank organisations by employee numbers and/or turnover, with this being a proxy for potential HQA demand. However, outside of a limited data subset which contains information on businesses supported by IDA Ireland¹⁰⁶¹, this information was not available. Other sources such as the Irish Times Top 1,000¹⁰⁶² did not have sufficient geographic data to be suitable for analysis¹⁰⁶³. Due to the lack of a sufficiently robust external dataset, ComReg composed a list of circa 15K premises which was obtained by cross-referencing retail multisite customer names (extracted from the Q2 2016 list of retail MI circuits provided by all SPs in response to SIRs) against the Geodirectory list of approximately 300K business premises locations. This was termed the Organisations database. The methodology used to create the Organisations database was laid out in detail in the 2018 Tera Report¹⁰⁶⁴.
- A1.111 This analysis was a “one-shot” geographic analysis using the Connected Premises data for the period Q4 2016, as this was the first time such data had been collected by ComReg. The reasons for using the Connected Premises metric rather than service level market shares is explained in detail in Annex 3 below. ComReg acknowledges the limitations on the absence of comparator and/or trend data, however this has been driven in part by the absence of accurate data from SPs. It should be noted that, prior to adopting this Decision, ComReg always intended to complete an analysis for a further time period in order to present trends in the data. ComReg has now gathered and analysed Connected Premises data for years 2016-2018¹⁰⁶⁵ and the results are presented in Section 5.7 above.

Respondents’ Views on the Forecast “Organisations” Database

- A1.112 BT and Vodafone criticised the use of the Organisations database as a basis for predicting future HQA demand. No other SPs made specific comments on this issue.

¹⁰⁶¹ See www.idaireland.com.

¹⁰⁶² See www.top1000.ie.

¹⁰⁶³ ComReg also approached the Companies registration Office and the Central Statistics Office to source appropriate data.

¹⁰⁶⁴ See page 19 of the 2018 Tera Report.

¹⁰⁶⁵ Data obtained under SIRs for these periods as described in Annex 3.

- A1.113 BT stated in its Submission¹⁰⁶⁶ that the “forward look” premises are unlikely to require leased lines. It cited its experience that many of its customers (e.g. retail, forecourt, and small financial services companies) have a central site connected by fibre based LLs but its satellite or branch premises’ requirements are satisfied with a DSL service. Thus in its view, the Organisations premises database was a poor proxy as a predictor of HQA demand. Its view was that the proposed removal of regulation via ‘Step 2B’ of the 2018 Tera Algorithm (referring to the criteria that 75% of Organisations must be within 100 metres of 2 ANs) is flawed and, additionally, that the migration of current TI LLs to future MI LLs could be a better predictor of MI uptake, particularly for Eircom’s customer base¹⁰⁶⁷.
- A1.114 It also raised an issue regarding volumetric cut-off level of 4 for Connected Premises in Step 2a in the 2018 Tera Algorithm. This meant that, for SAs which contained between 1 to 3 Connected Premises, current demand was ignored, and these SAs were then instead tested with what it considered to be the questionable forecast database (rather than the more reliable current demand data). Hence, BT considered that the 2018 Tera Algorithm was flawed as a potential demand database that has issues of robustness had taken precedence over proven current Connected Premises demand in SAs where there was confirmed existing demand of up to 3 connected premises.
- A1.115 BT claimed that this would result in an unknown number of SAs being incorrectly allocated between the Zone A MI WHQA Markets and Zone B MI WHQA Markets on the basis of using a flawed and unproven database.
- A1.116 Vodafone considered that the Organisations database was arbitrary¹⁰⁶⁸ and that if a site was not already connected by a leased line, there was no logic to support the case that it would be at any time in the future. It also agreed with BT’s view that such premises could be supported by other products such as broadband and the Organisations database was not therefore, a useful predictor of HQA demand. It asserted that the use of the Organisations database could result in an unwarranted expansion of the Zone A MI WHQA Markets.

¹⁰⁶⁶ BT’s Submission Annex paragraph 43.

¹⁰⁶⁷ BT Submission Part 2 paragraph 2.

¹⁰⁶⁸ Vodafone Submission page 7.

A1.117 Eircom claimed that ComReg's analysis was flawed in its entirety. It provided lists of premises in the Zone B MI WHQA Markets it claimed should be within the Zone A MI WHQA Markets and additionally, lists of SAs which it suggested were incorrectly assigned to the Zone A MI WHQA Markets. No other Respondents registered specific comments on the composition of the Organisations database and its application within the algorithm.

ComReg's Assessment of Respondents Views on the Forecast "Organisations" Database

A1.118 ComReg has already acknowledged the errors inadvertently incorporated in the 2018 published map in Section 5.7 of this Decision and this issue is also explained in detail within the 2019 Tera Report¹⁰⁶⁹. It should be noted that these issues were partly due to SPs having provided ComReg with erroneous data concerning their Connected Premises. The use of the entire 300K current Eircode/Geodirectory database of all non-residential locations was mistakenly used in the forecast calculations within the 2018 Tera Algorithm. This location data was used rather than the 15K Organisations database which was actually specified in the 2018 Tera Algorithm and this contributed to some of the inaccuracies within the published map. Although these errors are relevant to the map published with the 2018 Further Consultation, the 2018 Tera Algorithm has now been adapted (from here on referred to as the 2019 Tera Algorithm or simply the 2019 Algorithm) and the data sets used have been thoroughly checked with repeated involvement of the relevant contributing SPs. SPs were involved in this verification process as described in Annex 3, concerning data collection issues and treatment. A corrected database was used in the final analysis supporting this Decision.

A1.119 The information provided in the 2018 Further Consultation was inadvertently based on the use of all the national 300K non-residential premises locations rather than the 15K potential HQA premises. The outcome of this error was that over 900 (approx. 5% of all SAs) SAs were incorrectly assessed as having potential demand. This meant that these SAs were attributed to Zone B rather than Zone A. Furthermore, there were also errors in the mapping and connected premises data provided by SPs as detailed in Section 2.2 of the 2019 Tera Report¹⁰⁷⁰.

¹⁰⁶⁹ See Section 2 of 2019 Tera Report, Appendix 4 of this Decision.

¹⁰⁷⁰ Annex 4 of this Decision.

- A1.120 Based on SPs' responses to SIRs, ComReg has now completed a geographic analysis for 3 time periods covering each of the years 2016, 2017 and 2018. It is satisfied that the process has been thorough and that the results are robust given the repeated rechecking and verification of data by ComReg. This included returning of data to SPs for either full completion where omissions were identified or for internal rechecking and verification of geographical and address data, where errors had been uncovered by ComReg or where the data was considered suspect or contradictory. This process often required a number of iterations to obtain data of reasonable quality.
- A1.121 The analysis completed by ComReg's consultants, Tera (and its mapping subcontractor Geocible) also takes into account the constraints and limitations of the data provided to it by SPs e.g. very few SPs use Eircodes or X, Y coordinates to record precise customer premises location information. ComReg's consultants were able to successfully geocode sufficient proportions of SP location data using business customer names and addresses¹⁰⁷¹ in order to render the data set more useful for the geographical analysis in this Decision.
- A1.122 Having data for different time periods (2016 to 2018) has also allowed ComReg to test the veracity of the original forecast 15K Organisations database. Tera has tested the Organisations (forecast) database which was used in the analysis¹⁰⁷² against the 2018 current demand (actual Connected Premises database) in order to assess the conversion rate of what was then forecast demand to actual in-service current demand, over a 2 year period. Only a 8%¹⁰⁷³ correlation between forecast and actual demand was observed from this analysis. Thus ComReg has formed the view that the Organisations database was not sufficiently robust or accurate to be used as an appropriate predictor of future MI WHQA demand.¹⁰⁷⁴
- A1.123 Given that the potential demand of Organisations has been found by ComReg and its consultants to be an unreliable predictor of future demand for MI WHQA services, ComReg has removed this test in its entirety from the 2019 Tera Algorithm.

¹⁰⁷¹ Over 95% for Connected Premises data and over 70% for service share (LL) data.

¹⁰⁷² This used data for the year 2016.

¹⁰⁷³ Result and methodology are detailed in Section 3.1 of the 2019 Tera Report, Appendix 4 of this Decision.

¹⁰⁷⁴ Tera encountered difficulties in the conduct of this exercise due to the poor quality of address information provided by SPs which did not facilitate the precise geocoding of premises to sufficient accuracy to allow matching of X,Y coordinates between these 2 data sets.

- A1.124 Because of the removal of the Organisations test from the 2019 Tera Algorithm, ComReg acknowledges that all current demand should now be tested for its proximity to alternative networks and has decided to remove the threshold of 4 connected premises from the connected premises proximity test. As such, any geographic unit with a connected premise is tested for the proximity of its connected premises to alternative networks using the 75% criterion in the updated algorithm.
- A1.125 It should be noted that ComReg examined other methodologies in an attempt to create a useful database of forecast demand. It investigated using the NACE¹⁰⁷⁵ codes industry classification system in conjunction with the Geodirectory¹⁰⁷⁶ database of business for the entire country and to compare these with the NACE codes of current retail leased lines customers. However, this proved unsuccessful for a number of reasons.
- A1.126 Firstly, one issue related to the nature of how NACE codes are allocated to retail customers, for example a retail supermarket chain may have allocations for both the retail grocery and distribution industries. Secondly, the sole source of NACE code information which is currently available for general use did not contain information on the number of employees or company turnover (possible proxies in assessing whether a business might be a source of potential HQA demand). Hence, based on these key criteria, it proved impossible to parse candidate companies/premises as being those more likely to use leased lines from other less likely candidate business premises. For instance, it was found that a local pharmacist may have a common NACE code as that attributed to major pharmaceutical company and a local insurance broker registered as a sole trader could have the same NACE code as a major multinational insurance corporation. These types of customers, despite having the same NACE codes, would likely have different connectivity requirements with small organisations unlikely to require MI WQHA services.

¹⁰⁷⁵ <https://stats.oecd.org/glossary/detail.asp?ID=1713>.

¹⁰⁷⁶ <https://www.geodirectory.ie/>.

- A1.127 ComReg also made a number of attempts to extract matching NACE codes of retail LL customers from the 300K NACE code list of all businesses. On each attempt a different combination of LL customer NACE codes were used as many LL customers had multiple sub-codes. The point of this exercise was to allow ComReg to carry out a comparative analysis to gauge which candidate NACE codes might be a suitable proxy for HQA demand. However, on each occasion many tens of thousands of premises (more than 70K on each attempt) were produced. As explained above, it was not possible to parse this information based on turnover or number of employees in order to identify larger business i.e. to identify those premises more likely to require HQA services. As each attempt produced volumes of premises many multiples of current demand, ComReg considered that this approach would result in an unrealistic estimate of future HQA demand (despite the year on year increases of 8.3% and 15% of Connected Premises for the years 2017 and 2018 respectively) and therefore, could not be used.
- A1.128 Tera also conducted this exercise independently and achieved similar results which confirmed that this overall approach of using NACE codes to derive a proxy for future HQA demand was unsuitable. As such, ComReg's view is that the current actual demand trend for the past 3 years provides a more reasonable and sufficiently reliable prediction of future demand.
- A1.129 ComReg also notes that Ofcom, as detailed in its recent Business Connectivity Market Review ('**BCMR**') decision concerning its leased line market review ('**Ofcom June 2019 BCMR Statement**')¹⁰⁷⁷ used a similar method to create a proxy for the current addressable market demand for HQA services by using a database for premises locations of organisations had greater than 250 employees and locations of LL connected mobile base stations. This is discussed in detail in paragraphs A1.159 to A1.161 below.

¹⁰⁷⁷ Promoting competition and investment in fibre networks: review of the physical infrastructure and business connectivity markets Volume 2: market analysis, SMP findings, and remedies for the Business Connectivity Market Review (BCMR), published 28 June 2019: https://www.ofcom.org.uk/data/assets/pdf_file/0025/154591/volume-2-bcmr-final-statement.pdf

- A1.130 ComReg has also investigated BT's assertion that Eircom's current TI customer base would largely automatically migrate to Eircom's MI service – thus being a potential proxy for future MI HQA demand. The data does not bear this out. When business consumers change technology and telecoms requirements they generally issue a tender (whether formally or informally via a dialogue with suppliers). ComReg's analysis as laid out in the discussion on the product market definition in Section 5 demonstrates that the majority of retail customers no longer purchasing Eircom's TI LLs do not necessarily reappear on its list of identified MI customers. Additionally, it is possible that some of the remaining 'rump' of TI LL demand, which is currently fulfilled by analogue leased lines and bandwidths at the lower end of the low bandwidth TDM services (e.g. 64Kb/s) may not require MI WQHA services in future but will instead be replaced by the growing machine-to-machine and IoT¹⁰⁷⁸ technologies.
- A1.131 Finally, ComReg notes Vodafone's observation¹⁰⁷⁹ that premises which require a leased line service will probably already have this service and sites which do not already have a leased line may never need one. While this may be the case, it cannot be ruled out that there may be new demand from currently non-connected premises given the high geographic correlation of the areas in which many of the connected premises locations across the years 2016 to 2018 locations are situated. The mapping of these locations indicates that the areas of major concentrations of MI WHQA demand have remain broadly unchanged and are generally situated in the same set of established commercial districts and business and retail parks. As a result, ComReg considers that this also supports its view that current trends in actual demand are a more accurate and reliable predictor of future MI WHQA demand.

¹⁰⁷⁸ Internet of Things.

¹⁰⁷⁹ Vodafone Submission, page 7.

Current Demand - Connected Premises Database

ComReg's Preliminary view in the 2018 Further Consultation on the Connected Premises Database

- A1.132 In the 2018 Further Consultation, ComReg explained its use of the list of SP "Connected Premises" to assist in the definition of the geographic scope of the MI WHQA Markets. It noted that SPs were able to provide "better quality" information in relation to connected premises¹⁰⁸⁰ relative to what had been provided for the purpose of the 2016 Consultation.
- A1.133 It also recognised that the analysis was based on data covering one particular point in time (at the end of 2016) but that it would perform the same analysis using "end of 2017" data¹⁰⁸¹ in order to provide a trend analysis.
- A1.134 To expand on this point, ComReg has noted that the quality of the data provided by SPs concerning their LL sales volumes can vary in their level and accuracy of detail. It also depended on the manner in which various SPs recorded their data. This is explained in detail in Annex 3 of this Decision, concerning data collection issues and treatment. This manifested most obviously in the recording of physical and logical circuits where many SPs categorised their entire estate of circuits as physical and this exaggerated their volume of circuits in many instances. Multiple circuits provided at the same location were recorded as physical and seemed to reflect each service instance delivered to a customer premises, and charged to the customer, ignoring the bearer circuit over which they were presented. For example, a SP providing 4 x 100 Mb/s logical circuits delivered to a customer via a 1Gb/s physical Ethernet bearer could present its data as 4 physical circuits, while others could present the same data as a single 400 Mb/s physical circuit or as a single 1Gb/s physical and 4 logical 100 Mb/s circuits.

¹⁰⁸⁰ See paragraph 2.43 of the 2018 Further Consultation.

¹⁰⁸¹ Footnote 516, page 209 of the 2018 Further Consultation.

A1.135 Contrarily, Eircom¹⁰⁸² and BT¹⁰⁸³ next generation wholesale Ethernet products are highly structured with the physical access and associated logical circuits being clearly demarcated and appropriately identified as such. However, Eircom and BT also provide Ethernet products that did not necessarily follow this structured physical and logical pattern exactly and were sold and recorded as physical circuits only. ComReg was able to identify these corresponding products and related LL circuits and accordingly ensured that its circuit count was accurate.

A1.136 In the same manner, the quality of address information provided by SPs with respect to LL premises served was often found to be of poor quality. In many instances the address information provided by the same SP for the LL circuits provided to the same address was also varied and non-standard. Addresses were not comparable due to apparent differences in how data on such LL circuits had been entered on various SPs' systems by sales and/or administration staff. In addition to the absence of standard address information and address formats being used within individual SPs, it was unsurprising that there was no standardisation across the industry. Hence, many single premises recorded as being served by a LL were found to have over a dozen address variants recorded on SPs data. One example is a data centre¹⁰⁸⁴ which had 27 different variations of its address being used by multiple SPs in their 2017 data.

¹⁰⁸² As described at www.openeir.ie.

¹⁰⁸³ <https://www.btireland.com/content/dam/btireland/documents/general/Data-sheet-Wholesale-Ethernet-Connect.pdf>.

¹⁰⁸⁴ [REDACTED].

A1.137 In order to address these challenges, ComReg collected MI HQA Connected Premises information from SPs. This approach was designed to allow ComReg to better access and identify any economic “local access” bottleneck for the provision of LLs and avoid possible misinterpretation of MI WHQA service data due to SPs’ varied manner of recording circuits referred to above. ComReg anticipated that SPs would have this basic network information readily available relating to which premises they had connected to their respected networks. ComReg’s expectation was that SP connected premises address information would be more accurate than LL circuit information which is generally obtained from billing information rather than asset registers and geographic based databases. It also expected the information to be “more unique” as the records were for single instances of premise addresses rather than multiple service instances. In ComReg’s opinion, this approach would also provide a far more accurate reflection of the geographic nature of the market whereas the more unreliable recording of LL circuits (used to produce service shares), which was in many instances based on unstructured address information, could potentially lead to material misrepresentations of the geographic state of the market assessment resulting in consequential errors in identifying any economic bottlenecks in the WHQA markets.

Respondents’ Views on the Connected Premises Database

A1.138 BT was the only Respondent who criticised ComReg’s use of the Connected Premises metric for calculating market shares for the purpose of the assessment of the geographic scope of the WHQA markets. It characterised this exercise as unconventional¹⁰⁸⁵. BT suggested that ComReg could provide “*clarity and transparency*”¹⁰⁸⁶ by providing market shares based on service shares (i.e. market shares calculated based on instances of live circuits) in addition to those market shares calculated based on LL connected buildings in order to provide clarity and transparency.

¹⁰⁸⁵ BT Submission Part 2 Paragraph 9.

¹⁰⁸⁶ BT Submission Part 1 Annex Paragraph 64.

- A1.139 In addition, BT criticised the manner within which ComReg had treated the connected premises database in its geographic analysis. It instead proposed a complex exercise¹⁰⁸⁷ which involved assessing each connected and pre-ducted building, though it acknowledged that NRAs have “shied away” from using buildings as the basis of analysis on pragmatic grounds¹⁰⁸⁸ (though it contended that this appeared not to be the case in Ireland). It suggested that buildings should also be parsed by serving leased line bearer or access circuit to allow testing for a possible bandwidth break and the possible regulation of lower bandwidths in a nationally defined market and also suggested a weighting of buildings based on the number of circuits sold at each.
- A1.140 BT then proposed using the SA as the geographic unit though rejected ComReg’s distance and proportionality thresholds used in the 2018 Tera Algorithm which were used to indicate whether such SAs fell within Zone A or Zone B. It went on to propose categorising each SAs for connected and pre-ducted premises at various dig distance from all ANs present and then grouping these according to services shares or HHI values. It further suggested identifying buildings *other than* pre-ducted building but those within 20 and 50 metres classified as “marginal buildings” which could be used in a subsequent SMP assessment.
- A1.141 BT also suggested creating a 3 dimensional array¹⁰⁸⁹ to allow grouping of ANs which could be flexed for the X, Y and Z axes parameters used. These were: Eircom’s market share (units of percentage); the number of ANs present (units of whole numbers); and radial distances of connected premises to ANs within SAs (unit in metres). It also suggested that scheme could be modified to facilitate SA groupings based on HHI values rather than market shares. It referred to a study contained in an Ofcom BCMR consultation from 2008¹⁰⁹⁰ (on very high bandwidth TI symmetric broadband markets) as the basis for a suggested methodology for such an approach and referred to “*Annex 6 of the July 2008 Consultation available on the Ofcom website*”¹⁰⁹¹. It offered an example where its theoretical calculations provided an output showing there to be less than a ‘whole number’ of an AN being present.

¹⁰⁸⁷ BT Submission Part 2 pages 23 to 28.

¹⁰⁸⁸ *Ibid* Paragraph 110.

¹⁰⁸⁹ *Ibid*.

¹⁰⁹⁰ https://www.ofcom.org.uk/data/assets/pdf_file/0016/50425/consultation.pdf

¹⁰⁹¹ BT Submission Part 2 FN 41 page 26.

ComReg's Assessment of Respondents' Views on Connected Premises Database

A1.142 The economic bottleneck which ComReg has identified is the availability of local access network(s) for the purpose of delivering MI WHQA LL. Thus, the most accurate and therefore ComReg's preferred metric for measuring conditions of competition is the volume and location of connected buildings for the purpose of delivering MI WHQA LLs, albeit adjusted in accordance with the "Modified Greenfield Approach"¹⁰⁹². Many sites of major consumers of WHQA services have been connected by multiple SPs, each in turn delivering multiple circuits to these large customers. SPs may also provide a range of services which require multiple leased lines connected to several customers located in the same multi-tenancy building. Examples of such premises are large office blocks and data centres.

¹⁰⁹² See paragraph 2.22 of this Decision.

A1.143 ComReg confirmed in the WHQA Clarifications Document in response to BT Issue No.7 that the same premises could be counted several times where it was connected by multiple operators. This does not result in the overall size of the market being inflated. ComReg considers that the use of connected premises is a reasonable and fair metric for measuring market shares. As with service shares, it is not uncommon for a single end-user to have multiple LL circuits delivered by several SPs at the same premises¹⁰⁹³. These circuits would be allocated to each respective SP to count individual SP shares of the overall service shares¹⁰⁹⁴. Exactly the same logic applies to connected premises. Due to the issues with SPs recording of circuits¹⁰⁹⁵, how circuits are counted can be open to interpretation and misleading due to the varying manner in which different SPs record logical and physical circuits as discussed in detail in Annex 3 of this Decision concerning data collection issues and their treatment. ComReg considers that using Connected Premises as the metric for measuring market shares is the most accurate, reliable and reasonable method to measure any possible economic bottleneck associated with the use of local access connectivity for the purpose of providing HQA services. Hence, the notion that recounting the same connected premises a number of times where it has been connected by multiple SPs would exaggerate the overall market size does not hold. This effect is more likely to manifest itself using service shares due to the variance in the recording of physical versus logical circuits by different SPs detailed in Annex 3 of this Decision concerning data collection issues and their treatment. This was where many SPs appeared to have recorded multiple logical circuits delivered at premises as physical circuits, thus inflating their respective service shares. ComReg's expectation was that accurate Connected Premises data would be readily available to SPs for engineering/technical inventory reasons and to support their sales and market intelligence activities.

¹⁰⁹³ Similarly, if a SP has access to a multi-occupancy building, by supplying 1 customer in that premises, it has overcome the major economic barrier to supply other customers within the same premises.

¹⁰⁹⁴ This is analogous to the market for cars: where a car owner owns multiple cars - this does not reduce the overall market for cars.

¹⁰⁹⁵ As explained in Annex 3 of this Decision concerning data collection issues and their treatment and in Appendix 3 of the 2016 Consultation concerning Leased Line data issues and Treatment.

- A1.145 However, the exercise of assembling connected premises data proved challenging for some SPs. The overestimation of the volumes of connected premises provided by some significant SPs in their 2016 data was only uncovered upon detailed comparison with data provided by them for the following year, the 2017 data. This caused further delays to the completion of the analysis as it required the time consuming rechecking and cleansing of the entire tranche of the 2016 connected premises data sets for all SPs as described in detail in Annex 3 of this Decision.
- A1.146 ComReg accepts the point that trend data is required to better inform ComReg's final decision. It had always been ComReg's intention to calculate connected premises market share data for a number of time periods, at a minimum for the years 2016 and 2017, in order to conduct a trend analysis. As referred to above, this exercise was beneficial as it highlighted that some major SPs had, in their 2016 data, significantly overestimated their volume of connected premises for reasons which included duplicate records being inadvertently included in the data.¹⁰⁹⁶
- A1.147 ComReg notes BT's request that for clarity and transparency¹⁰⁹⁷, service shares i.e. shares of MI LLs (in addition to Connected Premises shares) should also be calculated on a geographic basis by ComReg, where this was feasible. ComReg consultants, Tera has therefore completed such an analysis for the years 2016 and 2017 as described in the 2019 Tera Report¹⁰⁹⁸. This process was time consuming often requiring manual intervention to resolve addresses. The results have demonstrated the same trends as those produced using the Connected Premises metric for the resultant final SMP and non-SMP markets as defined in the SMP section¹⁰⁹⁹ of this Decision, as shown in Figure 62, Figure 63, Figure 64 and Figure 65.

¹⁰⁹⁶ The comparison of 2016 and 2017 data facilitated considerable cleansing of 2016 connected premises data by SPs following significant engagements with ComReg as detailed in Annex 4 of this Decision.

¹⁰⁹⁷ BT Submission Part 1 Annex Paragraph 64.

¹⁰⁹⁸ Section 4.2 of 2019 Tera Report.

¹⁰⁹⁹ As defined in Section 6, SMP Analysis.

- A1.148 The 2016 and 2017 services shares corroborated the 2016 – 2018 Connected Premises trends and, as such, ComReg considers this to be sufficient evidence that Connected Premises is an appropriate and reasonable metric for assessing competition in the MI WHQA Markets. It is also worth noting that Ofcom used data from one collection period of 2017 in its analysis of service based market share data to support its June 2019 BCMR decision to establish trends. It investigated trends based on ‘circuits’ start contract dates¹¹⁰⁰, though it did inspect the volumes of BT Openreach¹¹⁰¹ orders for the years 2015 to 2017¹¹⁰².
- A1.149 The comparison of the 2016 and 2017 Connected Premises data sets also instigated a rigorous checking of both data sets as the 2017 data demonstrated some major differences between it and the 2016 data on which the analysis in the 2018 Further Consultation was based. Therefore, some SPs were required to retrospectively provide corrected versions of their 2016 data and some SPs were also required to provide a number of iterations of their 2017 data set, as described in Annex 3 which describes the difficulties encountered by ComReg during this process. Because of the issues encountered in obtaining reliable and accurate data for 2016 and 2017, the 2018 data was very carefully scrutinised by ComReg. ComReg is therefore satisfied that the finalised data sets for all years 2016 to 2018 are sufficiently accurate records of the connected premises of all SPs offering or capable of offering MI WHQA services.
- A1.150 Given that the overall national market share trend data was shown to be broadly consistent across all the years from 2013 to 2018¹¹⁰³, ComReg considers that it is reasonable to backwards extrapolate geographic market shares for the years prior to 2016. It is sensible to assume that the geographic distribution of circuits and associated connected buildings for the years 2013 to 2015 would not vary greatly from the succeeding years 2016 to 2018 which were geographically analysed in a detailed and methodological manner. The areas of high concentration for HQA demand such as business parks, commercial and retail districts have not changed significantly since 2013.

¹¹⁰⁰ Ofcom June 2019 BCMR Statement Annex 12, paragraph A12.68.

¹¹⁰¹ BT Openreach is the structurally separated entity of BT U.K. which provides regulated wholesale products for other SPs.

¹¹⁰² Ofcom June 2019 BCMR Statement Annex 12, paragraph A12.19.

¹¹⁰³ *Ibid.*

- A1.151 When the geocoded connected premises for the past 3 years were mapped, the geographic correlation between them was broadly consistent and showed the demand concentrated in commercial areas such as town centres and business and retail parks across the different time periods. It also indicated that, as would be reasonably expected, ANs have been built and expanded into these areas containing the highest concentration of likely demand such as commercial main streets of towns and business, as well as industrial and retail business parks. ComReg's view is that this element of its analysis is sufficiently robust and, in the absence of alternatives, is a reasonable and practical approach when considering potential future demand for MI WHQA services.
- A1.152 ComReg considers that BT's suggestion that ComReg undertake a complex study for every connected premises based on the Annex to the Ofcom 2008 paper as impractical and unfeasible. Even assuming robust data to support such an analysis would be available, it would require leveraging many complicated variables including the number of ANs available at specific distances, whether the premises was pre-ducted by ANs, whether LL services are above or below a 1 Gb/s bandwidths and then grouping connected premises together based on common results to these tests. Firstly, the data made available to ComReg by SPs was, contrary to BT's assertion, not of sufficient quality or detail to facilitate such a study. Indeed BT's own connected premises data for [redacted]
[redacted]
[redacted]
[redacted]]. This issue was not atypical and the data quality and cleansing issues experienced with these are detailed in Annex 3.
- A1.153 Secondly, the list of Connected Premises used by ComReg in its analysis does not contain information on bandwidths. It simply records that the premises is connected with infrastructure that is capable of being used to supply HQA services. It could support a number of customers or provide retail and wholesale LLs to the same customer. The BT suggested weighting of premises by circuits sold also presents a major challenge as this speaks to the issue raised by ComReg regarding the variations in the categorisation of physical and logical circuits by different SPs and is one of the reasons why ComReg is using connected premises as the key metric in the first instance (as explained in detail in Annex 3). This also gives rise to complex issues such as whether or not the weighting should be ascribed to the number of logical or physical circuits, the sum of logical bandwidths or if the weighting should be further modified to reflect instances where more than one customer is serviced in the same premises.

- A1.154 It should be noted that the addresses contained in the leased lines data of each SP does not necessarily match those provided within the Connected Premises list of the same SP. Hence, it was impossible to cross reference these addresses in these respective databases to resolve the bandwidth and service information associated with each connected premises from the service data. BT had mistakenly assumed that such information was available.
- A1.155 Additionally, BT's suggestion to geographically delineate the market by circuit bearer bandwidth does not stand up to scrutiny as this has little bearing on the bandwidth consumed by the end user. A 10 Mb/s Ethernet circuit will generally require the provision of a 1 Gb/s access bearer as would a much larger 950 Mb/s circuit. Furthermore, as detailed in Section 5 of this Decision concerning the definition of the WHQA product markets, the evidence clearly shows that there is no bandwidth break in the MI WHQA markets. The barrier to supply has been overcome if the building is connected and the bandwidth of the access bearer can easily be 'turned up' if required. Hence, a supplier which offers 100 Mb/s service via fibre will also be in a position to provide or bid to supply 1 Gb/s or multiples thereof if the customer requires higher bandwidth services.
- A1.156 A further complication with using bearer bandwidths is inherent with multi-site customers which account for approximately 80%¹¹⁰⁴ of all retail Ethernet lines. A hub or HQ site of a multi-site organisation in many instances only records a single physical Ethernet access bearer. The logical circuits connecting the branches are usually associated with the distant physical bearer connecting the remote or distant branch sites. In this common scenario these remote logical circuits or VPNs¹¹⁰⁵ are pointed towards the HQ which has zero logical bandwidth associated with it in the SP service inventory systems.

¹¹⁰⁴ Section 3, paragraph 3.3.

¹¹⁰⁵ Virtual Private Network connections.

A1.157 Essentially BT's suggested approach could be interpreted as an atomisation of the market to such an extent that every individual premises is effectively treated as a separate market and each is then subjected to an SMP analysis. At best it is treating each of the over 18K Small Areas as a separate markets by performing a HHI analysis of each and grouping accordingly. Though the geographic market definition exercise and SMP analysis are inextricably linked, BT has conflated both to the extent that it has rendered its suggested approach redundant. This contravenes the 2008 BEREC Common Position Guidelines where it states:

*“To assess the homogeneity of competitive conditions across geographic units several criteria can be analysed. The analysis of the homogeneity of competitive conditions will already include some elements of the SMP analysis. However, for means of geographic market definition, the goal is not to investigate the market power of a particular operator (or particular operators), but to make an assessment of significant differences in competitive conditions across geographic areas”.*¹¹⁰⁶

A1.158 Additionally, as detailed in the 2019 Tera Report¹¹⁰⁷, the geocoding of the service shares lists which contained bandwidth information were not sufficiently accurate to precisely locate a premises by X and Y geo-coordinates. They were however, sufficiently accurate for the intended purpose which was to calculate market shares based on the Zone A and B areas. For example, a premises with an address in Co. Monaghan would be ascribed to a SMP designated area (as defined in the ComReg's SMP analysis) without any further analysis required as the entire county was contained in the SMP area. Similarly, a premises with an address which contained “I.F.S.C. Dublin 1” would have been allocated to the non-SMP area count as the Financial Services Centre is solely within the non-SMP area as defined by ComReg's SMP analysis.

¹¹⁰⁶ ERG Common Position on Geographic Aspects of Market Analysis (definition and remedies) Document NO. BoR (14)73 published 5 June 2014, page 21.

¹¹⁰⁷ 2019 Tera Report section 4.2.

A1.159 The Ofcom study referred to by BT is over 10 years old and has been superseded. Ofcom has changed its approach considerably in the intervening period as laid out in its recent June 2019 BCMR decision of its leased lines markets review. Herein, it described how it used a database of locations of business and government sites with 250 or more employees nationally and mobile base stations which were already serviced by a leased line, as a proxy for demand¹¹⁰⁸. It then measured their proximity to alternative networks to define 6 geographic markets¹¹⁰⁹ in the Contemporary Interface¹¹¹⁰ leased lines market in the U.K. It also explained that it did not use leased line address inventory data¹¹¹¹ for this exercise due to quality concerns¹¹¹² surrounding this data. This was despite the widespread and long established use of U.K. postcodes for over fifty years (which have granular geographic significance unlike the Eircode database in Ireland), and are used as the standard unit for geographic analysis across the U.K.

A1.160 A key point is that Ofcom also conducted its analysis based on the presence of a minimum of 2 ANs:

“Where we identify areas with at least two rival infrastructure networks present, we conduct further analysis to determine whether competitive conditions within those areas are homogeneous. We refer to these as High Network Reach (HNR) areas”¹¹¹³.

A1.161 The Ofcom approach to the creation of a current demand proxy was similar to that attempted by ComReg using NACE codes referred to in paragraph A1.125 to A1.128 above. However, suitable information regarding employee numbers was not available to ComReg so this effort was abandoned. The optimal database of HQA geographic information available to ComReg was the Connected Premises database and so this was used in the analysis.

¹¹⁰⁸ *Ibid* Paragraph 5.49.

¹¹⁰⁹ *Ibid* Paragraph 5.3.

¹¹¹⁰ This is equivalent to ComReg’s MI product market definition.

¹¹¹¹ Ofcom BCMR Decision Paragraph 5.48.

¹¹¹² Ofcom BCMR Decision Paragraph 5.48 and Annex 12.

¹¹¹³ *Ibid* Paragraph 5.2.

A.1.5.3 Mapping of SPs' Networks

Introduction

A1.162 This section discusses Respondents' views on ComReg's approach taken to the mapping of SPs' networks and ComReg's assessment of these observations. There were some issues on which Respondents were silent, such as the approach taken to mapping the Virgin Media network and the parsing of the core and local access network. Where it was considered relevant, these are discussed in the Section 5.291 of this Decision concerning the definition of the WHQA markets from a geographic perspective.

Mapping Methodology adopted as set out in the 2018 Further Consultation

A1.163 In paragraphs 4.170 to 4.178 of the 2018 Further Consultation, ComReg explained its approach to its mapping of relevant networks of the thirteen AN SPs (identified in paragraph 4.169 of the 2018 Further Consultation). The issues listed below were identified.

Ubiquity of Eircom's network

A1.164 As stated in paragraph 4.154 of the 2018 Further Consultation, ComReg did not map Eircom's network as it considered its network to be effectively ubiquitous due to the existence of its extensive national duct and pole network.

Mapping of Virgin Media network

A1.165 Furthermore, as stated in paragraph 4.175 of the 2018 Further Consultation, polygons were used to represent the footprint of the Virgin Media network rather than actual route details as were used for other ANs.

Twenty metre network width

A1.166 ComReg also described in paragraph 4.172 of the 2018 Further Consultation how the relevant SPs' networks were mapped, and how a network width or "thickness" of 20 metres was ascribed to each in order to counteract the variations in accuracy of the various network maps supplied to it by SPs which were requested via SIRs.

Core and local access network

A1.167 In paragraph 4.173 of the 2018 Further Consultation ComReg also explained how core network was distinguished from local access networks on the basis that it was not available for the connection of customers. This was where significant portions of networks are effectively quarantined from usage for connecting customers. Examples are where fibre was routed adjacent to high pressure gas networks, along high-tension electricity distribution pylons or alongside railway tracks. Importantly though, such core networks were included in the analysis of competitiveness of backhaul/intercity services and its impact on downstream competition within metropolitan or local areas for terminating segments of MI WHQA LLs.

Treatment of publicly owned MANS

A1.168 The publicly own MANs were identified as being treated differently to other networks¹¹¹⁴ in the analysis set out in the 2018 Further Consultation. Some of the MANs, referred to as CMANs (Competitive MANs) were treated as being equivalent to two privately owned networks. These were defined as such if there was competitive backhaul available to the MAN which allowed it to behave in a fully independent commercial manner from any available backhaul supplier. There were 51 towns or cities with CMANs of the total of 96 towns/cities covered by the 88 MANs. The remaining publicly owned MANs were referred to as UMANs (Uncompetitive MANs).

Respondents' views on Mapping of Networks

A1.169 ALTO, BT, Eircom, Vodafone and Zayo commented on various aspects on the treatment by ComReg of SPs' network mapping information. These are detailed below.

Ubiquity of Eircom network

A1.170 Eircom were of the view that ComReg erred in its analysis by assuming that its network was ubiquitous¹¹¹⁵. It considered that ComReg should have mapped its network in the same manner as it had for the ANs and was therefore, prejudging the outcome of its analysis.

¹¹¹⁴ See Paragraph 4.155 of the 2018 Further Consultation.

¹¹¹⁵ Eircom Submission paragraph 34.

Twenty metre network width

- A1.171 Vodafone referred to a possible “wobble”¹¹¹⁶ effect due to the adoption of a 20 metre network thickness being assigned to each network. It explained that this effect was a potential source for the introduction of measurement errors due to the possible variance of actual routing of networks within the proposed 20 metre “corridor”. A network could be physically routed on the eastern side of a carriageway while the mapping distance could have been taken from the western side. This may have caused actual distances of up to 120 metres to be incorrectly measured as 100 metres in the algorithm.
- A1.172 Zayo offered the same opinion¹¹¹⁷ and referred to BT’s query (No. 9B)¹¹¹⁸ on this issue to which ComReg has responded in the Clarifications Document.
- A1.173 BT also made this point. It added that this extra 20 metres network thickness factor when taken into account with the “radial” effect referred to above, could if using its multiplier factor¹¹¹⁹, increase the dig distance for a 100 metre radial connection up to circa 180 metres actual dig distance¹¹²⁰.

¹¹¹⁶ Vodafone Submission page 6.

¹¹¹⁷ Zayo Submission page 10.

¹¹¹⁸ Response to BT Issue No. 9B Information Notice, Response to Requests for Clarifications on Document 18/28, ComReg Document No.18/28 published 13 April 2018.

¹¹¹⁹ BT used this to calculate actual dig distances versus radial distances based on its excavation records. Submission Annex paragraph 158.

¹¹²⁰ *Ibid* Paragraph 159.

Publicly owned MANs

- A1.174 ALTO¹¹²¹, Vodafone¹¹²² and BT¹¹²³ considered that ComReg's treatment of some of the relevant publicly owned MAN networks as being equivalent to two privately owned networks was incorrect and instead, such infrastructure should have been treated in a similar manner as all other networks. BT cited an apparent discrepancy between the criteria used by ComReg in the 2018 Tera Report and the main body of the 2018 Further Consultation¹¹²⁴ which were used to identify "CMANs". BT referred to the description used in the 2018 Tera Report¹¹²⁵ where it was stated that any MAN where competitive backhaul was *available* to it, irrespective of whether or not any SP had actually taken service on it was a CMAN. It claimed that this was in conflict with the reference in the 2018 Further Consultation¹¹²⁶ which referred to CMANs as those with competitive backhaul where a SP had taken MI WHQA services on the MAN.
- A1.175 BT compared the publicly owned MANs and their treatment by ComReg to that by Ofcom of Cityfibre¹¹²⁷ in the U.K. Cityfibre was treated as a single SP even though "it had been argued" that as its dark fibre offering was open to all other SPs, it should have been allocated a higher weighted value than other SPs in terms of its impact on competition for MI WHQA services.

¹¹²¹ ALTO Submission pages 2, 4 & 5.

¹¹²² Vodafone Submission, page 8.

¹¹²³ BT Submission Part 2, paragraph 121.

¹¹²⁴ See paragraphs 4.97, 4.155 and 4.178 of the 2018 Further Consultation.

¹¹²⁵ 2018 Tera Report page 8.

¹¹²⁶ *Ibid.*

¹¹²⁷ BT Submission Part 1, Annex A, paragraph 105.

Smaller SPs, Interconnection and multiple supplier issue

- A1.176 BT named some SPs whose networks were mapped and incorporated into the analysis as not being active in the WHQA markets and others, it claimed, that do not offer any retail LL services. In its view, these SPs should, not have been included in the analysis. It also suggested that ANs which, in its view, have very little presence in, or share of the market should be excluded from the analysis or given a lesser weighting to other SPs which are active in the various HQA markets. It considered that the T50 telecoms infrastructure in the Dublin area should be removed from the analysis¹¹²⁸ as it was used almost exclusively by international operators who it maintains were inactive in the domestic market. It also claimed that it was equally as difficult for ANs to interconnect and supply to each other as it was for them to connect to end user premises and that this was a high barrier to conducting business with each other¹¹²⁹.
- A1.177 Vodafone referred to its “anecdotal experience”¹¹³⁰ of at least 1 unnamed vertically integrated SP having refused access to an access seeker which sought to obtain WHQA services from it. It added that due to no single AN having more than 40% geographical coverage nationally, that this imposed a costly overhead on AN SPs when having to manage multiple suppliers to ensure that connectivity to all retail multi-site customers can be achieved.

ComReg’s Assessment of Respondents’ views on Mapping of Networks

Ubiquity of Eircom network

- A1.178 ComReg disagrees with Eircom’s view that it has prejudged the outcome of its analysis in that it has automatically designated Eircom with SMP because of the presumption of the ubiquity of its network. ComReg has also taken into account the location of AN infrastructure and demand side considerations, including with the location of all SPs’ Connected Premises in its analysis.

¹¹²⁸ See BT Submission Part 1 paragraph 127.

¹¹²⁹ See BT Submission Part 1 paragraph 124.

¹¹³⁰ See Vodafone Submission page 9.

- A1.179 ComReg maintains that due to the current scope and scale of Eircom's national duct and pole network, in addition to its existing (and expected) fibre rollout to support its NGA FTTx network, it is reasonable and proportionate to assume that its footprint for MI WHQA services is effectively national in scope. In practice, it can reach almost any location requiring a leased line within a reasonable timeframe and its ability to extending the reach of its MI LL products are, in many cases, likely to be lower in comparison to some AN SPs. A detailed analysis of the barriers to entry and expansion in the HQA markets is laid out in the SMP analysis in Section 6 of this Decision. Eircom also has announced plans to rollout fibre to pass 1.8M or 84%¹¹³¹ of total premises nationally as part of its expanded FTTH rollout which means that it will extend the reach of its fibre network still further into its access network during the period of this market review.
- A1.180 ComReg notes that the detailed SMP analysis undertaken in this Decision does not depend on the presence of networks alone. Network presence is not the sole consideration when delineating geographic markets and is not the single criterion upon which ComReg has formed its final decision. The measurement of current demand is also a consideration as are other important non-geographic considerations, such as barriers to entry and expansion, size and scope etc. These are laid out in detail in the SMP analysis in Section 6 of this Decision. Hence, ownership of a large network does not automatically confer SMP on a SP and network presence is not the sole determinate in calculating the relative degree of market power of any SP. A key criterion for the geographic market assessment taken into account within the 2019 Tera Algorithm¹¹³² is current demand and its proximity or otherwise, to competing networks.

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https://www.eir.ie/opencms/export/sites/default/.content/pdf/IR/presentations/2018_2019/quarter3/eir_Q3_FY19_results_presentation.pdf

¹¹³² It should be noted that the updated 2019 Tera Algorithm does not include any potential demand as was used in the previous 2018 Tera Algorithm in the analysis of the 2018 Further Consultation. This is explained in detail in Section A.1.5.2 above.

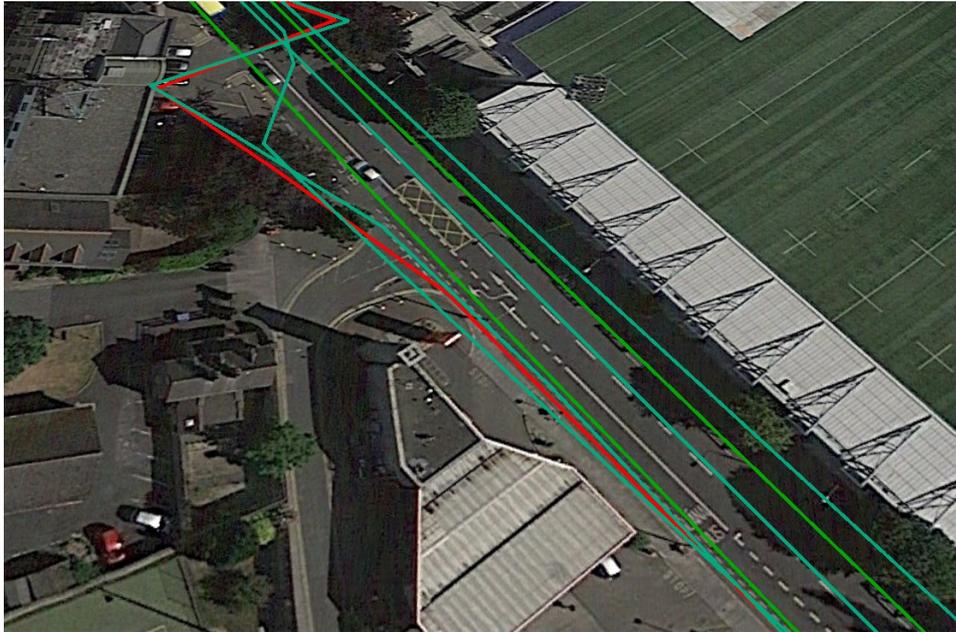
Twenty metre network width

- A1.181 ComReg considers that the 20 metre thickness allocated to networks remains valid. It is not feasible for ComReg or relevant SPs to refine the network maps to a greater level of accuracy in a reasonable timeframe, if at all. The difference in accuracy of various network maps is demonstrated in Figure 75 below. The networks are shown to be routed separately and distinctly in different parts of the carriageway. In reality, the networks shown in this map actually share the same trench along the roadway or if routed apart, are in a separate portion of the carriageway, as is usual for ANs in urban areas and was confirmed by a visual inspection by ComReg of the infrastructure in this area. Each network may breakout into individual inspection chambers along the route, but essentially share the same general route following the roadway.
- A1.182 There may also be variations between the recorded mapping information and the actual routes taken due to the necessity to avoid other services and obstructions¹¹³³ in the congested underground space. Additionally, SPs also use different mapping projection standards and levels of accuracy to display their network routes and therefore, they may appear in different locations on the maps provided to ComReg rather than where they are actually routed.
- A1.183 This allocation of a 20 metre thickness was designed by ComReg to take into account minor differences in the accuracy of various SPs' network maps as explained in the 2018 Further Consultation in paragraph 4.172. However, ComReg appreciates that this 20 metres can impact on the "Distance Criterion". This will be discussed further and dealt with in the respective "distance criteria" section in detail, below¹¹³⁴.

¹¹³³ Gas, water, electricity, sewerage systems, wastewater, traffic management and public lighting plant and gullies, culverts, basements, underground rivers and streams and other telecommunications services.

¹¹³⁴ See Section A.1.5.5 below.

Figure 75: SPs' network mapping variations



Publicly owned MANs

- A1.184 ComReg's previous position in the 2018 Further Consultation concerning the treatment of the publicly owned MANs, in particular the "CMANs"¹¹³⁵ was to treat this as being equivalent to two ANs. However, three respondents, ALTO, BT and Verizon all raised issues with treatment of the publicly owned MANs in this manner because the Managed Service Entity ('MSE') that has the concession to run these MANs is now a vertically integrated SP, that is under common ownership with Airspeed and ETNL that also controls private assets and is active at both the retail as well as the wholesale level in the provision of MI WHQA services and products.
- A1.185 Given enet's MANs are effectively under common ownership – with group companies active at both the retail as well as the wholesale level in the provision of MI WHQA services – ComReg has decided to treat the assets under the control of enet – both public and private – in the similar fashion to the assets under the control of other vertically integrated SPs, i.e. ComReg treats enet's MAN assets as one network.¹¹³⁶

¹¹³⁵ Where CMAN refers to publicly owned MANs with two or more independent sources of backhaul.

¹¹³⁶ ComReg notes that the DCCAE published a report¹¹³⁶ it had commissioned from the Analysys Mason Group ('AMG') on 13 February 2019 on pricing and access arrangements for the MANs, referred to as the "DCCAE AMG Report". Furthermore, DCCAE has requested that ComReg report on the implementation of this review. For more information see <https://www.dccae.gov.ie/en-ie/news-and-media/press-releases/Pages/Minister-Bruton-Refers-Review-of-Pricing-and-Access-Arrangements-for-MANs-to-Comreg.aspx>.

- A1.186 ComReg has conducted a detailed sensitivity analysis and compared the difference between the final outputs when enet's CMANs are considered as 1 and then 2 ANs. The difference between each is insignificant in the overall context of the MI WHQA Markets and the volume of WPZs having changed designation was found to be only 338. This resulted in an insignificant difference between Eircom's 2018 market shares (based on Connected Premises) across the relevant MI WHQA Markets. In the Zone markets, Eircom's market share reduced by 0.4% points and in Zone B it reduced by 4.3% points
- A1.187 For the reasons set out above, ComReg has decided treat the CMANs as being equivalent to 1 AN in its analysis.

Smaller SPs, Interconnection and multiple supplier issues

- A1.188 ComReg has checked that all the AN SPs included in its analysis are active in the relevant WHQA markets. These ANs include some new entrants and although some have limited network footprints, they connect major business parks and commercial areas and have therefore been included in the analysis. Ofcom made a similar observation in its June 2019 BCMR statement where it considered that smaller SPs should not be excluded from the analysis of geographic market considerations:

*“Leased lines operators with a relatively small footprint (e.g. Colt) have had success and it would be inappropriate to exclude them from the analysis”.*¹¹³⁷

- A1.189 Some ANs may concentrate their efforts on the retail market. However, unlike other telecommunications markets, there low barriers to such SPs switching supply from the retail into the wholesale market. As the underlying managed service product consumed in each market are identical and indistinguishable, ComReg does not consider it appropriate to exclude them from the market.
- A1.190 The data gathered by ComReg via SIRs and in meetings with SPs demonstrated that the MI WHQA merchant market is mature with multiple SPs dealing with each other in simultaneous vendor and customer relationships. The data obtained under statutory powers shows there are 13 SPs supplying in the MI WHQA merchant market. ComReg cannot therefore place much weight on the “anecdotal experience” cited by Vodafone of an unnamed LL SP refusing to supply services in the MI WHQA Markets.

¹¹³⁷ Ofcom June 2019 BCMR Statement FN 306.

- A1.191 The data (including mapping and circuit details) provided to ComReg by AN SPs such as [REDACTED] in response to SIRs (claimed by [REDACTED] as not being active in the MI HQA markets) clearly demonstrates that they are operating in either or both of the retail and wholesale markets and should therefore, be included in ComReg's analysis. ComReg has also engaged in direct discussions with [REDACTED], referred to by [REDACTED] a "niche" SP¹¹³⁸ only operating the international space. It has confirmed that it is investing in its Irish network and that it is "open for business" including providing services at the wholesale level. Both of these SPs referred to above also describe wholesale solutions on their websites.
- A1.192 [REDACTED] claimed that its approach to [REDACTED] to provide a connection to [REDACTED] was rejected and that no other SP is nearby. However, the mapping information provided by SPs to ComReg clearly shows that there are 6 ANs very close by, one of which is [REDACTED] which already provides connectivity to [REDACTED]. ComReg also conducted a visual inspection of this area and were able to identify the chambers of ANs close to this exchange. ComReg therefore disagrees with BT on this point.
- A1.193 Additionally, SPs with smaller networks which may concentrate on international business cannot be discounted for this reason alone. Many non-national¹¹³⁹ and internationally operating Irish companies¹¹⁴⁰ active in Ireland may chose global operators with significant international footprints to fulfil their international connectivity requirements. The argument for removing SPs such as [REDACTED] (and thereby, their connected customers) from the analysis is unconvincing. The data obtained from SIRs shows that many international companies have substantial national MI WHQA requirements and to remove this demand (and consequent supply which may be provided by smaller international niche players) from the overall analysis would be incorrect because this supply and purchases are still within the observed HQA markets and therefore cannot be excluded from the analysis. Many international operators such as [REDACTED] are also significant purchasers of leased lines services within Ireland. Therefore, these equally cannot be discounted from the analysis as their purchases are also within the observed WHQA markets.

¹¹³⁸ [REDACTED].

¹¹³⁹ The data gathered via SIRs showed that many U.S. companies choose global suppliers such as [REDACTED] to provide their international WANs.

¹¹⁴⁰ [REDACTED] confirmed in interviews that their choice of main telecommunication's provider was based on their international rather than national requirements.

- A1.194 Finally, these smaller SPs' network are largely concentrated in the Greater Dublin area, usually where other SPs are already established and where competition may be expected to be more intense. There are multiple SPs, each with control of independent network infrastructure connecting the major business parks and significant commercial areas in the Dublin region. As noted in paragraph A1.188 above, Ofcom took a similar approach and it included all relevant SPs in its analysis. ComReg considers that it would have seriously erred in its assessment of the level of competition, particularly in the Dublin area to have removed these smaller networks based purely on their size.
- A1.195 Relative to establishing connectivity with an end-user, it is also easier for SPs to deliver service to one another via interconnectivity at the many data centres located in the Greater Dublin area (at which many relevant SPs networks overlap), despite BT's assertion that interconnection requirements constitutes a barrier to purchasing wholesale services from different suppliers. The data provided by SPs in response to ComReg's SIRs has consistently shown that many SPs are already interconnected with each other over a long period, which demonstrates the existence of mature and well developed interconnection regimes for these WHQA services. Additionally, the circuit data and mapping information obtained via SIRs clearly demonstrates that many SPs are actually present in [redacted]. Table 9 in Section 5 of this Decision (within the discussion on the WHQA product market definition) clearly shows the broad range of the buyer and seller relationships between SPs in the MI WHQA market.
- A1.196 Additionally, [redacted] data provided in response to ComReg's SIR for the period 2018 shows that it is selling MI WHQA services to [redacted]¹¹⁴¹ authorised SPs, the majority of which require an interconnection at which to handover these services, while [redacted] provides MI services to over 100 wholesale customers. While a considerable proportion of such wholesale customers are international operators with no infrastructure in Ireland, the majority still require a handover services or interconnect at their PoPs in Ireland (usually situated within a data centre) in order to effect delivery of the WHQA service. ComReg is therefore satisfied that such interconnects can be established at relatively low cost and effort.

¹¹⁴¹ More than 20.

- A1.197 ComReg also does not accept Vodafone's claim that the overhead of managing multiple suppliers is overly challenging for SPs. Vodafone's own data provided to ComReg in response to SIRs shows that it has established interconnection with over [§< ██████████]. As noted in Section 3¹¹⁴² of this Decision concerning retail trends and developments, ComReg accepts that retail purchasers of retail LL services generally use a sole supplier as they require turn-key solutions. However, this does not hold for the WHQA merchant market.
- A1.198 Furthermore, based on information garnered via SIR responses and in meetings with various international SPs¹¹⁴³, ComReg understands that some SPs which have complained of being forced into a critical dependency on Eircom's WHQA services do not appear to have instigated explorations for alternate suppliers. In a meeting with ComReg in June 2018, [§< ██████████] confirmed that it had not made an approach to [§< ██████████] seeking discussions to scope out a more extensive commercial offering for delivery of WHQA services. ComReg also considers that [§< ██████████] citing of the contents of [§< ██████████] website as unconvincing evidence of lack of opportunity to develop alternative supplier contacts in the WHQA market. [§< ██████████] also claimed that it did not use [§< ██████████] for any WHQA services however, this was contradicted by sales and purchase data provided in response to SIRs showing that circuits have in fact been supplied by [§< ██████████ ██████████ ██████████] in the Dublin area . Similarly, the same data showed that [§< ██████████] supplied many large bandwidth circuits to regional towns and cities for [§< ██████████].

¹¹⁴² See paragraph 1.46 of this Decision.

¹¹⁴³ [§< ██████████] and [§< ██████████].

A.1.5.4 Choice of Geographic Unit

A1.199 This section discusses Respondents' views on the choice in the 2018 Further Consultation of SAs as the geographic unit to be used in the assessment of the geographic scope of the MI WHQA Markets. It lays out ComReg's response to the issues raised by Respondents and importantly, details its reasoning which has now led it to change its choice of geographic unit Workplace Zones ('**WPZ(s)**')¹¹⁴⁴, with WPZs now adopted as the geographic unit used in the analysis in this Decision.

A1.200 5 of the 7 Respondents, (BT, Verizon, Vodafone, enet and Eircom) commented on this issue.

ComReg's Preliminary View in the 2018 Further Consultation regarding Geographic Unit

A1.201 ComReg described its reasoning for choosing the SA as the base geographic unit for its analysis in paragraphs 4.139 to 4.165 in the 2018 Further Consultation. Therein, ComReg discussed its consideration of other possible alternatives and why these were rejected as being unsuitable while in its opinion, the SA met the necessary requirements for a geographic unit to be used in a geographic market assessment as laid out in the Explanatory Note to the 2014 Recommendation¹¹⁴⁵. Although the issues raised by Respondents were in regard to SAs, they can in some cases equally apply to WPZs.

¹¹⁴⁴ WPZs are an administrative unit created by Ireland's Central Statistics Office ('**CSO**') and are designed to capture 'daytime population' of areas. The daytime population includes everybody who indicated they worked or studied in the area, along with persons in that area who do not work or study (and so are there during the day). There are 7,219 WPZs in Ireland. Further details on the CSO construct of WPZs are available [HERE](#).

¹¹⁴⁵ 2018 Further Consultation, paragraph 4.141.

Respondents' Views on Geographic Unit Choice

Suitability of the geographic unit

A1.202 Vodafone¹¹⁴⁶, Verizon¹¹⁴⁷ and Eircom¹¹⁴⁸ stated in their Submissions that ComReg's choice of SA as geographic unit for use in its analysis was inappropriate as it was too small and granular. BT stated that the choice of SA had merit but that the supporting economic analysis around it was flawed resulting in the proposed deregulation being overstated¹¹⁴⁹. It further stated that it understood¹¹⁵⁰ the choice of SA but considered that it should be augmented with a complex assessment¹¹⁵¹ of each individual premises as outlined in paragraph A1.140 above. enet¹¹⁵² considered that a more detailed building by building analysis was required while Zayo and ALTO did not express any direct opinion on the matter though Zayo commented on the Zone A and B delineation in regard to bandwidth considerations.

¹¹⁴⁶ Vodafone Submission, page 4.

¹¹⁴⁷ Verizon Submission, paragraph 12.

¹¹⁴⁸ Eircom Submission, paragraph 31.

¹¹⁴⁹ BT Submission Part 1, page 1.

¹¹⁵⁰ BT Submission Part 2, paragraph 117.

¹¹⁵¹ BT Submission Part 2, pages 23 to 28.

¹¹⁵² enet Submission, page 9.

- A1.203 BT agreed¹¹⁵³ with a geographical split of the MI WHQA market into two separate markets but contended that ComReg erred in its analysis in that the Zone A should be far smaller than that laid out in the 2018 Further Consultation. It considered that a deeper review of the assumptions and criteria used in the geographic assessment was required, such as those relating to network thickness and distance criterion before only then considering any proposed geographic split. BT provided a detailed response in support of its position¹¹⁵⁴. It suggested, as set out in paragraphs A1.138 to A1.141 above that connected buildings be assessed on an individual basis and then grouped together based on similar conditions of supply i.e. distances from number of ANs, separated for service above and below 1Gb; a weighting for the number of circuits supplied at each premises; number of ANs available and whether or not buildings were pre-ducted. It called for this further analysis to be undertaken based on Annex 6 of Ofcom's June 2008 BCMR review¹¹⁵⁵. Its detailed proposal is laid out in its Submission¹¹⁵⁶.
- A1.204 enet agreed that separate MI WHQA sub-national markets exist but disagreed with the delineation of Zone A and B areas and the choice of Small Area as the geographic unit. It suggested that even greater geographic granularity was required and that the analysis should be assessed on a building-by-building basis. It added that the topography of each SA should also be analysed.
- A1.205 Verizon considered that SAs were too granular and pointed to examples where opposite sides of the same street could be in different zones (Zone A or Zone B), though it did not disagree that different geographic markets existed. It stated that ComReg's approach caused practical difficulty in the operation of the market and suggested that it provided the opportunity for Eircom to game information as it claimed that Eircom could exercise some control over the mapping information. It suggested larger geographic units such as a "Dublin ring" and pointed towards the use of postcode areas by Ofcom in its 2016 BCMR review.

¹¹⁵³ BT Submission Part 1, page 1.

¹¹⁵⁴ BT Submission Part 2 pages 23 to 28.

¹¹⁵⁵ https://www.ofcom.org.uk/data/assets/pdf_file/0016/50425/consultation.pdf

¹¹⁵⁶ BT Submission Part 2 pages 23 to 28.

- A1.206 Vodafone suggested that the SA required definition as it claimed that ComReg had not done so. Its view was that the SA was too small a geographic unit to use in ComReg's assessment and it recommended using Eircom Exchange Areas as the basic unit as Vodafone had built a national VUA¹¹⁵⁷ backhaul network and associated interconnection system with Eircom using Eircom WEILs¹¹⁵⁸, which was based on exchanges. It also stated that as Eircom's MI WHQA pricing regime is based on NGN exchanges, splitting the exchange areas between Zone A and B SAs would further complicate the pricing and operation of Eircom's regulated MI WHQA product.
- A1.207 Zayo indicated that the geographic split of the MI WHQA market into the Zone A and Zone B areas was a substantial improvement on the original 2016 Consultation proposals (where ComReg had identified a single national market) but that there should be a further split in the product market definition based on bandwidth (this issue is discussed in detail the assessment of the product market definition in Section 5¹¹⁵⁹ of this Decision).

¹¹⁵⁷ Eircom's regulated NGA bitstream offer "Virtual Unbundled Access" as described at www.openeir.ie.

¹¹⁵⁸ Wholesale Ethernet Interconnection Links. Eircom's NGN Ethernet interconnection product, as described at www.openeir.ie .

¹¹⁵⁹ See paragraph 5.95 of the Product Market Definition in Section 5 of this Decision.

A1.208 Eircom disagreed with ComReg's proposal. It considered that SAs were an inappropriate unit for any geographic analysis of "business connectivity market"¹¹⁶⁰ given they are based on residential premises. It stated that SAs were too granular and would cause fragmentation of the market due to the non-contiguous nature of the SAs that made up Zone A and Zone B and that the use of SAs would lead to "micro-analysis"¹¹⁶¹ of the market. It offered examples in other European jurisdictions where the chosen geographical units were far larger, namely Portugal: 3,092 civil districts; U.K.: postal code sectors which are 20 or 30 times larger than SAs; Finland: 89 municipalities; Austria, 2,350 communes; and France, which also uses much larger units¹¹⁶². Eircom also claimed that ComReg had not considered any other alternative to SAs in its deliberations¹¹⁶³.

Longevity of geographic unit and Zone A and B output map

A1.209 Eircom¹¹⁶⁴ considered that the SA used in the analysis were created in 2011 and were therefore, already obsolete. It added that as ComReg envisaged updating the Zone A and B output map using 2016 CSO data for its final decision, it would not be afforded an opportunity to review any final map produced by ComReg. Additionally, it called on ComReg to undertake an annual review of the Zone A and B output map as is done in France for its equivalent regulatory zonal maps which also apply to market 4.

A1.210 Vodafone also noted that ComReg did not specify any review procedure for updating the output Zone A and B map on an ongoing basis.

¹¹⁶⁰ Eircom Submission page 5.

¹¹⁶¹ *Ibid* page 4.

¹¹⁶² *Ibid* paragraph 31.

¹¹⁶³ *Ibid* paragraph 151.

¹¹⁶⁴ Eircom Submission paragraphs 32 & 33.

ComReg's Assessment of Respondents' Views on Geographic Unit Choice

Suitability of the geographic unit

- A1.211 Having regard to the majority of Respondents' views where they considered that SA were too small and granular to be used as the basic geographic unit in the analysis¹¹⁶⁵, ComReg has decided to change the geographic unit from SA to Workplace Zone ('**WPZ(s)**')¹¹⁶⁶ for two important reasons. Firstly, this unit was specifically designed by the Central Statistics Office to assist in analyses of business markets. Importantly though, WPZ units remain intrinsically related to the CSO's SA geographic units (on which the 2018 Further Consultation was based). WPZs are designed to reflect the areas where people spend their day rather than where they live. Hence, they more accurately reflect business activity and the concentrations of businesses rather than population density. Secondly, there are also considerably less WPZs relative to SAs, 7,219 compared to 18,641. For instance, significant and large business parks such as Citywest and Clonshaugh in Dublin have no residents living within them but are hubs of business activity. Contrarily, residential suburbs such as Beaumont in Cork City have a large residential population where the businesses serving the local population are unlikely to require MI WHQA services. ComReg considers that for these key reasons, WPZs are better suited for use in geographic analyses of business oriented markets such as the MI HQA Markets.
- A1.212 This decision was based on the thorough interrogation of the observations registered by Respondents. A detailed discussion of these observations and the logic for this adjustment, is laid out below. It is important to note that many of the points made by Respondents in regard to SAs apply equally to WPZs e.g. the dividing of each side of a street into separate geographical units. For the sake of efficiency, the discussion below and ComReg's replies to issues raised by Respondents should be assumed to apply equally to WPZs as to SAs unless specifically stated to the contrary where issues are unique to SAs.

¹¹⁶⁵ See paragraph A1.202 above.

¹¹⁶⁶ <https://www.cso.ie/en/census/census2016reports/workplacezonesand1kmpopulationgrids/>

- A1.213 The choice of WPZ as a candidate geographic unit was not available to ComReg and its consultants in advance of the 2018 Further Consultation. The creation of WPZs was the result of a CSO initiative to enhance the SA unit to assist with analyses for studies involving business and work. They are a function of SAs based on the analysis of data assembled from 2016 Census information gathered from census respondents on where people spent the majority of their day i.e. where they worked or studied. As explained on the CSO's website, this initiative was instigated in response to demands of various stakeholders and in response to the suboptimal boundary of SAs in satisfying these requirements, such as the growing demand for data relating to workers and daytime statistics nationally and internationally for such purposes as planning future transport requirements and emergency planning.
- A1.214 The general criteria (there are others listed on its website) for defining a WPZ is clearly described on the CSO website¹¹⁶⁷. A WPZ must:
- (a) contain between 100 to 400 workers;
 - (b) have at least three workplaces;
 - (c) lie within county boundaries; and
 - (d) have a maximum limit of 90% of employees within it belonging to one organisation.
- A1.215 The relationship between WPZs and SAs is demonstrated in the following figures and tables. Figure 76 below shows the boundary of SA No. 268141003 which is a SA in south central Dublin. It contains 17 WPZs listed in Table 17
- A1.216 Conversely, Figure 77 shows WPZ No. SD0407, in a residential area, Kimmage in Dublin, which contains 5 SAs as listed in Table 18. These clearly demonstrate the relationship between WPZs and SAs. In areas of intense commercial activity with high concentrations of businesses and employees, but low population density, WPZs are small. Whereas, in areas having low businesses and employment densities WPZs are much larger despite having high population densities.

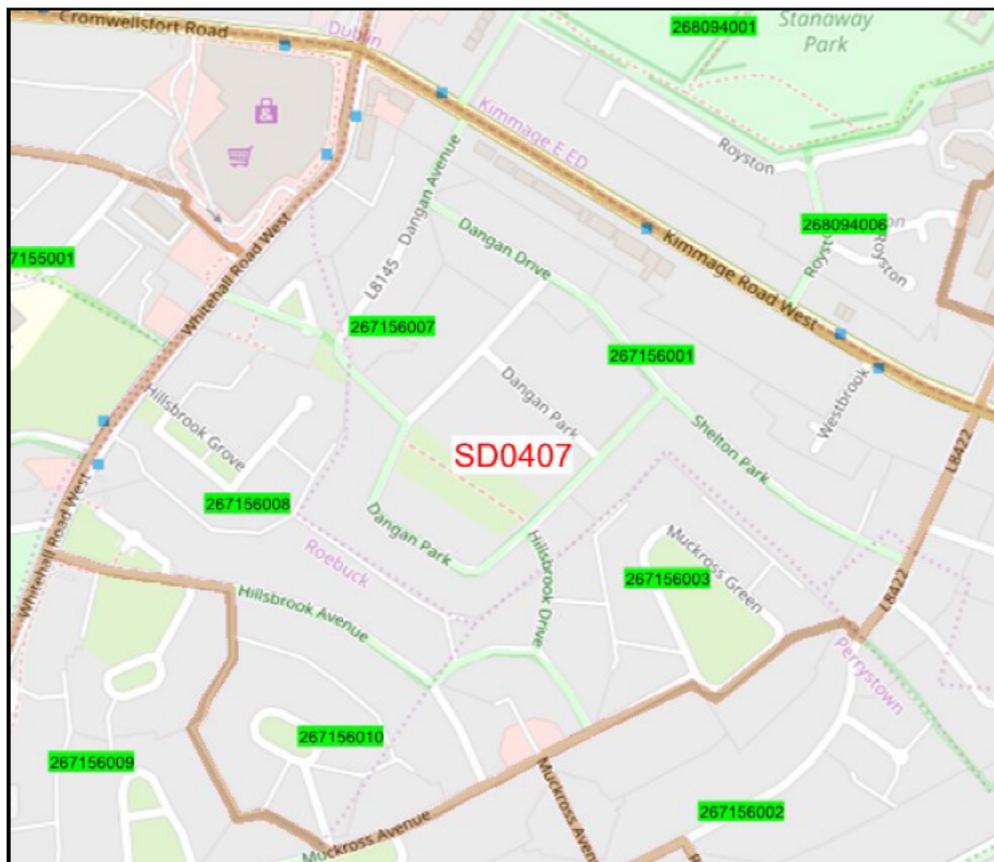
¹¹⁶⁷ *Ibid.*

Table 17: List of WPZs in SA No. 268141003

Lookup: Workplace Zone to Small Area						
County	County Name	Workplace Zone	WORKPLACE_ZONE_GUID	Notes	Status	SMALL_AREA_1
DC	Dublin City	DC0872	3885fc75-1e40-4416-b386-dd062103b07a	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0874	f07a093e-5739-4347-b311-3273402d10fe	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0875	972ad29e-7cdd-4a8a-bcb9-6a3081117343	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0876	6df6f512-9cb1-4a0c-b357-8e11bb7f8801	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0878	e6663981-56ef-4f10-8cd3-4ea5fb13392a	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0879	8ac74c93-074c-4caa-9242-f92128d5dc29	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0880	f5438a23-68e1-4525-bab1-2699d1e71179	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0881	34676a4a-f63c-478f-86f6-eb171603c25	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0882	eaff8f0f-b6f2-4859-9a94-adf21f754b65	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0883	e11e261d-cb5f-4e58-93d8-4c9db5a60890	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0884	97786773-6c3e-4084-97c4-5cdd8847c8ee	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0885	aba15f0f-104f-4cf3-a9e0-91256b501a70	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0886	a84f900e-2903-4fe8-9fc3-dca886b3562f	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0887	8745b697-a317-481c-9d63-a284c0c82914	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0888	5a4f66c9-72b3-4729-b291-cfe86d9a272e	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0889	22f2183f-87c0-4ef8-b08c-f367e857990a	SA split into 17 WPZs	Split	268141003
DC	Dublin City	DC0890	1292fd9-2f69-4fda-9f00-98f0cb22ce6d	SA split into 17 WPZs	Split	268141003

Source: CSO

Figure 77: WPZ SD0407 Kimmage, Dublin



Source: CSO; contains 5 SAs

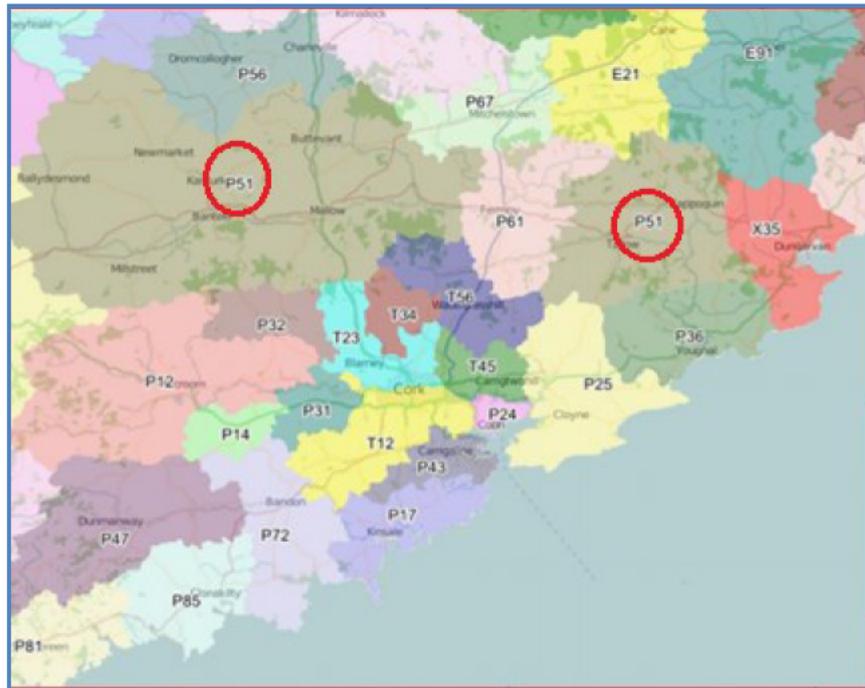
Table 18 List of SAs in WPZ SD0407

Workplace Zone SD0407	
Small Areas	
267156001	
267156003	
267156007	
267156008	
267156010	

Source: CSO

- A1.217 In ComReg's view, the alternative geographic units suggested by some Respondents were not viable and could not be reasonably deemed to satisfy the necessary requirements as set out in the 2018 Further Consultation and referred to above in paragraph A1.201. For instance, Verizon's proposal for a "Dublin Zone" was based on unspecified criteria and ignored the remainder of the country, whereas ComReg has observed geographic variations in conditions of competition outside the Dublin area. Also, the comparison to U.K. post code sectors or areas cited by Verizon is not applicable in the Irish context due to the randomised and non-contiguous nature of a significant portion of the Eircode structure. Only the first three alphanumeric characters of Eircode's addressing scheme has a geographical significance, which are based on Eircode routing keys. These routing keys designate the large geographic area which contains the premises which is represented by the 4 remaining alphanumeric characters.
- A1.218 As shown in Figure 78 below, these Eircode routing code areas cut across county boundaries and more importantly, are extremely large and therefore, unsuitable for ComReg's purpose of defining geographic markets. Additionally, some are split into separate non-contiguous areas which do not touch. This is further illustrated in Figure 78 by routing code area(s) P51 (circled) which is bisected by area P61 and contains towns' considerable distances from each other and in different counties: Cappaquin Co. Waterford; Buttevant Co. Cork; and Rathmore Co. Kerry.

Figure 78: Examples of Eircode Routing Code Areas



Source: autoaddress.ie

- A1.219 Similarly, the adoption of Eircom Exchange Areas as the unit, as suggested by Vodafone, would not be as independent or as transparent as WPZ/SAs in the particular circumstances of the WHQA markets. These units are designed independently and only change every 5 years following a census. However, Exchange Areas may be subject to change initiated by Eircom, albeit that such changes may be incremental and communicated to the wider industry, but over a longer time period the cumulative effect could be significant (and in accordance with its regulatory obligations). In addition, Exchange Areas can be geographically large and therefore, much less likely the conditions for competition will be homogenous within them. More importantly, ANs' fibre footprints are not based upon the current locations of Eircom's exchanges whose network was designed around the distance limitation of the traditional copper based PSTN service.

- A1.221 AN's network maps clearly show that they are generally targeted at business and commercial areas and because of the greater distances between customer and node facilitated by fibre optic technologies, do not in any manner overlay or replicate the topology of Eircom's network. Furthermore, it is possible, particularly in light of Eircom's recent announcement to accelerate its deployment of FTTH in urban areas¹¹⁶⁹ that its future network arrangements could be substantially changed to it from those that exist currently. The fibre routes associated with its "300K" FTTH rollout in rural areas are not necessarily constrained by the boundaries of traditional exchange areas. In contrast, WZPs are created independently and agnostic to network modifications or plans of any individual SP.
- A1.222 This point was made by Ofcom in a similar context in its December 2018 consultation on its approach to geographic markets and fibre investment¹¹⁷⁰. It stated that BT may rationalise its network from its current circa 5,600 copper based exchange areas to about 1,100 fibre based exchange areas and so the current exchange area demarcations may become less relevant over time. The alternative it offered was using U.K. "postcode sector"¹¹⁷¹ areas of which there are approximately 10,000. In contrast to exchange areas, SAs are obviously agnostic to network modifications of any SP. In its resulting decision, Ofcom's June 2019 BCMR Statement, it has specified the use of the postcode sectors as the geographic unit used in its geographic analysis¹¹⁷².
- A1.223 Eircom claimed that ComReg had not considered any alternatives to the SA. It cited other European examples (for example Portugal, Finland and Austria) such as EDs, LAAs and counties. Contrary to this claim, some of these had been previously considered by ComReg and its consultants Tera in the course of the analysis but were eliminated on the basis of being too large for the Irish context¹¹⁷³.

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https://www.eir.ie/opencms/export/sites/default/.content/pdf/IR/presentations/2018_2019/quarter3/eir_Q3_FY19_results_presentation.pdf

¹¹⁷⁰ Promoting investment and competition in fibre networks, Approach to geographic markets, published 11 December 2018

https://www.ofcom.org.uk/_data/assets/pdf_file/0005/130001/Consultation-Promoting-investment-and-competition-in-fibre-networks.pdf

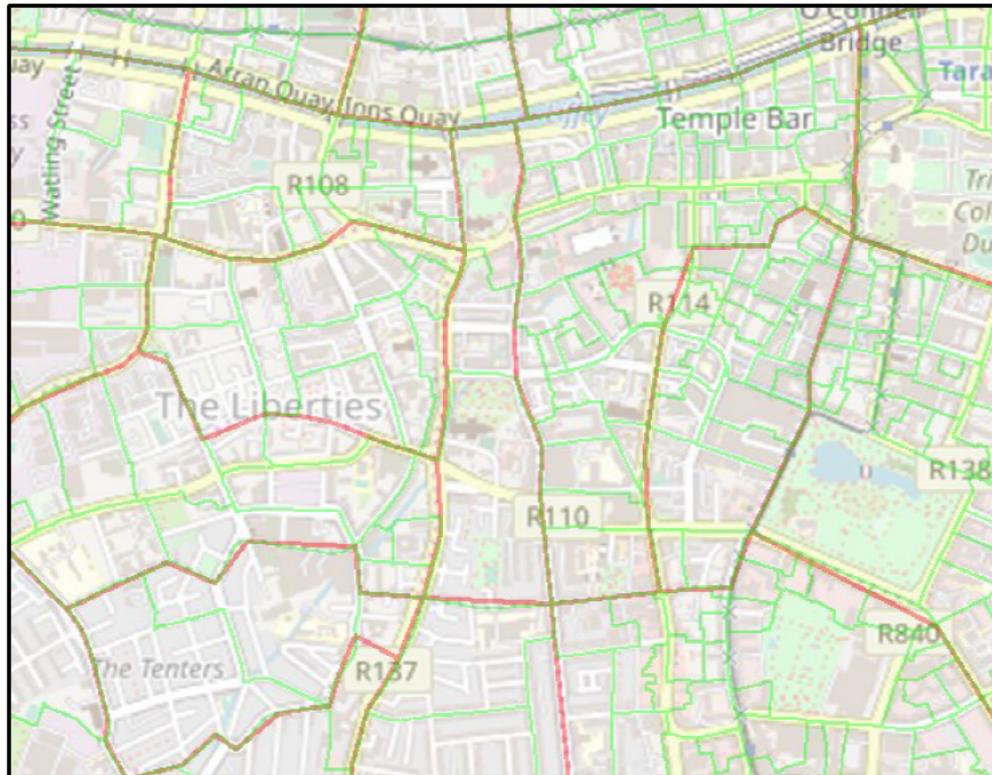
¹¹⁷¹ U.K. postcode format consists of 4 elements representing descending areas of geographical size: Area; district; sector and units. See www.royalmail.com.

¹¹⁷² Paragraph 5.43 of Ofcom's June 2018 BCMR decision.

¹¹⁷³ 2018 Further Consultation, paragraph 4.142.

A1.224 The relative concentration of WPZs in commercial area compared to EDs is shown clearly in Figure 79 below where the number of WPZs (shown below as green boundaries) contained within EDs (shown below as red boundaries) is of course even greater than with SAs. This demonstrates that EDs are unsuitable for the purpose of this analysis.

Figure 79: Electoral Districts (red boundaries) and WPZs (green boundaries)¹¹⁷⁴



A1.225 ComReg notes that its map¹¹⁷⁵ published as part of the 2018 Further Consultation was publicly available, albeit that this map has since been corrected¹¹⁷⁶, as explained in detail in the 2019 Tera Report and in the context of the geographic definition of the WHQA markets in Section 5.

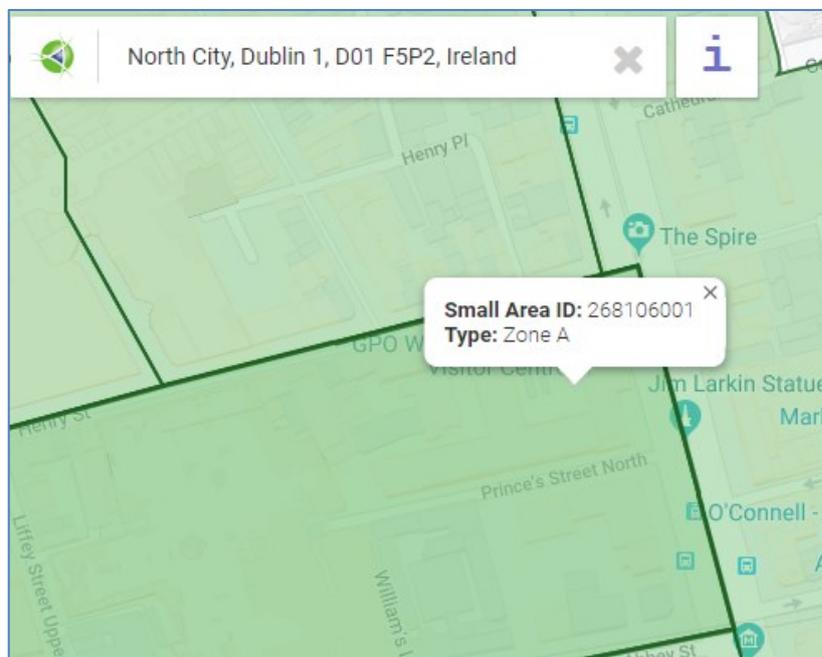
¹¹⁷⁴ Source: CSO; south Central Dublin

¹¹⁷⁵ <https://siteviewer.comreg.ie/ComReg1808b>

¹¹⁷⁶ INSERT LOCATION OF UPDATED/CORRECTED 2018 MAP (tbc)

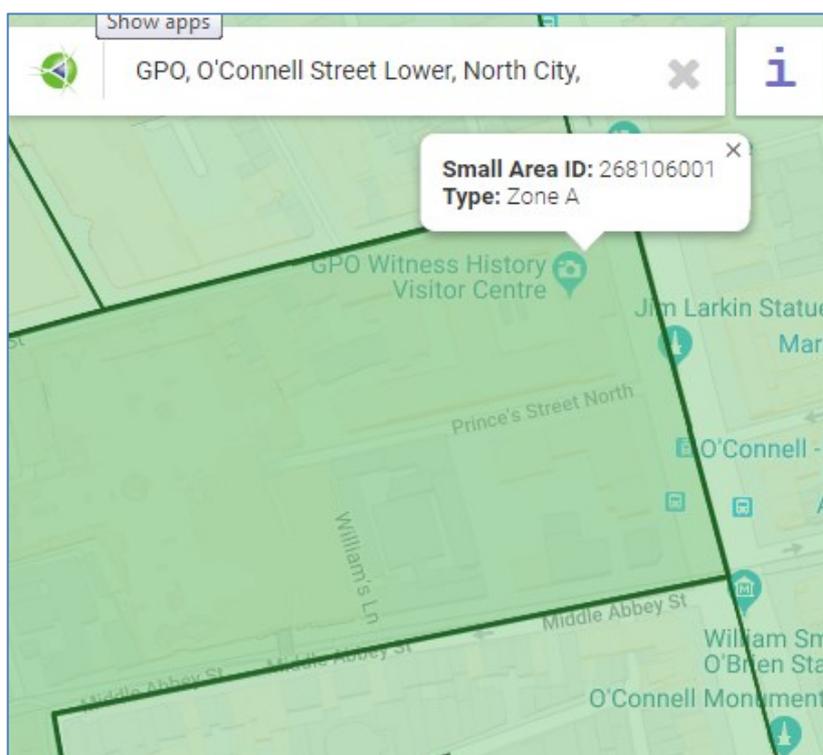
A1.226 ComReg does not agree with Verizon's assertion that Eircom could manipulate the map of Zones A and B published by ComReg. ComReg reminds readers that the address or location search tool available with the publicly available maps allows the viewer to precisely locate any premises, whether by address, Eircode, or visually by simply zooming in on a specific area. For instance, a search for the GPO could be executed by entering its Eircode D01 F5P2 as shown in Figure 80 below or otherwise, by entering its address, "GPO" as shown in Figure 81 below. Both searches will resolve to the specific location showing in which Zone and SA it is located. Alternately, the user can scroll across the map to inspect particular areas and premises. Thus, the notion that the map could somehow be "gamed" by Eircom is a misapprehension. ComReg also published the lists of Zone A and B SAs in Microsoft Excel format with corresponding mapping information which allows SPs to integrate or overlay Zones A and B SAs into their own mapping software. This applies equally to the 2019 map where WPZs have been used, the http link of which is published as part of this Decision¹¹⁷⁷. A conversion table is available on the CSO website¹¹⁷⁸ which describes the WPZs contained within SAs and vice-a-versa, thereby allowing for a comparison to be made between SAs and WPZs.

Figure 80: Search on published map using GPO Eircode



¹¹⁷⁷ [http link to 2019 map](#)

¹¹⁷⁸ www.cso.ie.

Figure 81: Search on published map using GPO address

A1.227 These search capabilities are replicated on the updated published map, the hyper-link of which is published in Annex 6 of the Decision.

Longevity of the geographic unit and output map

A1.228 In response to Eircom's claim in A1.209 above that the 2018 published output map of Zones A and B was based on old 2011 CSO census data and therefore is rendered obsolete by the new map which is based on 2016 data, and it could not therefore view and comment on the updated map, ComReg is making the following observations.

A1.229 The SAs based on the 2011 census data was the only data available to ComReg deemed suitable at the time it was conducting its analysis. A further significant delay to the market analysis process would have been necessary if ComReg had awaited refreshed CSO data based on the 2016 census which only became available in 2018. ComReg considered that such a delay was not warranted or acceptable. In addition, the 2011 and 2016 CSO SA data sets were compared and merely 4 SAs of 18,641 have been impacted by any change to their boundary which in the context of the overall analysis is irrelevant.

- A1.230 As laid out in Section A.1.5.4 above, ComReg has also opted to use WPZs rather than SAs. Although based on SA boundaries, the evidence clearly demonstrates that it is a superior geographic unit on which to base its analysis, it would have been perverse to persist with one which was less fit for purpose.
- A1.231 In regard to Vodafone's query regarding the updating of the output maps for Zones A and Zone B and Eircom's suggestion that the map should be updated on an annual basis, ComReg does not intend to update the map prior to the next market review as it considers that the boundaries are sufficiently stable and regulatory certainty is better promoted by maintaining them. ComReg will, of course, continue to monitor the situation and should material events arise which significantly impact the WHQA market boundaries, it may review them at its sole discretion.
- A1.232 ComReg understands that the average retail contract duration for MI WHQA services is of the order of 3 to 5 years and therefore annual reviews would not be suitable in the context of these dynamics. This is contrast to telecoms services in residential markets where the contract periods tend to be shorter (sometimes as low as 6 months). Additionally, Residential services only applies to a single user or household unit, rather than businesses, where switching supplier is relatively easy. Contrarily, the challenges associated with the possibility of having to change SP or upstream 3rd party connectivity provided on all of part of a large WAN or other essential business service can be considerable and a possible source of major disruption to a business. In order to give certaintiy to both retail end-users and their SPs ComReg considers it appropriate to update the map at the next market review.
- A1.233 The WPZs used in this Decision are those based on the CSO's most recent census of 2016. In ComReg's view, these WPZs will be suitable and fit for purpose for the period to the next review and the current output maps displaying the final Zone A and Zone B areas (as defined in ComReg's SMP analysis described in Section 6 of this Decision) will therefore, provide certainty to industry and end-users for this period. Although national circumstances can vary greatly between national territories, it is noteworthy that Ofcom adopted a similar approach in its recent June 2019 BCMR decision in regard to the U.K. MI WHQA markets.

A.1.5.5 Geographic Assessment - Distance Criterion

A1.234 This section discusses Respondents views on the radial distance criterion of 100 metres as laid out in the 2018 Further Consultation. This criterion was used in conjunction with the proportionality criterion (discussed in detail in Section A.1.5.7 below) in the 2018 Tera Algorithm as described in paragraphs A1.106 to A1.108 above, to assist in categorising whether or not each SA tested was defined as a SA containing high or low density AN infrastructure. It also details ComReg's response to this observations and comments.

ComReg's view on the Distance Criterion as set out in the 2018 Further Consultation

A1.235 In the 2018 Further Consultation, ComReg proposed that 100 metres¹¹⁷⁹ was to be adopted as the distance criterion to be inputted to the 2018 Tera Algorithm which was utilised in the context of the definition of the geographic boundary of the relevant MI WHQA Markets. The algorithm was used to identify conditions of competition in SAs and to identify whether or not they were sufficiently homogeneous such that particular SAs could be grouped together to form specifically identifiable geographic markets. This lead to the then identification of the Zone A and Zone B MI WHQA geographic markets, as described in Section 3 of the 2018 Tera Report published with the 2018 Further Consultation.

A1.236 This 100 metre distance was taken as the maximum distance measurement between a connected premises and at least 2 ANs that would allow both AN SPs to offer service to this customer premises within reasonable timescales. As described in Section 3 of the 2018 Tera Report, an assessment was made to identify whether 75% of connected premises within a SA were within 100 metres of 2 or more ANs. This then led to SAs falling within either Zone A or Zone B.

¹¹⁷⁹ See paragraphs 4.159 and 4.160 of the 2018 Further Consultation.

- A1.237 The 100 metre distance was proposed primarily based with regard to local authorities ('**LA(s)**') "T" wayleaves system where the T2¹¹⁸⁰ notice for a wayleave for up to 100 metres was 7 days for commencement of works with a usual 24 hour turnaround time for issuing in the Dublin City Council ('**DCC**') area, (though this could be longer in others). This would therefore, facilitate a reasonable timescale for installation as explained in paragraph 4.159 of the 2018 Further Consultation.
- A1.238 For dig distances greater than 100 metres on the public roadway, a 3 month waiting time referred to as a notification period is mandated by the licensing body¹¹⁸¹ i.e. work cannot commence for a time period of 3 months after an application is granted. This excludes the licence application time. ComReg's view was that this additional mandatory 3 month waiting period, added to the time taken for actual excavation and overall delivery lead-time for SPs in self providing a LL could jeopardise a new contract or restrict the ability of an operator to bid for business in the first instance. ComReg understands from multiple discussions with various SPs conducted during this review process and from in-depth interviews with a sample of 17 LL end-users in 2017¹¹⁸² that usual lead-times for delivery of a retail multi-site Wide Area Network ('**WAN**') is typically 6 to 12 months or in some instances, 3 months for an additional new LL. Hence, the 100 metre limit was chosen factoring in these issues.

¹¹⁸⁰ T2 refers to license for wayleave to dig up to 100 liner metres.

¹¹⁸¹ Usually the relevant local authority or Road Management Office

¹¹⁸² Appendix 5 of the 2018 Further Consultation.

Respondents' Views on the Distance Criterion

A1.239 The majority of Respondents (BT¹¹⁸³, enet¹¹⁸⁴, ALTO¹¹⁸⁵, Vodafone¹¹⁸⁶) commented that the 100 metres radial distance was too long for the various reasons laid out below. Eircom disagreed and opined that it was too short. It queried if ComReg had considered a different combination of adjusted criteria in the 2018 Tera Algorithm namely, with 200 metre distance and 70% proportionality as the criteria¹¹⁸⁷ applied rather than ComReg's chosen combination of 100 metres with 75%. Zayo and Verizon did not comment specifically on the distance criterion.

Orthogonal or Radial Distances

A1.240 BT noted¹¹⁸⁸ that the 100m distance criteria used in the 2018 algorithm for assessing proximity between customer premises and closest network points was taken as the shortest straight-line distance between each point. It pointed out that this did not take into account obstacles or the necessity to route along the carriageway around corners etc. It maintained that in order to reach a customer premises located 100 metres from a network, the actual trench distance could be considerably greater than 100 metres. It offered 50¹¹⁸⁹ examples from its connected customer base as evidence in support of this view which listed "radial" versus actual dig distances to its customers' premises. This list allowed it calculate average multiplier factors for its various actual dig distances versus radial distances. It claimed that radial distances of 100 metres were increased by a factor of approximately 1.5 (i.e. a 100 metres radial distance was in reality approximately 150 metres average dig distance). For shorter radial distances the multiplier was circa 1.4. Hence a 20 metres radial distance was calculated to have an average dig distance of 28 metres).

¹¹⁸³ BT Submission Part 1, page 19.

¹¹⁸⁴ enet Submission, page 2.

¹¹⁸⁵ ALTO Submission, page 2.

¹¹⁸⁶ Vodafone Submission, pages 5, 6, 8 & 9.

¹¹⁸⁷ Eircom Submission, paragraph 152.

¹¹⁸⁸ BT Submission Part 1, paragraph 83.

¹¹⁸⁹ BT Submission Part 1, Appendix 3.

Network distance measurement variations

- A1.241 Vodafone¹¹⁹⁰, BT¹¹⁹¹ and Zayo¹¹⁹² commented that the 20 metre thickness allocated to all mapped networks would cause issues for the Criteria 2a, the 100 metre distance criterion. Zayo referred to this issue and to ComReg's response to BT's query 9B contained in its WHQA Clarifications Document. Vodafone and BT claimed that this 20 metre corridor could cause distortion of any relevant distance measurements while BT maintained that the introduction of this assumption could inflate the number of SAs included in Zone A. These were laid out in their responses on ComReg's methodology adopted in mapping of SP networks in paragraphs A1.169 to A1.173 above.
- A1.242 Eircom raised the issue of distance measurement from SPs' networks to premises centres or entrances as was explained in ComReg's Clarification Document¹¹⁹³ issued in response to SPs' requests for clarifications to the 2018 Further Consultation. It did not offer any other suggested distance limit which could possibly be used in the algorithm or other perhaps more uniform methodology for nominating a specific single measuring point at a premises. It also queried if ComReg had considered a radial distance of 200 metres combined with a proportionality criterion of 70%¹¹⁹⁴.

¹¹⁹⁰ Vodafone Submission page 6.

¹¹⁹¹ BT Submission Part 1 Annex A paragraph 86.

¹¹⁹² Zayo Submission paragraph 4.1.6.

¹¹⁹³ ComReg's response to Eircom Issue No.5. Information Notice, Response to Requests for Clarifications on Document 18/08, ComReg Document No.18/28 published 13 April 2018.

¹¹⁹⁴ Eircom Submission paragraph 152.

Economic dig distance

- A1.243 4 Respondents (ALTO, BT, enet and Vodafone) stated that ComReg did not fully appreciate the high civil engineering costs and challenges associated with connecting customers when settling on the 100 metre criteria. enet suggested treating the market on a building-by-building basis, though did not offer a specific distance criterion for the distance from each building to ANs. BT provided examples of quotes it had received from its civil engineering contractors for civils and cabling work. It also compared the approximate costs for digging in central Dublin at various distances (25, 50 and 100 metres) and compared these to the regulated prices for a 30Mb Ethernet leased line. It claimed that the payback period was too long in all instances for the nominated distances and rendered self-build uneconomic for its suggested payback period of [redacted] ¹¹⁹⁵.
- A1.244 BT also referred to an example where a very short dig (less than 10 metres) it had completed in central Dublin cost more than [redacted] ¹¹⁹⁶. It cited this as demonstrating the high costs associated with civil engineering works, particularly in Dublin. It provided information from its submission that from its calculations, based on its costs versus the price of the regulated product, the economic dig distance is [redacted] radial metres and that actual distances should be reduced by a multiplier of circa 1.5.
- A1.245 enet similarly provided examples of 2 estimates of what it characterised as high cost civils engineering digs in Dublin ¹¹⁹⁷. It claimed that it was quoted prices of [redacted] for 2 short digs in Dublin ¹¹⁹⁸ and that some streets in the country were prohibited from any civils activity for a considerable period. It offered the example of where a local authority has placed a moratorium on an civils activity for 7 years [redacted] upon which Westmeath County Council had placed a moratorium on any digging until 2025].

¹¹⁹⁵ BT Submission Part 1, Annex page 41.

¹¹⁹⁶ BT Submission Part 1, Appendix 3.

¹¹⁹⁷ enet Submission, pages 10 & 11.

¹¹⁹⁸ *Ibid*, page 18.

A1.246 ALTO claimed that the average cost of digging 20 metres to provide network connectivity is equivalent to the price of a purchased wholesale input¹¹⁹⁹, so therefore, any dig greater than this was uneconomic.

Road opening licensing regimes

A1.247 Eircom¹²⁰⁰ and Vodafone¹²⁰¹ noted that ComReg has engaged with 5 LAs during the course of its analysis. Both SPs claimed that this engagement was not sufficiently representative of the country as a whole as it was Dublin-centric and therefore, did not represent national circumstances. Eircom noted that ComReg has chosen the 100 metre criterion based on notification periods of these 5 LAs and it was therefore not nationally representative and hence not sufficiently robust to be considered on a nationwide basis.

A1.248 Vodafone stated that Dublin City Council needed to positively approve permissions¹²⁰², rather than having an automatic approval process. Furthermore, it assumed delays could be incurred. It also referred to the now superseded, September 2015 edition of the “Purple Book”¹²⁰³, (The Guidelines for Managing Openings in Public Roads) published by the Department of Transport, Tourism and Sport which referred to 28 days notification for a “T2” application. Vodafone also stated that its understanding of this version of the Purple Book, was that a “T1” (3 month notification) is required as a precursor to a “T2”.

A1.249 BT commented that wayleaves issues can mean installations for LL circuits into premises which are less than 100 metres distance from its network take up to 3 months¹²⁰⁴. It also offered a list of issues which it maintained were impediments to network rollout. The problems it cited can be categorised largely as private wayleave issues (landlord; planning; vague ownership of carparks) and commercial (enet’s offering); regulatory (Eircom duct offering) and workaday issues (blocked ducts).

¹¹⁹⁹ ALTO Submission page 2.

¹²⁰⁰ Eircom Submission paragraph 35.

¹²⁰¹ Vodafone Submission page 5.

¹²⁰² Vodafone Submission page 5.

¹²⁰³ http://www.rmo.ie/uploads/8/2/1/0/821068/guidelines_for_managing_openings_in_public_roads_september_2015.pdf

¹²⁰⁴ BT Submission Part 1 paragraph 84.

ComReg's Assessment of Respondents' Views on the Distance Criterion

Road Opening licensing regimes

- A1.250 Having considered Respondents' views, ComReg' position is that the 100 metre dig limit imposed by LAs with the T2 road opening licensing application process remains valid as the major consideration upon which to base the *overall* distance criteria. In response to Eircom query if ComReg had consider a combination of 200 metres radial distance limit with a combination of 70% proportionality criterion¹²⁰⁵, ComReg considers that this is excessive for the reasons set out below while the proportionality criterion is dealt with in Section A.1.5.7 below.
- A1.251 ComReg has revisited this issue and completed extensive research with the relevant bodies including Transport Infrastructure Ireland ('**TTI**') and of most relevance, DCC and the Roads Management Office (the '**RMO**') which has taken over responsibility for processing road opening applications for all other 30 LA's in the state including the 3 other LAs interviewed previously for the 2018 Consultation i.e. Fingal Co. Co., South Dublin Co.Co. and Cork Co.Co.
- A1.252 The Road Management Office ('**RMO**'), set up by the County and City Managers Association ('**CCMA**') has, since 2014, provided back office support to the majority of LAs for their road opening licence processes. ComReg has engaged¹²⁰⁶ with the RMO in order to be fully appraised of its operation. Since 2018 it has taken over responsibility as the sole agency dealing with the processing of road opening licences for all local authorities in the country, other than Dublin City Council ('**DCC**') which still maintains its own separate licencing system. Both bodies are endeavouring to harmonise fully their respective processes but this may not be completed for a considerable time.

¹²⁰⁵ Eircom Submission, paragraph 152.

¹²⁰⁶ Meeting with RMO 26 June 2018 and subsequent telephone calls and emails.

A1.253 The RMO's 'MapRoad' Roadworks Licensing System ('**MRLS**') is now used by 30 of the 31 LA in the country and the rules contained in current version of the Purple Book are applied uniformly across all such 30 areas. Table 19 below shows the volume of licence applications to the RMO by the major SPs¹²⁰⁷ over the past 6 years. It demonstrates relatively low volumes of applications on behalf of some significant SPs. ComReg found that there was no corresponding increase in civil engineering activity of such SPs in line with the recent upturn in economic activity of recent years. This is demonstrated by the volume of RMO MRL licence applications processed for the years 2016 to 2018 and the breakdown per LA in Table 20 below, obtained from the Mobile Phone and Broadband Task Force ('**MP&BTF**') 2018 Annual Implementation Review¹²⁰⁸.

¹²⁰⁷ enet, Virgin Media, Eircom, BT Ireland, SIRO and ESBT.

¹²⁰⁸ Page 17 <https://www.dccae.gov.ie/documents/2018ImplementationReview.pdf>

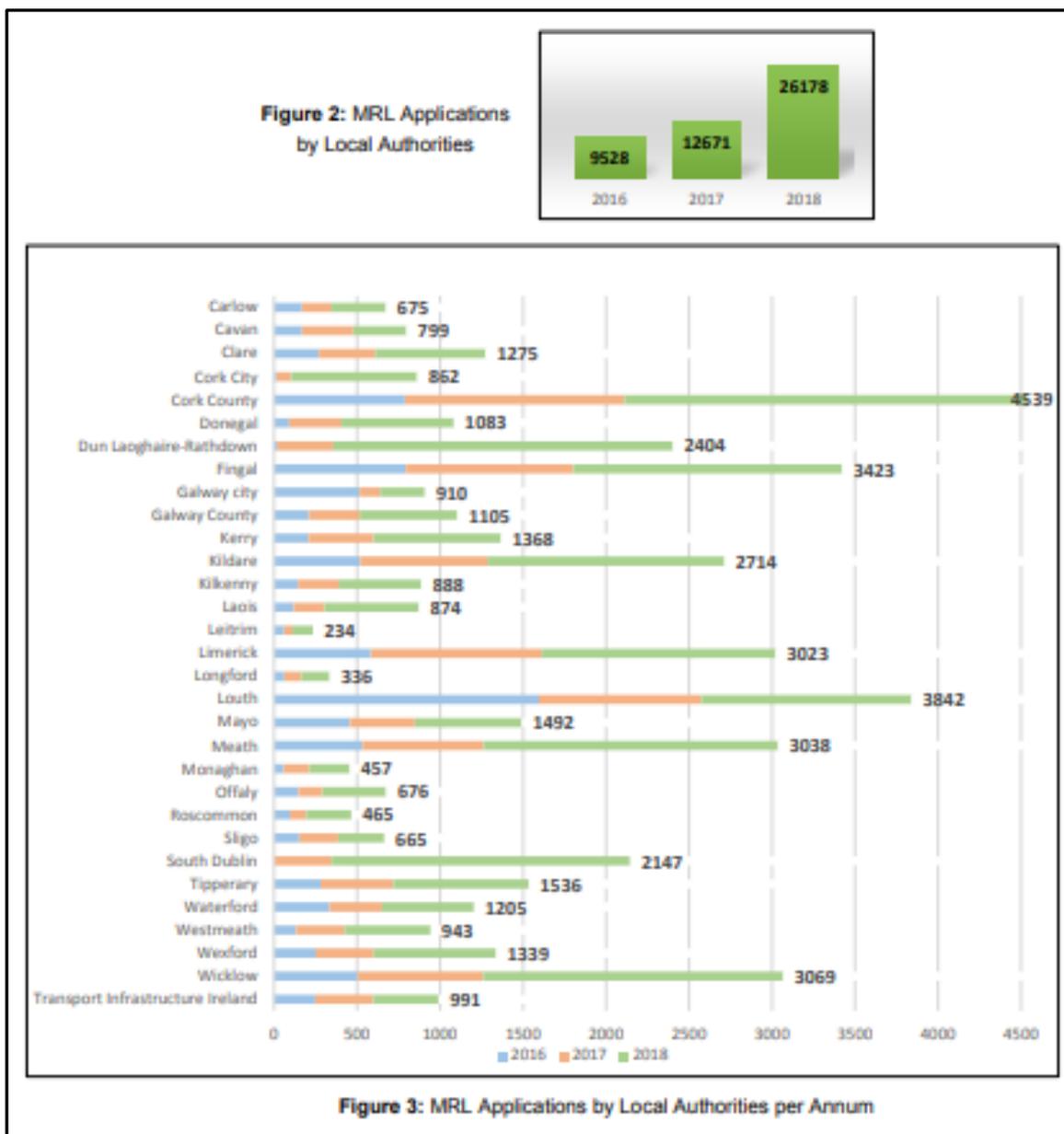
Table 19: RMO License Application Volumes per SP, anonymised¹²⁰⁹ (2014 to 2019)
(Source: RMO)

Organisation Total and breakdown by licence type		Number of Granted Licences by Year on MRLS					Grand Total	
		2014	2015	2016	2017	2018		Q1 2019
SP 1		177	2,167	3,046	4,305	7,148	1,886	18,729
Licence Type	T1		4	74	80	79	17	254
	T2*			283	466	803	370	1,922
	T2	105	1,551	846	917	1,402	278	5,099
	T3	72	611	1,833	2,756	4,664	1,142	11,078
	T4		1	10	86	200	79	376
SP 2			75	104	133	138	39	489
Licence Type	T1			5	3	1	2	11
	T2*			1	5			6
	T2		49	48	64	57	18	236
	T3		26	50	57	75	13	221
	T4				4	5	6	15
SP 3				5	4	8	2	19
Licence Type	T1				1		1	2
	T2*				2			2
	T2					5	1	6
	T3			5	1	3		9
SP 4			350	1,253	917	1,259	328	4,107
Licence Type	T1		3	52	40	65	25	185
	T2*			105	141	487	167	900
	T2		337	1,018	346	273	68	2,042
	T3		10	78	390	431	65	974
	T4					3	3	6
SP 5			161	583	684	564	86	2,078
Licence Type	T1		1	33	8	18	1	61
	T2*		2	128	190	112	16	448
	T2		115	316	340	257	36	1,064
	T3		43	94	132	163	30	462
	T4			12	14	14	3	43
SP 1			12	18	18	46	12	106
Licence Type	T1							
	T2*							
	T2		1	4	7	11	5	28
	T3		11	14	10	15	7	57
	T4				1	20		21
Grand Total		177	2,765	5,009	6,061	9,163	2,353	25,528

Note: T2*.T1 Notifications are not licences for works in their own right, the T2*s are the licences and these are linked to the corresponding T1.

¹²⁰⁹ Data listed is for SPs BT, Eircom, enet, Virgin Media and SIRO.

Figure 82: RMO MRL licence applications data 206 to 2018



Source: MP&BTF at www.DCCAIE.ie

- A1.254 One of the main issues identified by the **Mobile Phone Broadband Task Force** ('**MP&BTF**')¹²¹⁰ in its report of December 2016¹²¹¹, was the need for a consistent approach in the way road opening and planning procedures are dealt with across local authorities. It noted that these inconsistencies resulted in a variances in the cost and charges applied to telecommunications projects. It further noted that while the RMO had streamlined processes, a lack of consistency still existed in charging, application of processes and the length of time taken to process applications by various local authorities. It commented that this had resulted in industry facing considerable uncertainty when planning national investment in telecom infrastructure due to the wide variance in processes, timelines and prices associated with network rollouts.
- A1.255 It therefore, proposed that a uniform national system should be adopted for processing road opening with the RMO appointed as the responsible agency and that this should be implemented as a matter of priority. As a result of this initiative, the RMO was given the responsibility to act as a single national agency to act as a single point of contact for the processing of license applications for road openings by all utilities. Since 2018 it taken over full responsibility as the sole agency for this task, for 30 of 31 LAs in the country
- A1.256 Crucially, the process adopted by the RMO has been based on the "T" system of licensing developed by DCC. This was because the DCC system was accepted by stakeholders as having the most sophisticated system nationally. There are minor differences where the RMO has extended its "T2" application period or turnaround time to 14 days, compared to 1 day by DDC, in order for it to be able to guarantee uniformity across all the LA areas for which is it responsible for processing applications. This means that the full time period from license application to commencement of works in the RMO LA areas is 21 days and 8 days in the DCC area.

¹²¹⁰ The Programme for a Partnership Government committed to the establishment of the Mobile Phone and Broadband Taskforce. Its aims are: to identify solution to broadband and mobile phone coverage deficits; and to investigate how better services could be provided....prior to full build of the National Broadband Plan.

¹²¹¹ Available at www.dccae.ie

- A1.257 Since the RMO has taken over the process for road openings from the 30 LAs, the “Purple Book¹²¹²” of April 2017, Second Edition (Rev 1), despite still being titled “Guidelines”, has been adopted as the *de facto* rules by which RMO and therefore, the 30 LAs operate. Prior to this, the Purple Book was taken by LAs as guidelines and many had effectively operated their own licensing systems and applied correspondingly unique civil engineering standards independently. As such, ComReg is satisfied that the pricing and timelines for access to wayleaves are sufficiently standardised across the country to allow the distance criterion to apply equally across the State.¹²¹³
- A1.258 The observations registered by Vodafone in its Submission regarding the possibility of delays relating to DCC road opening approvals process and that the 3 month T1 approval process is required as a prerequisite to the much shorter T2s, were both based on a theoretical appraisal of the now obsolete 2015 Purple Book. They were not evidenced on any practical experience of the process.
- A1.259 ComReg has had repeated engagements¹²¹⁴ with DCC, and understands that the vast majority of its T2 applications are processed within 24 hours. Furthermore, ComReg understands that DCC intends to modify its repaving and reinstatement rules for special surface areas, where DCC had previously insisted in completing all reinstatement works itself. DCC explained that this will allow SPs to have greater control over reinstatement processes, making the reinstatement more efficient than the current practice whereby DCC must involve itself directly in the physical works associated with a road opening. DCC envisages that the only exception to this will be areas of historic significance where antique paving is in-situ. Table 20 below shows the volume of SP T1 and T2 license applications registered with DCC for the period 2010 to Sept 2018. DCC and the RMO confirmed that their processing times for T2s were typically 24 hours and 14 days respectively.

¹²¹² The Purple Book is the set of national guidelines for road openings issued by the Department for Transport, Tourism and Sport.

¹²¹³ Though individual LAs have the latitude to set individual long term damages charges.

¹²¹⁴ In meeting 16 October 2018 and by email and telephone.

A1.260 ComReg has contacted the local authority cited by enet as imposing a moratorium on civils activity in a street in the town centre of a major provincial town¹²¹⁵. It stated that it had contacted all utilities including telecommunications companies and advised them that it intended to resurface one street and impose a moratorium on civils activity on it, other than for emergency works. It requested that new duct would need to be laid in advance of works and that existing infrastructure would be incorporated in its plans. It received no requests for additional or new duct routes to be laid from any telecommunications companies.

¹²¹⁵ By telephone interview October 2018. [§< [REDACTED]].

Table 20: T1 and T2 licenses issued by DCC, SPs anonymised¹²¹⁶ 2010-2018

T1's Issued by DCC									
SP	2010	2011	2012	2013	2014	2015	2016	2017	2018 (Jan-Sept)
1	0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	3	1
3	0	3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	5	0	0	0	0	1	0
7	0	0	0	0	0	4	3	10	4
8	0	0	0	2	1	0	0	0	1
9	0	0	1	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	1
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
16	0	3	1	1	1	2	2	3	2
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
Totals - All	1	6	7	3	2	6	5	17	9
T2's Issued by DCC									
Operator	2010	2011	2012	2013	2014	2015	2016	2017	2018 (Jan-Sept)
1	0	0	0	0	0	0	0	0	0
2	28	22	20	8	22	31	51	36	10
3	46	110	100	68	37	61	43	58	87
4	15	15	23	25	36	40	46	56	61
5	0	0	0	0	0	2	0	2	1
6	520	382	838	2082	1340	790	742	624	419
7	0	0	0	0	0	17	89	165	57
8	0	28	8	64	9	1	4	14	7
9	1	12	16	21	24	15	18	11	29
10	0	0	0	12	0	0	0	0	0
11	0	0	0	0	0	0	0	1	0
12	2	0	0	0	1	0	0	0	0
13	0	0	0	0	0	0	0	0	64
14	0	0	0	0	0	0	0	0	0
15	0	18	11	3	3	6	0	0	0
16	379	632	217	192	329	273	129	122	125
17	25	47	15	18	34	52	10	15	4
18	0	0	0	0	0	0	0	0	0
Total - All	1016	1266	1248	2493	1835	1288	1132	1104	864

A1.261 Given the above, ComReg was satisfied that the evidence gathered from the sample LAs and since verified by the RMO and DCC is robust. It considered that it was therefore reasonable and proportionate to retain the 100 metres dig distance as the basic building block for its analysis of the “dog walks” distance upon to consider changes to the “crow flies” radial distance criterion for use in 2019 Tera Algorithm as described in section A.1.5.5 below.

¹²¹⁶ SPs are Virgin Media, Verizon, BT, Magnet, Viatel, SIRO, Eircom, Aurora, Host Ireland, Airspeed, Vodafone, GTT, Three, Colt, ESBT and EU Networks.

Economic dig distance

- A1.262 ComReg recognises that civil engineering costs are the most significant cost input in supplying not just LLs but all fixed line telecommunications services. SPs face considerable commercial and economic challenges in connecting customers to their networks. Ireland is a relatively high cost economy (a Eurostat report for 2018¹²¹⁷ rated Ireland as the second most expensive EU country for goods and services), hence civil engineering costs are likely to be correspondingly high. However, Ireland is not unique to other jurisdictions in regard to the long established fact that civil engineering costs contribute a very high proportion of overall costs incurred in the delivery of fixed telecommunication services and such costs are probably in line with the costs for products and services in the general economy.
- A1.263 ALTO's assertion that the economic dig distance was 20 metres on the basis of being equivalent to the price of a purchased wholesale input was not supported by any data or reference to any study or refer to any specific wholesale service e.g. 1Gb, 500M etc. ComReg assumes the comparison was to some *regulated* wholesale input, though this was not stated. As there was an absence of any supporting evidence, independent or otherwise, ComReg does not attach much weight to this claim.
- A1.264 Some major SPs communicated to ComReg that the LL revenue information provided with its data was unreliable due to the way in which retail telecommunication services are sold whereby LLs are no longer sold as pure stand-alone connectivity services in the retail market and are mostly provided as part of bundled offerings.

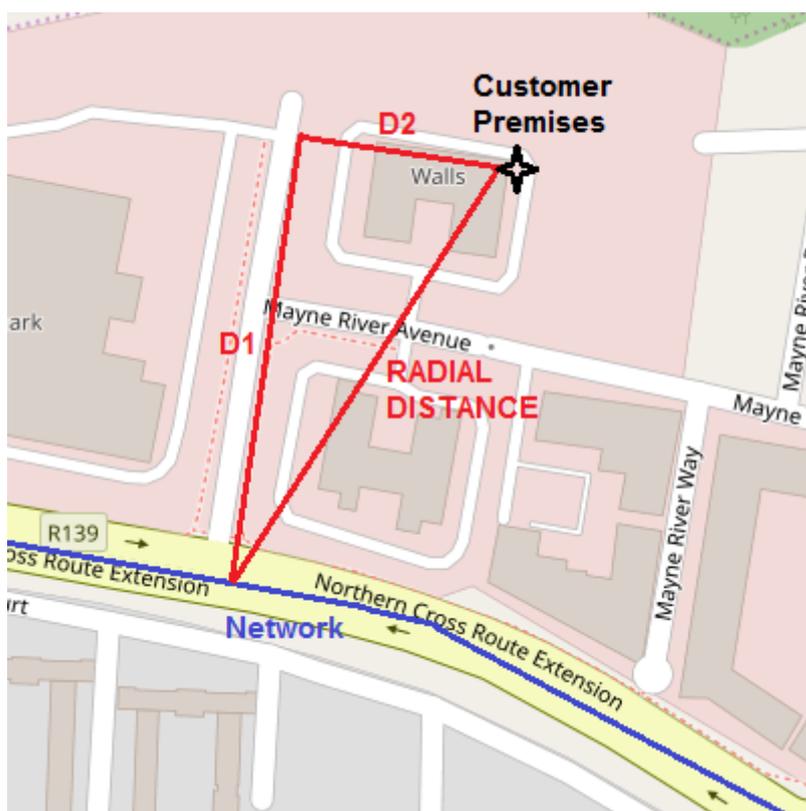
¹²¹⁷ [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Comparative price levels of consumer goods and services#Overall price levels](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Comparative_price_levels_of_consumer_goods_and_services#Overall_price_levels)

Radial versus actual distances and measurement variations

- A1.268 The point raised by BT relating to the difference between the radial and dig distance measurements from a premises to a network is not trivial. ComReg accepts that the difference between a “dog walks” versus “crow files” distance can be considerable. This can therefore, impact directly on the road opening wayleave process and the associated lead-times should the dig distance be greater than 100 metres. In many instances, the actual dig distance will be greater than the radial distance and each case will be different.
- A1.269 This is demonstrated in the stylised example in Figure 83 below. Although, it would be impossible to consider every possible situation for each premises due to the vast variation in road and building layouts across the country, ComReg opinion is that this should be taken into account in choosing the suitable radial distance for use in the 2019 Tera Algorithm.
- A1.270 ComReg also accepts the argument made by Vodafone and others in paragraph A1.241 above in relation to the 20 metre margin of error or “wobble” factor in measuring distance. This is where up to 20 metres can inadvertently be lost in any premises to network distance measurement due to the adoption of 20 metres for network widths.
- A1.271 Additionally, Eircom’s point regarding the variance of measurements due to them being taken from either the entrance or centre of a premises¹²²² also introduces a further possible element in possible inconsistencies of distance measurements between a premises and a network. ComReg has therefore, taken into account this 20 metre margin of error and variance of the coordinates used for premises location (centre or entrance) in its revised analysis.

¹²²² See paragraph A1.242 above.

Figure 83: Stylised example of radial versus actual dig distance



A1.272 ComReg also notes that in the Ofcom BCMR Consultation of July 2008¹²²³ upon which BT suggested¹²²⁴ ComReg should base its analysis for its geographic market definition, Ofcom chose a distance of 200 metres as its radial distance criterion and confirmed this in its corresponding final decision¹²²⁵ of December 2008. BT Ireland stated in its responses that 100 metres was too long and considered less than 20 metres to be the “economic” dig distance. However, Ofcom has modified its view on this issue considerably in the intervening period and in its most recent decision, the June 2019 BCMR Statement¹²²⁶, it has reduced this “buffer” distance to 50 metres¹²²⁷.

¹²²³ Ofcom consultation: BCMR Review of the wholesale very high bandwidth traditional interface symmetric broadband origination markets, published 10 July 2008.

¹²²⁴ BT Submission Part 2 FN 41.

¹²²⁵ Ofcom Statement and Consultation: BCMR Review of the wholesale very high bandwidth traditional interface symmetric broadband origination market, published 8 December 2008.

¹²²⁶ https://www.ofcom.org.uk/data/assets/pdf_file/0025/154591/volume-2-bcmr-final-statement.pdf

¹²²⁷ *Ibid* paragraph 5.60.

A1.273 Having regard to the possible cumulative effect of the above factors, ComReg has decided to reduce the radial distance criterion to 50 metres applied in the revised Tera Algorithm for the purpose of this Decision. This more accurately reflects the circumstances encountered by SPs when connecting to customer sites particularly where such connections qualify under the RMO and DCC road opening licensing regimes.

A.1.5.6 Access to Eircom's CEI and LLU products

A1.274 This annex considers the comments received from Respondents in relation to ComReg's view on Eircom's upstream market Wholesale Local Access physical (WLA) inputs i.e. duct and pole access, collectively referred to as Civil Engineering Infrastructure ('CEI') and LLU. Comments were received from 5 Respondents, ALTO, BT, Vodafone, Eircom and enet on this topic and ComReg response to these comments are laid out in detail.

ComReg's Preliminary View in the 2018 Further Consultation

A1.275 In the MGA approach to product and geographic market analysis and definition, it is usual to assume that there are no regulated inputs available in the market(s) under consideration but that the regulated inputs available from any relevant related markets are taken into account. In its analysis in the 2018 Further Consultation, ComReg acknowledged that there are such upstream products available (duct and pole unbundling and LLU) arising from regulatory obligations imposed in other markets but that it did not comment on the efficacy of the duct and pole products. This was because of the negligible uptake of the duct and pole products (a situation which remains unchanged) means that these products do not constrain a hypothetical monopolist in the relevant WHQA markets.

Respondents' Views on Access to Eircom's CEI and LLU Products

- A1.276 Eircom stated¹²²⁸ in its Submission that ComReg's analysis was invalid due to the availability of Eircom's CEI passive access products such as duct and pole, as ComReg had acknowledged in paragraph 4.160 of its 2018 Further Consultation. It also considered that, because ComReg had stated in its Clarification Document¹²²⁹ that it had not analysed the efficacy or otherwise of Eircom's passive access products, that the overall analysis was therefore flawed. Eircom considered ComReg was legally obliged to do this.
- A1.277 ALTO¹²³⁰, BT¹²³¹ and Vodafone¹²³² all stated that Eircom's passive access CEI offering (duct and pole reference offers) was not acceptable to industry as it was not fit for purpose. Vodafone¹²³³ also noted that ComReg had stated in paragraph 4.160 of the 2018 Further Consultation that "*....these could be used to significantly reduce...civil engineering activity*".
- A1.278 BT compared the treatment of LLU by Ofcom in the U.K. broadband market review¹²³⁴ where several SPs had taken the LLU upstream regulated offer in order to provide downstream broadband services. LLU was thereby treated as facilitating the entry of multiple SPs, though it acknowledged that both markets were different in respects of supply, demand and switching.

¹²²⁸ Eircom Submission, paragraphs 31, 38 & 39.

¹²²⁹ Response to BT Issue No.5. Information Notice, Response to Requests for Clarifications on Document 18/08, ComReg Document No.18/28 published 13 April 2018.

¹²³⁰ ALTO Submission, pages 3 & 28.

¹²³¹ BT Submission Part 1, page 1.

¹²³² Vodafone Submission, page 9.

¹²³³ enet Submission, page 7.

¹²³⁴ BT Submission Part 1 Annex paragraphs 105 to 107.

ComReg's Assessment of Respondents' Views on Access to Eircom's CEI and LLU Products

A1.279 In paragraph 5.166 of the 2018 Further Consultation, (as acknowledged in BT's Submission¹²³⁵), ComReg referred to the fact that although duct and pole access was available to industry, it was not aware of any significant uptake by SPs. ComReg therefore, did not consider these duct and pole offers as having any material impact on the downstream LL markets. This was confirmed in ComReg's WHQA Clarification Document. Here, ComReg stated that:

*"...regulated wholesale passive access products was not materially relevant to the specific adoption of the 100 metres distance criterion"*¹²³⁶.

A1.280 Mere availability of access to Eircom's duct and pole infrastructure is insufficient in and of itself in assessing whether it might have a material impact on SPs' ability to use it for MI WHQA services. Importantly, there has been trivial use by SPs of Eircom's duct and pole infrastructure for the purpose of delivering MI WHQA services. For clarity, when ComReg stated that it did not perform a study of the efficacy or otherwise of Eircom's duct and pole offers, this meant that a detailed exercise of this nature was not deemed necessary given the negligible use by SPs of Eircom's duct and pole infrastructure offers in delivery of services in the downstream MI WHQA markets. ComReg recognises that within its decision¹²³⁷ of November 2018 regarding the WLA Market, it has imposed obligations on Eircom to provide both duct and pole access on an Equivalence of Input ('Eoi') bases and will continue to closely monitor developments in this regard.

A1.281 BT's point regarding the use of LLU and how regulated access to such infrastructure inputs should be taken into account in other related markets is understood by ComReg. It is however, noteworthy that the impact of LLU is of little relevance to the relevant WHQA markets as its usage in the provision of leased lines over the years has been negligible¹²³⁸ and therefore, of little consequence.

¹²³⁵ BT Submission Part 1, paragraph 107.

¹²³⁶ Response to BT Issue No.5. Information Notice, Response to Requests for Clarifications on Document 18/08, ComReg Document No.18/28 published 13 April 2018.

¹²³⁷ ComReg Decision No. D10/18 published 19 November 2018.

¹²³⁸ Less than 200 lines in the entire MI HQA markets.

A1.282 Given the above, ComReg considers that its treatment of Eircom's regulated upstream offers in the 2018 Further Consultation was justified and it was reasonable and proportionate for it to maintain this policy within this analysis supporting the final decision.

A.1.5.7 Geographic Assessment - Proportionality criterion

A1.283 This section discusses Respondents views on the "proportionality" criterion which was used in the Tera algorithm. This proportionality test was applied in the algorithm in conjunction with the distance criterion discussed in section A.1.5.5 above, to gauge if 75% of more locations of Connected Premises were within 100 radial metres of 2 ANs. ComReg had specified the level of 75% for the pass/fail criterion in 2 separate tests contained within the Tera Algorithm. The first application of the proportionality test was against SAs using the database of SPs' MI service connected premises locations, (though limited to SAs containing 4 or more connected premises). The second application of it was for SAs with the MI forecast database of Organisations locations where each SA contained 1 or more organisation.

A1.284 Both databases of locations used in the algorithm were discussed in detail in section A.1.5.2 above. This distance of 100 metres was deemed sufficient in the 2018 Further Consultation to allow end-users a choice of suppliers and this distance criterion has been reduced to 50 metres as discussed in detail in section A.1.5.5 above. In both cases, if the test was passed by individual SAs, these were classified as SA with high concentrations of alternative telecommunications network infrastructure while those that failed were categorised as SAs having low concentrations of alternative infrastructure.

Preliminary View set out in 2018 Further Consultation

A1.285 ComReg set out its considerations in the 2018 Further Consultation¹²³⁹ on its choice of 75% as being the appropriate threshold level for this test. Here, it had considered using a lower (50%) or higher (90%) level. The higher level meant that if more than 1 customer site of 10 was outside the then 100 metre distance criteria, the SA would be considered as having low density AN infrastructure present whereas the 50% level meant that half the customer sites located in an SA could have a limited choice of supplier for the provision of HQA services. ComReg considered that these values were therefore extremes on a continuum of possible choices. As such, ComReg was of the view that a 75% threshold was reasonable and proportionate.

Respondent's Views on the Proportionality Criterion

A1.286 enet criticized¹²⁴⁰ the 75% threshold on the basis that it did not bear relevance to the topography and location of potential LL customer in any SA and was therefore not based on reality.

A1.287 Zayo¹²⁴¹ also raised concerns regarding the 75% criterion and suggested that it should be increased to 90%.

A1.288 Eircom provided what it considered were potential examples of where this criterion and others applied in the algorithm produced inconsistent results. It submitted a list of 16 locations¹²⁴² which it maintained were passed by two ANs but the SAs in which they were contained were allocated to Zone B. It asked if ComReg had considered using a 70% proportionality criterion in conjunction with a 200 metres distance criterion.

¹²³⁹ 2018 Further Consultation, paragraphs 4.161 to 4.164.

¹²⁴⁰ enet Submission, page 15.

¹²⁴¹ Zayo Submission, page 10.

¹²⁴² Eircom Submission, paragraph 42.

A1.289 BT suggested¹²⁴³ replacing the 75% criterion test in SAs which have between 1 to 3 LL connected buildings and then distinguishing between pre-ducted and other buildings. It went on to suggest that ComReg create a complex 3 dimensional array using various chosen parameters (which was also to be weighted by the number of circuits sold at each connected building) based on an Ofcom study, from its July 2008 BMCR Consultation¹²⁴⁴ (on very high bandwidth TI symmetric broadband origination markets), as described in paragraph A1.141 above. It offered an example where its theoretical calculations provided an output of a fractional number of 2.6 ANs being present.

ComReg's Assessment of Respondents' Views on the Proportionality Criterion

A1.290 ComReg maintains that 75% is a reasonable target by which to demarcate geographic units between high versus low density infrastructure areas for the same reasons laid out in the 2018 Further Consultation and reprised in paragraph A1.285 above. The suggestion of setting it at 90% by ZAYO is one of the extremes already eliminated by ComReg and the 70% suggestion by Eircom is not backed by any information that would allow an assessment of its efficacy over 75%.

A1.291 In response to enet's suggestion that topography of SA should be taken into account, ComReg considers that it is not feasible for it to inspect individual SAs (given their number) (now WPZs) for unique topographical contexts as suggested by enet. However, the SA and WPZ boundaries, because they are based on residential and daytime population respectively, usually (but not exclusively), typically fall on "natural" topographical boundaries such as roadways, rivers and railways.¹²⁴⁵

¹²⁴³ BT Submission Part 2, pages 26 to 29.

¹²⁴⁴ Ofcom Consultation: Appendix 6 of BCMR Review of the wholesale very high bandwidth traditional interface symmetric broadband origination markets, published 10 July 2008.

¹²⁴⁵ They demarcation of these Geographic units naturally align with areas that have the same underlying civic infrastructure

- A1.292 Furthermore, enet did not offer any practical suggestions as to what topographical criteria could be employed or how they could be incorporated in an analysis. Even if such a very detailed exercise was capable of being undertaken, the additional value gained by it is not likely to be commensurate with the effort and time expended. ComReg considers that this especially holds in view of the now adoption of the WPZ as the geographical unit which is smaller than SAs in areas with high concentrations of demand. Neither did it explain how the assessment of each building could be achieved and applied in practice and what the suggested criterion would be used to declare a building as competitive or uncompetitive in relation to supply of HQA services.
- A1.293 In ComReg's opinion the raising of the threshold to 90% or lowering to 50% as reprised in paragraph A1.285 above would be extreme and unreasonable and therefore, unjustified. Choosing either of these extremes could yield either false negative or positive results. This argumentation equally applies to WPZs.
- A1.294 ComReg also notes that Ofcom, in its recent decision on leased lines market, it's June 2019 BCMR statement, has specified a 65% threshold in its approach to measuring alternative network reach in its analysis of geographic markets in the CI¹²⁴⁶ markets. Ofcom has used this 65%¹²⁴⁷ coverage criterion for two or more ANs for coverage of relevant premises within each of its chosen geographic unit. This set of relevant premise were defined as premises of organisation of more than 250 employees and mobile base stations already serviced by a leased line.
- A1.295 Furthermore, in response to an Information Request from the European Commission concerning a sensitivity analysis in relation to the 75% threshold, ComReg provided information on the change in the number of WPZs and connected premisies that would be in Zone A were the proprortionality criterion to be reduced to 65% and 60% respectively.
- A1.296 The results are as follows:
- (a) With the criterion set at 65%: there are 2,775 competitive WPZs (+1.46% of WPZs) and 5,070 premises (+2.4% of Connected Premises); and
 - (b) With the criterion set at 60%: there are 2,781 competitive WPZs (+1.68%) and 5,107 Connected Premises (+3.2%).

¹²⁴⁶ Contemporary Interface is equivalent to ComReg's MI.

¹²⁴⁷ Ofcom June 2019 BCMR Statement Annex 12 paragraph 12.91.

- A1.298 ComReg maintains therefore, that the original 75% criterion it has chosen is both reasonable and proportionate and remains valid.
- A1.299 In response to BT's proposition that ComReg create a complex 3 dimensional array to allow grouping of ANs, ComReg considers that such an exercise is not feasible due to the quality and granularity of information held by SPs and therefore made available to ComReg. As explained above, many major SPs encountered significant challenges providing their basic connected premises information. For example, [§< ██████████ ██████████ ██████████]].
- A1.300 In addition to not being practical, ComReg's view is that such a study is not justified. It is noteworthy that Ofcom's thinking has evolved significantly over the past eleven years as illustrated in its December 2018 Consultation¹²⁴⁸ on geographic markets referred to above in paragraph A1.294. Here, it details a much more streamlined approach which broadly aligns with the methodology consulted upon by ComReg. In this latest approach Ofcom suggests that the presence of 2 or more ANs with a combined coverage of 65% in a geographic unit is sufficient to consider the lifting of regulation in such areas. Ofcom confirmed this approach in its June 2019 BCMR decision.
- A1.301 Finally, ComReg has looked at many of the examples offered by Eircom in its list of Zone B hospitals which it claimed were incorrectly assigned and should have been in Zone A. Here, it appears to have taken a superficial application of the distance criteria into account, in isolation of other considerations. The proportionality test which applied to the geographic unit in which these particular sites were contained does not seem to have been taken into account. Eircom does not have the relevant information at its disposal to compute this test i.e. the location of the other SPs connected premises within these areas. It may observe AN network in some portion of the localities of such areas but this does mean that the required 75% threshold is met.

¹²⁴⁸ Ofcom Consultation: Promoting investment and competition in fibre network, Approach to geographic markets, published 11 December 2018

A.1.5.8 Geographic Market Definition - Boundary Issues

A1.302 This section examines various issues raised by Respondents in relation to the geographic market definition analysis which ComReg believes are most suitably captured under the broad heading of boundary issues. These relate to an issue raised by Eircom in respect of the operation of the Tera Algorithm in regard to the order of consideration of supply and demand side observations. It also addresses claimed contiguity issues regarding the boundary of Zones A and B raised by Eircom, Vodafone, Verizon and BT.

ComReg's Preliminary View in the 2018 Further Consultation

A1.303 In the 2018 Further Consultation, ComReg had proposed that the first criterion or test for qualification of a SA in its analysis as described in the Tera Algorithm was that it contained or was "touched" by two or more ANs.

A1.304 There are instances where SAs which had only one (or none) ANs traversing them, but were bounded by carriageways through which multiple networks are routed, were so in effect being touched by 2 or more ANs. It is impossible for ComReg to discern where exactly in the boundary roadway these network are routed given the accuracy of SP mapping information (as displayed in Figure 75 above). The assumption was made by ComReg in its analysis supporting the 2018 Further Consultation that ANs routed along the border between 2 SAs could be used to access premises on either side of the network i.e. within both neighbouring SAs. ComReg's view on the matter was confirmed in its response to queries from Eircom and BT in ComReg's WHQA Clarifications Document. This assessment applies equally to WPZs.

Respondents' Views on Boundary Issues

Boundary issue - supply and demand analysis

- A1.305 Eircom maintained that the sequencing of the application of the 2018 Tera Algorithm was incorrect as in the first instance, ComReg should have considered if the demand criterion (that the SA contained Connected Premises) was met prior to ascertaining if a SA had two or more ANs located in/at it¹²⁴⁹. It stated that demand-side observations and effects should have been considered before supply side effects. Thus, it could occur that an SA which is not touched by 2 or more ANs but contains Connected Premises locations which are connected to ANs routed through an adjacent SA and so are erroneously excluded from further analysis at the first step of the 2018 Tera Algorithm. Hence, Eircom maintained that each SA should instead have been tested initially for the presence of Connected Premises and then subsequently for the proximity of these premises to ANs, irrespective of in which SAs ANs were present.
- A1.306 Eircom claimed that the outcome of the proposed sequencing of the criteria in the 2018 Tera Algorithm would be to cause SAs which could potentially satisfy Criteria 2a and 2b¹²⁵⁰ to incorrectly fall out of the analysis at the test of the first criteria¹²⁵¹. In essence, previously designated "empty" SAs (which could have one or no ANs intersecting or even touching them) but which contained connected premises should have been subject to further analysis. Hence, it raised the possibility that some of such SAs could have been erroneously allocated to Zone B instead of Zone A.

¹²⁴⁹ Eircom Submission, paragraph 40.

¹²⁵⁰ Refer to explanation of the Tera Algorithm paragraphs A1.106 to A1.108 above.

¹²⁵¹ Eircom Submission paragraph 41.

Contiguity issues

Business Parks

- A1.307 Eircom also raised an issue whereby some business parks were split between adjacent Zone A and B SAs. These included Rosemount Business Park and industrial estates in west and north Dublin some of which are bordered by Zone A categorised industrial areas. Hence it claimed, Zone A and Zone B areas were not contiguous and therefore, confusing¹²⁵².
- A1.308 BT offered the example of Citywest Business Park where it expressed surprise that it had been split between Zone A and B¹²⁵³.

Small Islands of high and low density

- A1.309 Eircom offered further examples of locations and areas which were within Zone B but were bounded by Zone A and which it considered should have been encompassed within Zone A¹²⁵⁴. It similarly listed sites which included Hueston Station in Dublin and 16 large hospitals located around the country which are either in or split by Zone B. Eircom claimed that many of these sites are passed by at least 2 ANs and should all therefore, be in Zone A.
- A1.310 Verizon observed that different sides of the same street were in different SAs in some instances and also different Zones¹²⁵⁵. It maintained that this contiguity issue would cause problems for SPs.

Premises and buildings

- A1.311 Vodafone highlighted the issue of how to define whether or not the Zone B SMP obligations apply to Eircom in the scenario where a customer's premises straddled Zone A and Zone B¹²⁵⁶.

¹²⁵² Eircom Submission, paragraphs 45, 46, 47 & 48.

¹²⁵³ BT Notes on follow-up meeting of 21 June 2018.

¹²⁵⁴ Eircom Submission, paragraphs 42, 43 & 44.

¹²⁵⁵ Verizon Submission, page 3.

¹²⁵⁶ Vodafone Submission, page 11.

ComReg's Assessment of Respondents' Views

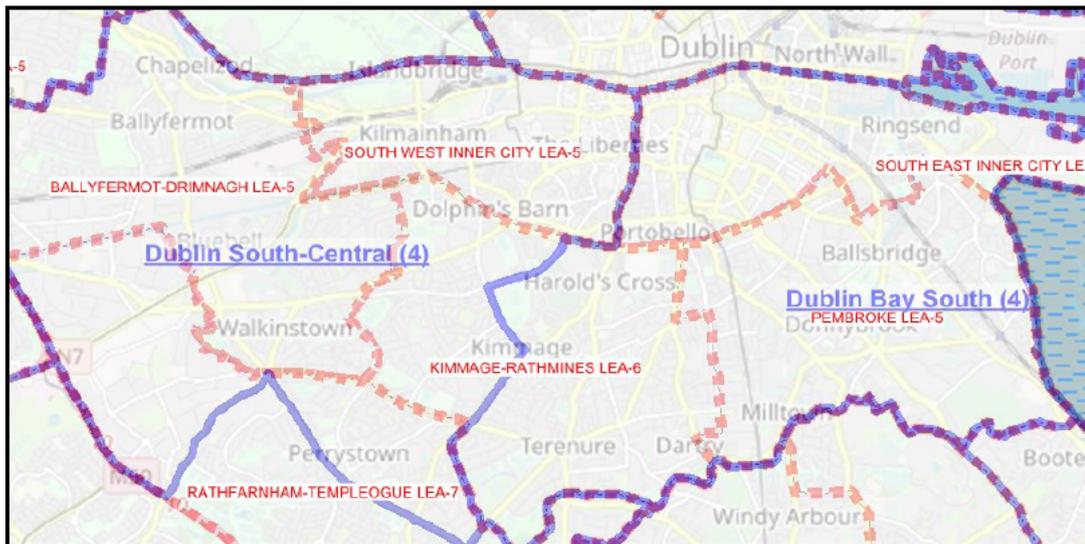
General comments

- A1.312 In response to the contiguity issues raised by Respondents above, ComReg's opinion is that a geographic boundary of any type must be definite and set. A boundary must be fixed to fulfil its primary intended purpose and be sufficiently durable to remain relevant for a required period of use. Some boundary issues are unavoidable irrespective of the chosen geographical unit even where the units and sub-units have been specifically designed for an intended purpose.
- A1.313 This applies to any such unit including, for instance, electoral areas which typically, are formed by the aggregation of smaller geographic units of population. For example, SAs are, aggregated to form Electoral Districts ('ED's')¹²⁵⁷, which in turn form LEAs¹²⁵⁸, which generally constitute Local Authority Areas ('LAAs') and Constituency boundaries for general election purposes. However, this usual "Russian dolls" arrangement of sequencing of electoral boundaries are breached in some instances. An example of this is where Local Electoral Area ('LEA') of Kimmage–Rathmines has been split by the Dáil Éireann constituency boundary of Dublin South-Central and Dublin Bay-South as shown in Figure 84 below. There are other examples of such anomalies provided on the CSO website where local electoral areas are split by county boundaries

¹²⁵⁷ Electoral Divisions (EDs) are the smallest legally defined administrative areas in the State for which Small Area Population Statistics (SAPS) are published from the Census. http://census.cso.ie/censusasp/saps/boundaries/eds_bound.htm

¹²⁵⁸ Each city and county are divided into Local Electoral Areas described on the CSO website <https://www.cso.ie/en/releasesandpublications/ep/p-cp2tc/cp2pdm/bgn/>

Figure 84: Kimmage-Rathmines LEA



Source: CSO

A1.314 This example serves to demonstrate that a chosen boundary cannot cater for every possible requirement. ComReg considers it is reasonable to expect that a boundary may, in some instances bisect streets (placing different sides of a roadway in different areas). The boundary maps for the overall Zones A and B have been made publicly available with this decision and stakeholders can interrogate addresses to confirm whether regulation applies or not. The search tool which is integral to the maps published in the course of this consultative process and illustrated in Figure 80 and Figure 81 above, is available to all stakeholders. Contrarily, it is unfeasible for ComReg to attempt to adjust the CSO WPZs (or SAs) boundaries to take into account the scenarios raised as these units are designed independently and are not a ComReg construct, which in ComReg's view is also a wholly positive characteristic supportive of their use.

Boundary issue - supply and demand analysis

A1.315 BT had queried¹²⁵⁹ how the algorithm treated SAs which were bounded by rather than intersected by 2 or more ANs as laid out in ComReg's Clarifications' Document. It sought clarification of whether or not such SA passed the first test in the algorithm and were then subjected to either of the subsequent connected premises or organisations tests. ComReg confirmed within its response in its WHQA Clarifications Document that this was the case and that any SAs touched by 2 or more ANs passed this first test.

¹²⁵⁹ BT Query 9 in WHQA Clarifications Document.

A1.316 ComReg accepts Eircom's point in the paragraphs above regarding the sequencing of the 2018 Tera Algorithm. The scenario described by Eircom has been found to be correct, whereby connected premises that are in a geographic unit that itself contains insufficient ANs but nevertheless, satisfies the 75% and distance criteria by virtue of how close the ANs are in adjacent geographic units. ComReg has also compared the results obtained having made this change (all other criteria remaining the same) to those applied previously and the difference in the number of SAs changing designation between zones was negligible with only 4 additional SAs being incorporated for further analysis. However, ComReg considers that this change was warranted as it is the correct approach and allows for a more accurate application of the algorithm.

Contiguity issues - Business Parks

A1.317 ComReg specifically investigated the categorisation of business parks between Zone A and B in response to the comments received from BT and Eircom on this issue. ComReg notes that in order to better reflect the requirements of the analysis of the business oriented market of HQA, the geographic unit of choice has been changed to use the WPZ as discussed in detail in section A.1.5.4 above. This geographic unit is smaller than SAs in areas of high concentration of businesses and corresponding demand by design. Additionally, the shortening of the distance criterion to 50 metres¹²⁶⁰ and removal of the forecast Organisations calculations¹²⁶¹ has given rise to other complications, including in business parks. This problem manifested as areas of high concentration of AN infrastructure and demand being incorrectly categorised as being areas of low density AN due to the smaller size of the WPZ and reduced distance criterion. It was also exacerbated by gaps in SP connected premises data and is illustrated by the example of Clonshaugh Business Park, shown in Figure 85 below. The problem is further intensified by the nature of the build of many business parks where premises are built further away from the roadway and each other, often separated with expanses of green areas.

¹²⁶⁰ See section A.1.5.5 above.

¹²⁶¹ See section A.1.5.2 above.

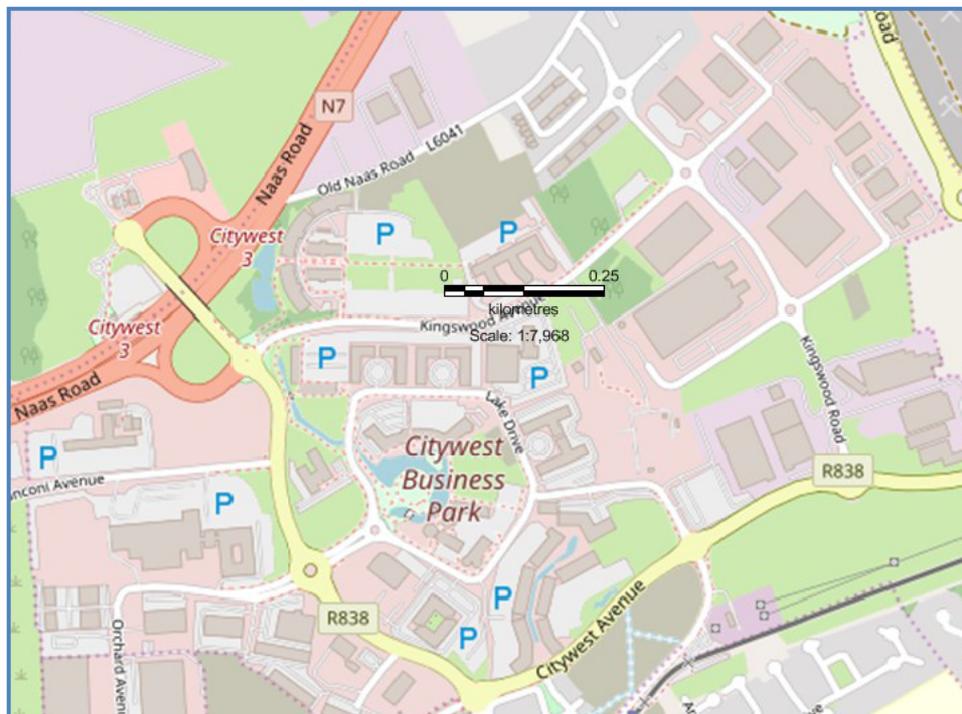
- A1.318 Clonshaugh Business Park serves as a good example for where the algorithm was too exacting for the actual distances involved and the problem was amplified by errors in SP data. This park is the most concentrated area in the entire country in respect of AN infrastructure and associated data centres and PoPs, many of which are also used to provide services to customers. The “white” (i.e. low density) WPZs in Clonshaugh Business Park were found to have failed the algorithm tests despite this park having upwards of 12 ANs present and containing many SPs’ PoP and data centres.
- A1.319 This issue arose for two reasons. There were gaps in SP data where service share data (i.e. MI WHQA circuit addresses) which were shown to be connected to buildings and premises in this park did not appear on their SP respective connected premises lists. This can be seen on this map where the network stubs which are connecting to customer premises do not appear on the connected premises list but are listed on the circuit or service share list. A similar issue arose in other busy business parks. It is important to note that it was not feasible to accurately quantify this issue due to the impossibility of matching addresses between the connected premises and service share data as explained in detail in section A.1.5.2 above, where the analysis of the use of current and forecast demand databases is discussed.

Figure 85 Clonshaugh Business Park's WPZs



A1.320 In order to address these somewhat anomalous results, ComReg refined the algorithm. This modification was also adopted to reflect the special case of business parks where the local authority requirement for long notification periods for digs greater than 100 linear metres (and hence 50 radial metres) does not apply. This is demonstrated by the map of Citywest Business Park in Figure 86 below. This shows that the radial distance of 50 metres is too low to cope with the situation where many buildings are located a considerable distance from each other and also may be of some distance from the roadway and where access is obtained on a completely different basis than that on the RMO or DCC rules. In this park for instance, access to ducts to different portions of this park can be purchased or rented from the Business Park custodian, albeit the owner of the management company.

Figure 86: Citywest Business Park



A1.321 In effect, the conditions of supply are slightly different in business parks than that which pertains to public carriageways. ComReg has observed that many of these business parks, (even those containing a low number of connected premises) are areas of increased network concentration. This is especially apparent in those business parks that contain data centres. A data centre is treated as a single connected premises though it may have many SPs connected to it.

A1.322 Therefore, ComReg has treated business and retail parks in the Final Decision as being part of the same geographic market as WPZs where they passed the distance and proportionality tests, (in situations where they were enveloped or intersected by a WPZ which contained at least 1 connected premises), with the additional condition that the business park is intersected or bounded by 2 or more ANs, i.e. they fulfil the Area A1 criteria. This is explained in detail in the discussion on the assessment of the geographic markets in Section 5 of this Decision and in the accompanying 2019 Tera Report¹²⁶².

A1.323 Thus, ComReg has defined Area A1 as a single geographic market for the purposes of WHQA services as detailed in Section 5, concerning the geographic market definition. It is important to note that this is in accordance with both BEREC guidance that geographic markets do not have to be uniformly homogenous:

“In order to group geographical units, there is no need for competitive conditions to be perfectly homogeneous across all geographical areas included within one market. Areas should be aggregated so that competitive conditions within a market are sufficiently homogeneous whereas competitive conditions differ between markets with potential effects on either the SMP finding or the identified competition problems.”¹²⁶³

A1.324 ComReg used an updated list of the business parks which were identified in the 2016 Consultation¹²⁶⁴, for this new step applied in the 2019 Tera Algorithm which is described in the 2019 Tera Report¹²⁶⁵. The updated list of 287 Business Parks which were subject of this test are listed in Appendix 5.4 of the 2019 Tera Report.

¹²⁶² Section 3.2.2 of the 2019 Tera Report.

¹²⁶³ ERG Common Position on Geographic Aspects of Market Analysis (definition and remedies) Document No. BoR (14)73 published 5 June 2014

¹²⁶⁴ Appendix 5 of the 2016 Consultation.

¹²⁶⁵ Section 3.2.2 of 2019 Tera Report.

A1.325 ComReg notes that Ofcom took a similar approach in its June 2019 BCMR statement in relation to different conditions of supply within geographic units of postcode code sectors contained within the larger Central London Area ('**CLA**'). Therein¹²⁶⁶, Ofcom decided to categorise a small number of postcode sectors (23 were BT only and 17 which were BT + 1 AN only) which were touched by or surrounded by 275 high density sectors which were all in the CLA, as a single geographic market.

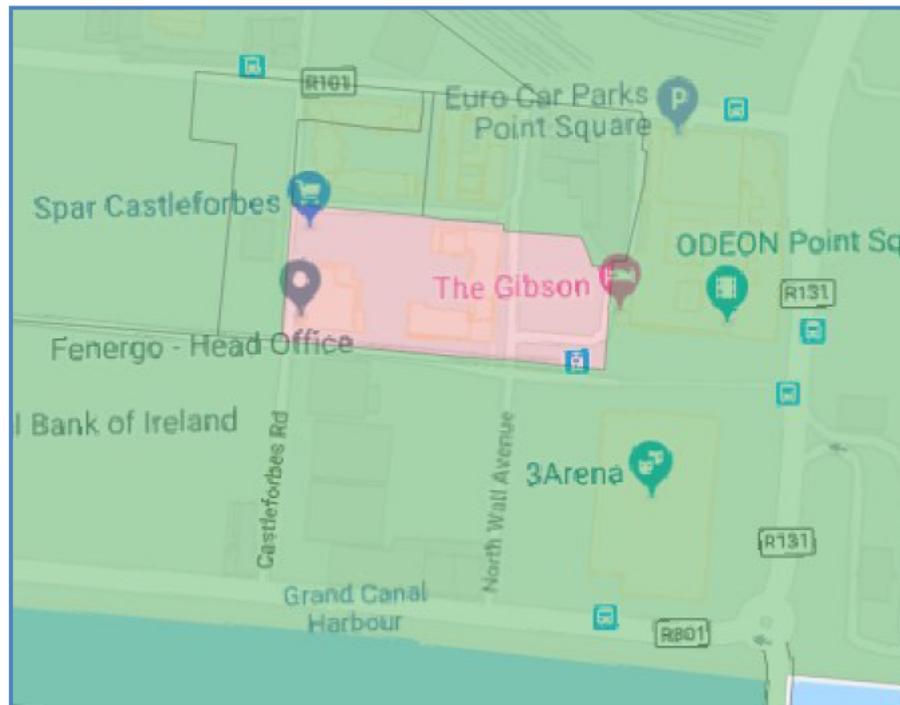
Contiguity issues - Small Islands of low density

A1.326 A similar issue that arose in relation to business parks in the preceding section also arose in respect to of relatively small WPZs were considered part of the Zone B markets even though all surrounding WPZs were part of the Zone A markets. ComReg considered it reasonable that ANs could extend their networks to meet demand in these WPZ. As such, ComReg considers that the conditions of competition in these islands are sufficiently similar to those surrounding them, that they should be considered part of the same geographic market.

A1.327 This is clearly illustrated by Figure 87 below which shows a geographic unit (WPZ) behind the 3 Arena in Dublin which is a typical example of such an occurrence. This WPZ is coloured pink surrounded by high density areas, coloured green. The SP network routes and connected premises locations have been omitted from this map for reasons of confidentiality. Again, the exercise completed by Ofcom in relation to the CLA referred to in paragraph A1.325 above was undertaken to overcome similar such anomalies and contiguity issues in the U.K and ComReg considers that this logic is equally applicable to this circumstance. ComReg has therefore included these "island" areas in the single geographic market area A1.

¹²⁶⁶ Ofcom June 2019 BCMR Statement paragraphs 5.106 to 5.115.

Figure 87: Area close to 3 Arena Dublin



Contiguity issues – buildings and premises

- A1.328 In response to Vodafone’s query regarding the treatment of premises which may straddle¹²⁶⁷ Zones A and B, ComReg makes the following observations.
- A1.329 For the small number of occurrences where a premises may be intersected by a Zone A/Zone B boundary, ComReg’s view is that it is reasonable for regulation to apply in such instances. It is impractical for the effective operation of the market, for SPs to have to raise disputes or revert to arbitration mechanisms or regulatory intervention where this may occur. This would also cause an unacceptable degree of regulatory uncertainty. It also relates to Eircom’s observation (as noted in paragraph A1.242 above) regarding the distance measurement, between a premises to ANs. As confirmed by ComReg in its WHQA Clarifications Document, the measurement can be made either from the entrance or the centre of a building¹²⁶⁸ and is outside the control of ComReg as to the precise location of each building measurement point to which the address is resolved.

¹²⁶⁷ Vodafone Submission, page 12.

¹²⁶⁸ *Ibid.* ComReg response to Eircom query No.5.

A1.330 It is also entirely possible that a building entry point to a Zone B designated premises is situated in Zone A for instance to a building on the corner of a street intersection. The Eircom fibre and building entry point may be via a street that has been allocated into a high density area. The routing of the Eircom duct and cable between its exchanges and any Zone B premises is entirely irrelevant to any remedies which, following the SMP analysis may be applied to Zone B. It is therefore reasonable and pragmatic that regulatory obligations would apply to premises which are touched by Zone B (despite also being partially in Zone A). It is important to note that the WPZ boundaries which are defined by the CSO, an independent body and are not dependent on the network topology of any individual SP.

ComReg's Position on contiguity issues

A1.331 ComReg understands that there may be some difficulty in understanding the specific spatial computations as they apply to each individual WPZ. ComReg has been as transparent as is practically possible without providing the location of connected premises and routing information of AN networks. It should also be stressed as laid out above, that a boundary must fall somewhere and it cannot suit all possible outcomes in all instances. Other than publishing the network maps of each operator with their corresponding connected premises, it would not be feasible to demonstrate the workings of the finer detail of the final 2019 Tera Algorithm as it applied to each geographic unit (now WPZs). This information was provided on a confidential basis by SPs and they would not allow it to be disclosed publicly.

A1.332 ComReg's view that these adjustments described above are likely to be sufficient to ensure that the "contiguity issue" can be effectively addressed in a manner which is both practical and provides regulatory certainty in so far as is practical and reasonable. A search of the final 2019 map published as part of this Decision can be executed by SPs sales or presales staff (or any other interested party) to confirm precisely where an address or premises is situated in relation to any defined geographic markets. This issue was also addressed in the 2018 Further Consultation¹²⁶⁹ where ComReg explained that the identification of competitive conditions at such a granular level ensured that the assessment was robust and outweighed any possible drawbacks of geographic fragmentation of the market.

A1.333 In ComReg's opinion the refinements and adjustments adopted having taken Respondents view and new information into account has improved the accuracy of its assessment.

¹²⁶⁹ See paragraph 4.145 of the 2018 Further Consultation.

A.1.5.9 Trunk-Terminating Boundary of the MI WHQA Markets

ComReg's Preliminary View in the 2018 Further Consultation

- A1.334 In the 2018 Further Consultation, ComReg had referred to the 2016 Oxera Report¹²⁷⁰ that was published with the 2016 Consultation where Oxera had stated that there was insufficient information available at that time to facilitate an analysis of the trunk market based on Eircom's aggregation nodes¹²⁷¹.
- A1.335 However, ComReg noted in the 2018 Further Consultation that it had gathered sufficient information during the intervening period to allow it complete a detailed assessment of the geographic conditions of competition throughout the State¹²⁷². It had obtained the reach of AN networks providing MI WHQA to within circa 100 metres of every non-residential building in the State including the proximity of such networks to Eircom Aggregation Nodes which had allowed it undertake a much more granular assessment of the locations of SPs networks for the purposes of trunk connectivity¹²⁷³.
- A1.336 This analysis also included an assessment of those SPs providing backhaul services to other undertakings and this allowed it ascertain those Eircom Aggregation Node locations where 3 or more providers of on-net MI WHQA are, whether each was already interconnected or were within circa 100 meters of a particular Aggregation Node¹²⁷⁴. 107 such nodes¹²⁷⁵ were identified as Trunk Nodes as listed in Appendix 8 of the 2018 Further Consultation.

¹²⁷⁰ Appendix 1 of the 2016 Consultation.

¹²⁷¹ 2018 Further Consultation, paragraph 4.248.

¹²⁷² *Ibid.*

¹²⁷³ *Ibid.*

¹²⁷⁴ 2018 Further Consultation, paragraph 4.249.

¹²⁷⁵ 2018, Further Consultation paragraph 4.250.

Respondents' views on the Trunk-Terminating Boundary

- A1.337 Vodafone and enet disagreed with ComReg's proposed designation of the trunk-terminating boundary while BT claimed that the previous trunk-terminating boundary established under the current regulation laid out in D06/08 has distorted the "*whole trunk market*"¹²⁷⁶ though it was silent on ComReg's proposal in the 2018 Further Consultation. Other Respondents did not comment on this issue.
- A1.338 Vodafone claimed that ComReg's trunk-terminating analysis had included infrastructure of ANs which were vertically integrated and did not offer backhaul to rival SPs or did so at uncompetitive rates¹²⁷⁷. It also considered that counting enet as 2 SPs for the purposes of trunk competition was inappropriate.¹²⁷⁸ It also claimed that proximity or distance criterion of 100 metres was too large as stated earlier in its Submission¹²⁷⁹ that this does not ensure that an SP can build out in response to a request from a potential customer and furthermore, that establishing colocation facilities in an Eircom exchange was a slow and expensive process.
- A1.339 enet stated that it was opposed to the proposed trunk-terminating definition because it disagreed with ComReg's entire analysis and opined that it was unnecessary for it to revisit the extant regulation which applies to the trunk-terminating boundary established under D06/08.

¹²⁷⁶ BT Submission Part 1, page 2.

¹²⁷⁷ Vodafone Submission, page 2.

¹²⁷⁸ Vodafone Submission, page 8.

¹²⁷⁹ Vodafone Submission, pages 5 & 6.

ComReg's Assessment of Respondents' views on the Trunk-Terminating Boundary

- A1.340 ComReg does not accept Vodafone's claim that the establishing colocation in Eircom exchanges is a high barrier for ANs which may wish to obtain interconnection with Eircom. Firstly, even if these were to be the case, there are different variants of interconnection available which do not require any colocation, namely ISH¹²⁸⁰ and CSH¹²⁸¹. Secondly, ComReg understands that Vodafone has [§< [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]].
- A1.341 In response to Vodafone's point regarding vertically integrated SPs not offering backhaul services to rivals, ComReg analysis of the data obtained via SIRs demonstrates that many SPs are already interconnected with each other and are active in the merchant market as previously laid out in paragraphs A1.195 to A1.198 above. The analysis in the 2018 Further Consultation is in essence an extension of the analysis of the trunk-terminating boundary completed for D06/08 which was based on the presence of 2 ANs. ComReg opinion is that this approach remains valid for such considerations.
- A1.342 ComReg considers that the circa 100 metres distance remains suitable for this specific analysis even though ComReg has reduced the distance criterion used in the 2019 Tera Algorithm to 50 metres¹²⁸². This is because interconnection to an Eircom exchange is achieved at handover chambers which are located in the carriageway outside the exchange. Additionally, many Eircom exchange buildings are stepped-back from the roadway. For these reasons, 50 metres is not a legitimate distance for this analysis.

¹²⁸⁰ In-Span Handover.

¹²⁸¹ Customer Sited Handover.

¹²⁸² See section A.1.5.4 above.

- A1.343 ComReg disagrees with enet's suggestion that it not re-examine the trunk-terminating boundary analysis of D06/08. ComReg also notes that it had conducted consultations to consider adjustments of the list of Urban Centres¹²⁸³ in the 2008 Decision in 2010¹²⁸⁴ and 2013¹²⁸⁵. Because of the time that has elapsed since the 2008 Decision, the developments in the market since then (such as enet having established a backhaul network on the Irish Rail mainline intercity rail network) and that because this Decision is overdue, such a position is untenable.
- A1.344 For these reasons stated above, ComReg maintains that the approach to its analysis of the trunk-terminating boundary in the 2018 Further Consultation remains valid, though with one change. Importantly, the weighting of CMANs as being equivalent to 2 networks has been reduced to 1 in keeping with the updated approach to CMANs as laid out in Section 5 above. This readjusted analysis has resulted in 93 nodes being categorised as Trunk Nodes as listed in Annex 10 of this Decision.

A.1.6 Summary and Assessment of Respondents' Views on Competition Analysis and Assessment of SMP in the WHQA Markets

- A1.345 In Section 5 of the 2018 Further Consultation (and now Section 6 of this Decision) ComReg provided a summary of Respondents' views made to the Consultation; ComReg's assessed those views and outlined an amended preliminary position on the Competition Analysis and Assessment of SMP. This included:
- (a) A summary of the preliminary views set out in Section 6 (Competition Analysis and assessment of SMP in the WHQA Markets) of the Consultation;
 - (b) A summary of Respondents' views to Section 6 (Competition Analysis and assessment of SMP in the WHQA Markets) of the Consultation;

¹²⁸³ Urban Centres were 15 cities and towns which described the Trunk Segment of wholesale leased lines as laid out in Decision No. D06/08, published 22 December 2008.

¹²⁸⁴ ComReg Decision No.D02/10, published 15 February 2010, added Portlaoise to the list of Urban Centres.

¹²⁸⁵ ComReg Decision No. D12/13, published 29 July 2013, added Athlone, Charleville, Mallow and Roscommon to the list of Urban Centres.

- (c) ComReg's Assessment of Respondents' views to Section 6 (Competition Analysis and assessment of SMP in the WHQA Markets) of the Consultation; and
- (d) ComReg's Overall Preliminary Position on the Competition Analysis and Assessment of SMP.

A1.346 In Question 3¹²⁸⁶ of the 2018 Further Consultation ComReg sought any further observations on ComReg's SMP Assessment.

A1.347 Of the 7 Submissions received, 7 Respondents (ALTO, BT, Eircom, enet, Verizon, Vodafone and Zayo) commented on the SMP Assessments in the 2018 Further Consultation.

A.1.6.1 SMP Assessment in the LB TI WHQA Market

Summary of Respondents' Views on the SMP Assessment in the LB TI WHQA Market

A1.348 3 Respondents (BT, enet, and Vodafone), agreed with ComReg's assessment that Eircom has SMP in the LB TI WHQA Market.

A1.349 The remaining 4 Respondents made no comment on this SMP assessment.

ComReg's Assessment of Respondents' views on the SMP Assessment in the LB TI WHQA Market

A1.350 ComReg notes that no Respondents provided any comments which disagreed with the SMP assessment of this market.

A.1.6.2 SMP Assessment in the HB TI WHQA Market

Summary of Respondents' Views on the SMP Assessment in the HB TI WHQA Market

A1.351 Vodafone and BT agreed with ComReg's assessment that no operator has SMP in the HB TI WHQA Market. enet stated that they would not object to this assessment.

¹²⁸⁶ Question 3 on page 231 of the 2018 Further Consultation asked "Do you agree with ComReg's further preliminary conclusions on the assessment of competition within the Relevant WHQA Markets, including the proposed designation of Eircom as having SMP, as appropriate?"

- A1.352 Verizon argued against this assessment. It repeated the view it had expressed in response to the 2016 Consultation that the size of the market did not itself merit deregulation. Verizon felt that customers that had remained in this market despite falling demand for HB TI products would have little desire to leave it now. These customers would therefore have minimal buying power, and be vulnerable to price changes.
- A1.353 The remaining 3 Respondents did not provide comments on this SMP assessment.

ComReg's Assessment of Respondents' views on the SMP Assessment in the HB TI WHQA Market

- A1.354 ComReg disagrees with Verizon's view as summarised in paragraph A1.352 above that Eircom should be designated with SMP in the HB TI WHQA Market. In the 2018 Further Consultation¹²⁸⁷ ComReg noted that, absent regulation,¹²⁸⁸ BT was the largest provider of HB TI WHQA services, with a hypothetical market share of [3< ██████████]¹²⁸⁹ at the end of 2016. More recent information based on SP responses to SIRs and set out in Figure 88 below indicates that BT continues to be the largest supplier of HB TI WHQA products, with a hypothetical market share of [3< ██████████]¹²⁹⁰ at the end of 2018. Eircom's hypothetical market share ([3< ██████████]) is substantially lower than that of BT's¹²⁹¹.

¹²⁸⁷ See paragraphs 6.99 to 6.107 of the 2016 Consultation.

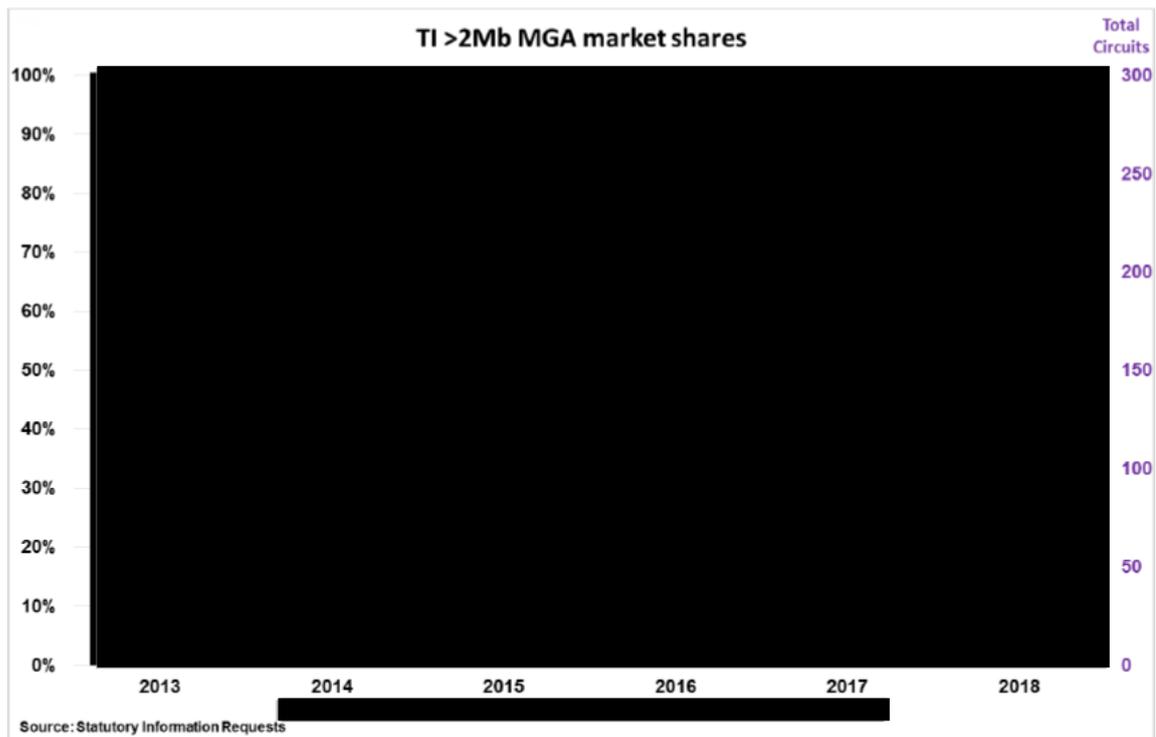
¹²⁸⁸ Hypothetical shares absent regulation refers to the On-net supply at both the retail and wholesale level.

¹²⁸⁹ Between 30% and 40%.

¹²⁹⁰ Between 50% and 60%.

¹²⁹¹ Between 20% and 30%.

Figure 88: MGA Market Shares – HB TI WHQA Market [REDACTED]



A1.355 Apart from this, ComReg remains of the view set out in the 2016 Consultation¹²⁹² that overall market size is a relevant factor when assessing completion in a market. In this regard, ComReg notes that at the end of 2018 there were [REDACTED]¹²⁹³ active HB TI LLs, down from [REDACTED]¹²⁹⁴ at the end of 2015 (a decline of 113 albeit over a small base) and there were only [REDACTED] circuits ordered from Eircom in 2018. Thus, ComReg remains of the view as expressed in the 2016 Consultation¹²⁹⁵ that it is highly questionable whether the HB TI WHQA Market is worthy of monopolisation, as any super normal profits potentially earned through attempted monopolisation are likely to be relatively low¹²⁹⁶.

¹²⁹² See paragraph 6.100 of the 2016 Consultation.

¹²⁹³ The number is less than 150.

¹²⁹⁴ The number was between 200 - 225 in 2015, having fallen from over 275 in 2013.

¹²⁹⁵ See paragraph 6.102 of the 2016 Consultation.

¹²⁹⁶ In this regard, ComReg notes European Commission's comments on this matter. In its comments on Belgian NRA's notification European Commission stated that the definition of small, declining submarkets which contain only the most captive users will inevitably lead to market characteristics which suggest the existence of high entry barriers and SMP. See Commission Decision concerning Case AT/2017/1970: call origination on the public telephone network provided at fixed location in Austria and Case AT/2017/1971: access to the public telephone network provided at fixed location for residential and non-residential users in Austria, Brussels, 6.4.2017 C(2017) 2431 final.

- A1.356 Having regard to the analysis in the 2016 Consultation and the consideration of Respondents' views, it is ComReg's position that no SP is likely to have SMP and that continued regulation of this market is no longer justified or proportionate.
- A1.357 ComReg acknowledges the potential for some degree of disruption to End Users that the removal of regulation in the HB TI WHQA Market might cause. To mitigate any effects of this, a sunset period for the withdrawal of regulation from the HB TI WHQA Market was discussed in the 2016 Consultation¹²⁹⁷ and is further considered in Section 11 of this Decision document. A sunset period is being specified in order to allow Eircom's wholesale customers sufficient time to seek out alternative arrangements for the supply of HB TI WHQA products (should they decide to change supplier), whilst maintaining service continuity, thus ultimately minimising any impact of the de-regulation of the HB TI WHQA Market on SPs and ultimately End Users.¹²⁹⁸

A.1.6.3 SMP Assessment in the Zone A MI WHQA Market

Summary of Respondents' Views on the SMP Assessment in the Zone A MI WHQA Market

- A1.358 4 Respondents (BT, enet, Vodafone, and Zayo) commented on the SMP assessment of this market. All 4 disagreed with ComReg's view that no SP holds SMP in the Zone A MI WHQA Market.
- A1.359 The 4 Respondents' comments on the SMP assessment are summarised below. Responses to this SMP assessment also raised concerns about WHQA pricing and the Geographic assessment of the MI WHQA Markets. These arguments are summarised and responded to in Sections A.1.9 and A.1.5 respectively.
- A1.360 The remaining 3 Respondents made no comment on this SMP assessment.

Alternative WHQA Providers

- A1.361 3 Respondents (BT, enet, and Vodafone) said that alternative network operators within Zone A SAs do not provide a sufficient constraint on Eircom for these SAs to be considered effectively competitive.

¹²⁹⁷ See Section 9 of the 2016 Consultation.

¹²⁹⁸ See Section 11 for more details.

- A1.362 BT pointed to the service shares and Herfindahl-Hirschman Index (HHI) of the WHQA market as evidence that the WHQA market in Zone A is not effectively competitive. BT considered a number of smaller operators in the market to be essentially niche operators who are not capable of, or interested in, serving all premises/organisations with MI LL services. In BT's opinion these niche operators should be excluded from the SMP Assessment.
- A1.363 BT also argue that technical and commercial considerations curtail wholesaling activity between alternative operators.
- A1.364 enet also noted this effect of commercial considerations, commenting that alternative operators often refuse to provide access to their network, particularly when the access holding SP is also bidding to supply retail LL services to an End User.
- A1.365 Vodafone had concerns that alternative operators may be incentivised to either charge very high prices for access or deny it completely, thus creating higher costs in the market. Vodafone added that it has experience of this happening.

Presence of enet in small areas

- A1.366 3 Respondents (ALTO, BT and Zayo) raised concerns over what is referred to as the "double counting" of enet. This refers to ComReg's preliminary position that the presence of a CMAN in a SA places the same competitive constraint on Eircom as two other alternative networks.
- A1.367 ALTO stated its concern that this treatment of enet's presence distorts the market analysis.
- A1.368 BT said that it has considerable experience of enet access solutions not being commercially available. BT further added that a significant proportion of enet's network is not sub-ducted, and therefore cannot be accessed.

Parameters of Effective Competition

- A1.369 3 Respondents (BT, Vodafone, and Zayo) argued that the requirements for a SA to be considered effectively competitive are too easily met. All 3 felt that ComReg did not give due consideration to the cost, timeframe, and logistical difficulties associated with digging up to 100m in order to expand a network.
- A1.370 BT gave a detailed response on this issue. It first pointed to the 20m width given to each wired network component to compensate for possible inaccuracy in location data. It argued that this assumed cable width could inflate the number of effectively competitive SAs by up to 600.

- A1.371 Secondly, BT argued that digs do not occur in straight lines, particularly in the SAs with a greater density of buildings and infrastructure which are more likely to be considered effectively competitive and placed within Zone A. As a result of this, a radial dig distance of 100m translates to an average actual dig distance of 149 metres.
- A1.372 BT concluded their argument on this issue by stating that ComReg did not adequately account for the time taken to prepare for a new network build. BT say that once this time is accounted for, it becomes quicker and cheaper for BT to pay for access to the Eircom network.

Incentives for Investment

- A1.373 2 Respondents (ALTO and BT) said that it is uneconomic for them to expand their network in a deregulated market.
- A1.374 BT said that the totality of costs associated with network expansion must be considered, including Civil Infrastructure costs such as wayleave and dig costs, interconnection costs, and other costs of supply including core network.
- A1.375 BT also complained that it is not viable to purchase individual dark fibres to expand their network. This was put down to the per unit costing of dark fibres not reflecting marginal costs.
- A1.376 Zayo felt that ComReg did not pay sufficient attention to the harm to effective competition which could result from eircom deterring rival operators from investing in infrastructure. Zayo argued that eircom has incentive to limit rival infrastructural investment. Consequently, the non-designation of SMP in Zone A would allow eircom to deter such investment through exclusionary pricing at both the retail and wholesale levels.

Access to Infrastructure

- A1.377 3 Respondents (BT, Vodafone, and Zayo) complained that the duct and pole access offered by Eircom does not limit the cost to alternative operators of building rival infrastructure. BT said that the SLAs of the Duct and Pole Offering are not appropriate for the requirement of the MI WHQA Market, while Vodafone and Zayo said that Duct and Pole should be strengthened to encourage greater infrastructural competition between operators.
- A1.378 Vodafone felt that ComReg should compare eircom's performance in providing Duct and Pole access to other providers to its facilitation of its own network builds. They said that Eircom's treatment of infrastructural access seekers should be consistent with its own build performance.
- A1.379 BT also said that enet had refused them access to their lead-ins for duct access to the MANs.

Ubiquitous Incumbent Network

- A1.380 2 Respondents (BT and Vodafone) contended that Eircom's ubiquitous duct access network gives it an advantage in reaching End Users.
- A1.381 Vodafone said that Eircom can potentially reach up to 100% of customers with its network, while no other SP can reach more than 40% of customers on their own network.

Other

- A1.382 BT stated its concern that TI and Broadband services have been treated as mirror images in the indirect constraints issue.

ComReg's Assessment of Respondents' Views on the SMP Assessment in the Zone A MI WHQA Market

Alternative WHQA Providers

- A1.383 ComReg disagrees with BT's assertion, summarised in paragraph A1.78, that the service shares of smaller operators are in themselves enough to conclude that Eircom has SMP in this market. While the spread of market shares may be enough for the presence of market power to be considered, other factors should be considered in the final assessment. As highlighted in Table 19 of the 2019 Tera Report, all of Eircom's main competitors in the MI WHQA Markets can together reach over 90% of the market with their own wired networks. Although the reach of each individual alternative operator's network is not as great, other SPs can still purchase MI WHQA services over a wide area, absent Eircom.
- A1.384 In paragraphs A1.79 to A1.81 BT, enet, and Vodafone argue that technical and commercial barriers decrease the trading of MI WHQA services between alternative operators. ComReg does not agree that this is a sufficient constraint to competition for Eircom to be designated as having SMP in this market. As noted earlier in this Annex 1¹²⁹⁹, ComReg notes that the evidence suggests that SPs are trading with each other in the purchase of MI WHQA Services. ComReg notes that [§< █████]¹³⁰⁰ of MI HQA services provided by alternative SPs relied on MI WHQA inputs from Eircom.

¹²⁹⁹ See paragraphs A1.197 to A1.198 in Annex 1 of this Decision.

¹³⁰⁰ Between 20% and 30%.

Presence of enet in Small Areas

- A1.385 ComReg notes Respondents views regarding the treatment of enet. ComReg has addressed this issue in Section 5 of this Decision in the context of the definition of the Relevant MI WHQA Markets¹³⁰¹.

Parameters of Effective Competition

- A1.386 In response to BT's arguments summarised above, ComReg firstly does not agree that the assumed 20m network width has an unduly significant effect on the number of SAs then designated as effectively competitive. However, ComReg accepts BT's point that a radial 'crow flies' distance between a SP's network and a customer premises of 100m may in many instances, translate to a far longer actual 'dog walks' dig distance. For this reason, among others summarised in this Decision¹³⁰², ComReg has decided to reduce the radial distance parameter for effective competition from 100m to 50m.

Incentives for Investment

- A1.387 ComReg must take a forward looking view of competition and any barriers to entry or expansion in its SMP assessment. It considers that, having regard to the presence of at least 3 networks within 50m of Connected Premises, the prospects for competition in the Zone A MI WHQA Markets are favourable. ComReg notes that as the roll-out of the SIRO network advances, the Zone A MI WHQA Markets should, to the extent it can be can be utilised to provide MI WHQA LLs, further strengthen the presence of increased independent infrastructure based competition within this market.

Access to Infrastructure

- A1.388 ComReg notes that Eircom is subject to certain obligations in the WLA Market to provide access to SPs to CEI products. To the extent that SPs consider that the Eircom Duct and Pole offering requires, for example, additional SLAs, it is open to Access Seekers to request this from Eircom who must then consider it in line with its SMP obligations in that market. However, ComReg's assessment of SMP in the MI WHQA Markets has taken into account to the current extremely low uptake of Eircom's Duct and Pole offers.

¹³⁰¹ See paragraph 5.286 onwards in this Decision.

¹³⁰² See Annex 1, Section A.1.5.7 and Section 5, paragraph 5.305.

Ubiquitous Incumbent Network

A1.389 In response to BT and Vodafone's arguments summarised above, ComReg points to its argument given in paragraphs A1.383 to A1.390 above. ComReg considers that the combined reach of alternative networks, (combined with the other factors considered such as market shares) is likely to exert a sufficient competitive constraint on Eircom within the Area 1 MI WHQA Market and Area 3 MI WHQA Market.

Other issues

A1.390 ComReg was unsure of what BT are referring to when stating that TI and Broadband services have been treated as mirror images in the indirect constraints issue. As such, ComReg has no response on this issue.

A.1.6.4 SMP Assessment in the Zone B MI WHQA Market

Respondents' Views on the SMP Assessment in the Zone B MI WHQA Market

A1.391 4 Respondents (BT, eircom, enet, and Vodafone) commented on the SMP assessment of this market. Of these, 3 (BT, enet, and Vodafone) agreed with ComReg's assessment while Eircom disagreed.

A1.392 Eircom considered that ComReg did not conduct its SSNIP test in the correct manner. As a result, it stated that:

"ComReg has failed to accurately categorise the level of indirect constraint that wireless leased lines may provide in terms of the wholesale MI WHQA Markets."¹³⁰³

ComReg's Assessment of Respondents' Views on the SMP Assessment in the Zone B MI WHQA Market

A1.393 ComReg does not agree with Eircom's views that wireless LL are a significant indirect constraint in the Zone B MI WHQA. ComReg's consideration of wireless as a possible external constraint in the MI WHQA Markets can be found in Section 5. However, it important to note that ComReg does not consider them to be a direct constraint as they are not part of the product market.

¹³⁰³ Eircom Submission, paragraph 53.

A.1.7 Summary and Assessment of Respondents' Views on Competition Problems in the Low Bandwidth TI WHQA Market and Impacts on Competition and Consumers

A.1.7.1 Overview

A1.394 In Section 6 of the 2018 Further Consultation (and now Section 7 of this Decision) ComReg provided a summary of 2016 Respondents' views, assessed those views and set out its updated preliminary position on competition problems which are likely to arise in the LB TI WHQA Market (and related markets), absent regulation. This included:

- (a) a summary of the preliminary views set out in Section 7 (Competition Problems in the Low Bandwidth TI WHQA Market and Impacts on Competition and Consumers) of the Consultation;
- (b) a summary of Respondents views to Section 7 (Competition Problems in the Low Bandwidth TI WHQA Market and Impacts on Competition and Consumers) of the Consultation;
- (c) ComReg's Assessment of Respondents views to Section 7 (Competition Problems in the Low Bandwidth TI WHQA Market and Impacts on Competition and Consumers) of the Consultation; and
- (d) ComReg's Overall Preliminary Position on Competition Problems in the LB TI WHQA Market.

A1.395 In Question 4¹³⁰⁴ of the 2018 Further Consultation ComReg sought any further observations on ComReg's SMP Assessment.

A1.396 Five (ALTO, BT, Eircom, enet, and Vodafone) of the seven Respondents to the 2018 Further Consultation commented on ComReg's assessment of competition problems in the LB TI WHQA Market. Of these five Respondents, four agreed (ALTO, BT, enet and Vodafone) with ComReg's preliminary views, while 1 Respondent (Eircom) disagreed.

A1.397 In Section A.1.7.2 below ComReg summarises Respondents' views, before then assessing them in Section A.1.7.3.

¹³⁰⁴ Question 4 on page 235 of the 2018 Further Consultation asked "Do you have any further observations on this Section 6 concerning competition problems in the LB TI WHQA Market?"

A.1.7.2 Respondents' Views on Competition problems in the LB TI WHQA Market

- A1.398 ALTO and BT both agreed with ComReg's assessment and noted that Eircom's repair performance for products in this market had deteriorated, with this being suggested evidence of the competition problem of poor service performance.
- A1.399 enet agreed with ComReg's analysis and preliminary conclusions on this issue but did not make further observations.
- A1.400 Vodafone agreed with ComReg's assessment noting in particular the concerns raised in with respect to the impact of deregulation of the Zone A MI WHQA Markets and the potential leveraging behaviours that could occur absent appropriate regulation. Vodafone remained unconvinced that the proposed remedies would be sufficient of themselves to prevent these problems occurring.
- A1.401 Eircom maintained its view that, while there remains an installed base of TI LL services, in a declining market such as the LB TI WHQA market, it considered that vertical leveraging concerns in relation to downstream and adjacent markets, as well as foreclosure concerns, are unlikely to arise. However, Eircom nonetheless welcomed the recognition by ComReg that the risks it foresees in relation to this market will lessen over time and that it therefore takes account of this in the context of the nature of the remedies that it intends to impose in the LB TI WHQA Market.
- A1.402 Eircom also expressed the view that TI LLs are outdated in terms of the bandwidth they deliver and are not considered cost effective business transmission solutions. It noted they are retained largely due to customer inertia and because customers are not ready to update internal networks and customer premises equipment ('CPE'). Over time Eircom expected to see more customers making the decision to migrate away from such legacy services.

A.1.7.3 ComReg's Assessment of Respondents' Views on Competition problems in the LB TI WHQA Market

- A1.403 ComReg notes that Respondents, other than Eircom, generally agreed with ComReg's assessment of competition problems in the LB TI WHQA Market.

- A1.404 ComReg does not agree that competition problems associated with vertical and/or horizontal leveraging behaviour are of no relevance in the LB TI WHQA Market. ComReg does, however, recognise that over time, as End Users migrate off these services, such concerns will diminish. However, as noted by Eircom, customer inertia, along with the need for customers to upgrade internal networks as part of any migration to MI LLs, suggests that these concerns will likely remain during the period of this market review. ComReg will however, continue to monitor the situation and will revisit its position on remedies, as appropriate. Indeed, as noted earlier in Section 11 of this Decision, ComReg has decided to remove a number of remedies that, to date, required Eircom to provide access to a range of legacy TI WHQA products.
- A1.405 ComReg has also acknowledged in Section 7 of this Decision that competition problems related to potential delay or deterrence of investment incentives is of lesser relevance in the LB TI WHQA Market where LL products are largely based on legacy technologies and new entry is unlikely¹³⁰⁵.
- A1.406 ComReg remains of the view that Eircom, as the Undertaking designated with SMP in the LB TI WHQA Market, would have an ability and incentive to engage in excessive/exploitative pricing of LB TI WHQA products or price based vertical leveraging behaviour, because Eircom's presence in the LB TI WHQA Market is characterised by a high market share, an absence of existing effective competition, high and non-transitory barriers to entry associated with control over infrastructure not easily replicated, limited scope for potential competition and insufficient CBP. Thus, there is insufficient pressure to constrain Eircom from engaging in excessive/exploitative pricing of LB TI WHQA products.
- A1.407 ComReg's position on competition problems in the LB TI WHQA Market is set out in Section 7 of this Decision.

¹³⁰⁵ See paragraph 7.16 of this Decision.

A.1.8 Summary and Assessment of Respondents' Views on Proposed Remedies in the Low Bandwidth ('LB') TI WHQA Market

A1.408 This Section summarises Respondents views on remedies ComReg proposed to impose on Eircom in the LB TI WHQA Market, as set out in paragraphs 7.23 to 7.161 of the 2018 Further Consultation.

A1.409 ComReg's final position on the remedies being imposed upon Eircom in the LB TI WHQA Market is set out in Section 8 of this Decision.

A1.410 In Question 5 of the 2018 Further Consultation ComReg asked the following question:

“Do you have any further observations on this Section 7 concerning obligations in the LB TI WHQA Market?”

A.1.8.1 Access Remedies

Overview

A1.411 In the 2018 Further Consultation¹³⁰⁶, ComReg reaffirmed its views on LB TI WHQA Access remedies as set out in the 2016 Consultation¹³⁰⁷.

A1.412 The LB TI WHQA Access remedies to be imposed in this Decision are summarised in paragraphs 8.63 to 8.80 in Section 8 above. In reaching its decision on the imposition of these obligations, ComReg has summarised Respondents views (according to the themes summarised in paragraph A1.418 below) and carried out an assessment of Respondents' views.

A1.413 Of the seven Respondents to the 2018 Further Consultation, six expressed views on issues relating to the proposed access remedies as set out in the 2018 Further Consultation (namely ALTO, BT, Eircom, enet, Verizon and Vodafone).

A1.414 Two Respondents (enet and Vodafone) agreed with ComReg's proposal for Access remedies in the LB TI WHQA Access market. enet stated that ComReg's proposed list of remedies were reasonable and proportionate in light of the competition problems ComReg had identified. Vodafone agreed with ComReg's assessment with respect to the LB TI WHQA Market.

¹³⁰⁶ Paragraphs 7.50 to 7.52 of the 2018 Further Consultation.

¹³⁰⁷ Paragraphs 8.36 to 8.93 of the 2016 Consultation.

- A1.415 Two Respondents (Eircom and Verizon) broadly agreed with ComReg's proposal for Access remedies in the LB TI WHQA Market.
- A1.416 Two Respondents (ALTO, BT) broadly agreed with ComReg's proposal for Access remedies in the LB TI WHQA Access market. However, they disagreed with certain aspects of ComReg's proposal.
- A1.417 Zayo did not express any views.
- A1.418 Respondents' views on the proposed access remedies are grouped into the themes identified below:
- (a) High Level Feedback (summarised in paragraphs A1.419 to A1.422 below);
 - (b) Channelised E1 (2Mb/s) LLs should not be deregulated (summarised in paragraphs A1.427 to A1.430 below);
 - (c) Obligation to negotiate in good faith should mirror the obligation in the MI WHQA Markets (summarised in paragraphs A1.433 to A1.435 below);
 - (d) Retirement of Legacy Services process to be transparent (summarised in paragraphs A1.438 to A1.440 below);
 - (e) Requirements governing fairness, reasonableness and timeliness of Access should mirror the obligation in the MI WHQA Markets (summarised in paragraphs A1.446 to A1.448 below); and
 - (f) Interconnect Regulation (summarised in paragraph A1.451 below).

High Level Feedback

Respondents' Views

- A1.419 Three Respondents (ALTO, BT and Eircom) provided high level feedback on the proposed access remedies set out in the 2018 Further Consultation.

- A1.420 Eircom stated that, contrary to the view expressed by ComReg at paragraph 7.26 of the 2018 Further Consultation¹³⁰⁸, Eircom did not actually disagree¹³⁰⁹ with the access remedies as proposed in the 2016 Consultation.
- A1.421 ALTO agreed with the access obligations proposed.
- A1.422 ALTO noted¹³¹⁰ that all the proposed regulatory remedies should be fit-for-purpose and updated to reflect modern regulatory standards - similar to remedies proposed in the WLA¹³¹¹ market.

High Level Feedback

ComReg's Assessment of Respondents' Views

- A1.423 ComReg accepts Eircom's statement as noted in paragraph A1.420 above and is happy to correct the record in this regard.
- A1.424 ComReg notes ALTO's views that the regulatory remedies implemented by Eircom must be fit-for-purpose. As per ComReg's assessment set out in the 2018 Further Consultation¹³¹², ComReg's position is that the proposed access remedies are fit-for-purpose
- A1.425 ComReg does not agree with ALTO's views in paragraph A1.422 above. ComReg's position is that the access remedies are fit-for-purpose, proportionate and justified. ComReg note that:
- (a) The LB TI WHQA Market is in steady decline¹³¹³ as End Users migrate to MI WHQA products, albeit slowly;

¹³⁰⁸ Paragraph 7.26 of the 2018 Further Consultation, "4 out of 12 Respondents (ALTO, BT, Eircom and Vodafone) expressed views on ComReg's approach to the imposition of access remedies. As noted above, all such Respondents, save for Eircom, agreed that access remedies should be imposed on Eircom in the LB TI WHQA Market".

¹³⁰⁹ Eircom Submission, paragraph 58.

¹³¹⁰ ALTO Submission, page 6.

¹³¹¹ Market Reviews - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products. [ComReg Document 16/96](#), 11 November 2016.

¹³¹² Paragraph 7.50 of the 2018 Further Consultation.

¹³¹³ See paragraph 3.51 of the 2018 Further Consultation where it was noted that the overall number of TI retail LLs decreased by 1,083 lines in the 12 months to December 2016.

- (b) There is little new demand for LB TI WHQA products¹³¹⁴;
- (c) The LB TI WHQA products, services and facilities are provided largely via legacy Eircom order management systems and processes. The cost and effort in modifying these systems¹³¹⁵ and processes is not justified and could introduce significant additional costs which would need to be recovered in price increases spread over a reducing number of circuits;
- (d) The LB TI WHQA Market is well established and has operated without any significant regulatory issues having been brought to ComReg's attention; and
- (e) In ComReg's view it is inappropriate to draw inferences between the WLA¹³¹⁶ and LB TI markets with respect to remedies due to differences in impact arising from potential competition problems that may occur absent regulation in these markets. ComReg considers that the competition problems identified in the LB TI WHQA Market can therefore be addressed on the basis of EoO.

A1.426 ComReg position is that the EoO non-discrimination standard is appropriate and proportionate in the context of the LB TI WHQA Market.

Channelised E1 (2Mb/s) LLs should not be deregulated

Respondents' Views

A1.427 Two Respondents (ALTO and BT) expressed a view on ComReg's proposal to remove requirements to provide Access to analogue LLs, digital end-to-end WLLs and Channelised E1 (2Mb/s) LLs (as distinct from PPC E1 channelised Links).

A1.428 ALTO¹³¹⁷ and BT¹³¹⁸ agreed with the proposal to remove requirements to provide Access to analogue LLs.

¹³¹⁴ See paragraph A 6.4 (Appendix 6) of the 2018 Further Consultation where ComReg noted that Eircom's supply of LB TI LL in 2016 accounted for [< [REDACTED]] (Between 0% and 10%) of all LL deliveries.

¹³¹⁵ For example, developing existing systems or investing new systems which supports EoI.

¹³¹⁶ Market Reviews - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products. [ComReg Document 16/96](#), 11 November 2016.

¹³¹⁷ ALTO Submission, page 6.

¹³¹⁸ BT Submission Part 1, page 7.

- A1.429 ALTO and BT disagreed with ComReg's proposal to remove requirements to provide Access to Channelised E1 (2Mb/s) LLs. In ALTO's opinion, industry still uses these services regularly. ALTO noted that the data submitted to ComReg for these services may have been incorrect or under-reported. In ALTO's opinion, operators appear to have been asked to omit E1 (2Mb/s) voice circuits when responding to ComReg's Statutory Information Requests ('SIRs').
- A1.430 BT stated that it was not clear to it whether the ComReg data capture worked correctly in this area. BT stated that they use Channelised E1s for voice services and that, on the advice of ComReg, BT did not supply data on these services in response to ComReg's SIRs. Hence, BT stated that it does not agree that the removal of requirements for Eircom to provide Access to Channelised E1 (2Mb/s) LLs was warranted given that (i) BT still use these services, and (ii) BT believe that any data in this area is under-reported/incorrect.

Channelised E1 (2Mb/s) LLs should not be deregulated

ComReg's Assessment of Respondents' Views

- A1.431 Both ALTO and BT appear to have misinterpreted ComReg's proposal regarding the removal of Channelised E1 leased lines service. For clarity, this service presents circuits of bandwidths $N \times 64\text{Kb/s}$ at various customer premises¹³¹⁹ and aggregates these on a 2Mb/s bearer presented to the SP. Both Respondents appear to have conflated this leased line service with that of Primary and Fractional Rate ISDN¹³²⁰ WLR (Wholesale Lines Rental) voice services.
- A1.432 The volume of E1 Channelised LLs in service at the end of 2018 was extremely low (less than 10). ComReg has validated the data it has gathered and compared supplier and purchaser data. Voice services have not been included in any count of leased lines circuits and any voice circuit data which was inadvertently provided by SPs, such as voice interconnection and ISDN were excluded. ComReg is fully confident that its calculations of the volumes of leased lines circuits, and particularly E1 Channelised circuits is accurate.

¹³¹⁹ Such circuits are presented on X.21 or V.35 interfaces at the customer premises. These are International Telecommunication Union defined technical specifications.

¹³²⁰ Integrated Services Digital Network.

Obligation to negotiate in good faith should mirror the obligation in the MI WHQA Markets

Respondents' Views

- A1.433 Two Respondents (ALTO and BT) expressed a view on ComReg's proposed obligation requiring Eircom to negotiate in good faith.
- A1.434 ALTO¹³²¹ and BT¹³²² stated that Eircom's RGM disclosures¹³²³ have discredited this 'to negotiate in good faith' remedy. In their view, Eircom has not acted in good faith in the past as evidenced in Eircom's RGM disclosures. ALTO and BT expressed their disappointment that ComReg included the existing 'negotiate in good faith' remedy for the LB TI WHQA Market whereas ComReg proposed an updated remedy for the MI WHQA. ALTO stated that the 'to negotiate in good faith' remedy in the LB TI WHQA Market must be more onerous.
- A1.435 BT noted that ComReg provided a considerably revised approach to remedies for the Zone B MI WHQA Markets in the 2018 Further Consultation. Hence, in BT's opinion, the 'negotiation in good faith' remedy in the LB TI WHQA Market should be no more or less onerous on Eircom to apply, given that Eircom has to apply a similar remedy in the Zone B MI WHQA Markets. In BT's opinion, ComReg's approach was to apply a lesser remedy for the 'negotiation in good faith' remedy in the LB TI WHQA Market, and hence BT disagreed with this approach.

¹³²¹ ALTO Submission, page 7.

¹³²² BT Submission Part 1, page 8.

¹³²³ Industry Updates on eir's Regulatory Governance Model (RGM) are sometimes referred to by Access Seekers as '**The Styles Reports**'.

Obligation to negotiate in good faith should mirror the obligation in the MI WHQA Markets

ComReg's Assessment of Respondents' Views

- A1.436 ComReg notes ALTO and BT views (paragraphs A1.434 to A1.435 above) that the 'to negotiate in good faith' remedy in the LB TI WHQA market should be the same remedy as that specified in the MI WHQA Markets. ComReg's position is that the 'to negotiate in good faith' remedy in the LB TI WHQA and MI WHQA Markets are identical, albeit the 'to negotiate in good faith' text in the MI WHQA Markets contains non-exhaustive examples where ComReg might draw inferences from Eircom's behaviour and from the adequacy of the processes and controls if investigating an allegation of a failure to negotiate in good faith. Therefore, for the avoidance of doubt ComReg has (in paragraphs 8.87 to 8.88 of this Decision) included these non-exhaustive examples of behaviours that ComReg might draw inferences from, if investigating an allegation of a failure to negotiate in good faith.
- A1.437 Having assessed ALTO and BT views, ComReg has decided to amend the requirement 'to negotiate in good faith' remedy so that it aligns with the 'to negotiate in good faith' remedy in the MI WHQA Markets. The updated remedy is described in paragraphs 8.81 to 8.89 above.

Retirement of Legacy Services process to be transparent

Respondents' Views

- A1.438 One Respondent (Verizon) expressed a view on the retirement of legacy services¹³²⁴ ¹³²⁵.
- A1.439 In Verizon's opinion¹³²⁶, ComReg had proposed a process by which Eircom can request ComReg to allow the retirement of legacy leased lines services in the LB TI WHQA Market during the course of the market review¹³²⁷. Verizon disagreed that the decision to remove the access and other SMP conditions on a regulated service should be conducted bilaterally between ComReg and Eircom on an 'ad hoc' basis.

¹³²⁴ Verizon Submission, paragraphs 21 - 22.

¹³²⁵ For example, products based on TDM technology and legacy Ethernet services such as Wholesale Ethernet Access ('WEA'), Wholesale Dublin Ethernet Access ('WDEA'), and Wholesale Regional Ethernet Access ('WREA').

¹³²⁶ Verizon Submission, paragraphs 21 - 22.

¹³²⁷ Paragraph 7.22 of the 2018 Further Consultation.

A1.440 In Verizon's opinion, such an analysis should be carried out in the course of a full market review including a relevant SMP assessment and a transparent consultation process. Verizon stated that an 'ad hoc' process creates uncertainty in the market for both Access Seekers and End Users, and would erode confidence in the regulatory regime.

Retirement of Legacy Services process to be transparent

ComReg's Assessment of Respondents' Views

A1.441 ComReg does not agree with Verizon's views as outlined in paragraphs A1.439 to A1.440 above.

A1.442 For the avoidance of doubt, ComReg's proposal as set out in paragraph 7.22 of the 2018 Further Consultation, states:

"ComReg acknowledges that over time TI LLs will likely become redundant for many End Users. ComReg will, of course, over the lifetime of this market analysis, consider any proposals from Eircom for the potential retirement of legacy LL services, having regard to the need to minimise Access Seeker and End User disruption".

A1.443 ComReg's proposal will not result in access and/or other SMP conditions on a regulated service being conducted bilaterally between ComReg and Eircom on an 'ad hoc' basis.

A1.444 In January 2017, ComReg published an information note¹³²⁸ on the 'Retirement of Legacy Networks and services'. In this publication ComReg noted that a wide engagement with all relevant stakeholders, including a public consultation, as appropriate, will be required in order to develop an approval process that considers all of the issues and the implications of any request from Eircom for approval for the withdrawal of legacy services.

A1.445 As part of any consultation process ComReg will consider, *inter alia*, the impact on the rest of industry, the impact on End Users including Eircom's universal service obligations and any other relevant matters, including any undue impact on competition. Any consultation will likely include an assessment of the information which needs to accompany any request, the criteria by which any request, by Eircom, to withdraw regulated services and facilities should be evaluated by ComReg and the process, including a communications plan, that should be followed prior to and during the withdrawal, should approval be granted.

¹³²⁸ Retirement of Legacy Networks and services, ComReg 17/05, 19 January 2017.

Requirements governing fairness, reasonableness and timeliness of Access should mirror the obligation in the MI WHQA market

Respondents' Views

- A1.446 Two Respondents (ALTO and BT) expressed a view on ComReg's proposal in paragraphs 9.133 to 9.202 of the 2018 Further Consultation regarding requirements to be imposed on Eircom governing fairness, reasonableness and timeliness of Access:
- A1.447 ALTO welcomed ComReg's approach to SLAs¹³²⁹ and bringing, in its view, SLA obligations into line with current regulatory practice. However, ALTO disagreed with ComReg in the following areas¹³³⁰:
- (a) ALTO's view is that the proposed SLA updates are not fit-for-purpose and that ComReg should adopt terms similar to the SLA remedy proposed as part of the separate WLA/WCA Consultation¹³³¹;
 - (b) ALTO stated that it was unclear why ComReg proposed to add a new SLA category "project" and what impact it will have on standard and non-standard offerings. In ALTO's view, clear definitions are required to avoid services being classified as "non-standard"; and
 - (c) ALTO's view is that SLA obligations such as those proposed for Zone B MI WHQA Markets should be imposed. For example, a requirement that a maximum of six months to conclude SLA negotiations should be imposed otherwise, in ALTO's view, SLAs could take years to negotiate.
- A1.448 BT welcomed ComReg's approach to modernising SLA remedies¹³³². However, BT echoed ALTO's concerns above¹³³³:
- (a) BT's view is that fit-for-purpose SLA obligations such as those which were proposed for imposition on Eircom in the Zone B MI WHQA Markets should also be imposed in the LB TI WHQA Market and that Eircom should have a maximum of six (6) months to conclude SLA negotiations; and

¹³²⁹ ALTO Submission, page 7.

¹³³⁰ ALTO Submission, page 7.

¹³³¹ Market Reviews - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products. [ComReg Document 16/96](#), 11 November 2016 (the '**WLA/WCA Consultation**').

¹³³² BT Submission Part 1, page 8.

¹³³³ BT Submission Part 1, page 8.

- (b) BT's view is that both existing and new customers are entitled to the same service qualities as a service in the peak of its product lifecycle. BT stated that the learning ComReg gained in the development SLA remedy, proposed as part of the WLA/WCA Consultation, should be adopted in the LB TI WHQA Market. In BT's view, this would not impact Eircom development costs.

Requirements governing fairness, reasonableness and timeliness of Access should mirror the obligation in the MI WHQA market

ComReg's Assessment of Respondents' Views

- A1.449 ComReg notes Respondents' views on SLA obligations as summarised in paragraphs A1.446 to A1.448 above.
- A1.450 ComReg does not agree with ALTO's BT's views expressed in paragraphs A1.447 and A1.448 above that SLA obligations such as those proposed for Zone B MI WHQA Markets should be imposed as remedies in the LB TI WHQA Market for the following reasons:
- (a) In ComReg's view it would be disproportionate to impose the same SLA obligations in the LB TI WHQA Market as in the Zone B MI WHQA Markets because the LB TI WHQA Market is in steady decline¹³³⁴ as End Users are migrating to MI WHQA products, albeit slowly;
- (b) ComReg also considers that it is appropriate to impose the minimum set of SLA obligations required to address potential competition problems in the LB TI WHQA Market as those set out in paragraphs 8.98 to 8.113 above.

Interconnect Regulation

Respondents' Views

- A1.451 One Respondent (BT) expressed a view with respect to the regulation of WEILs stating that the proposals from ComReg are *"too vague and maintaining just a price control is not enough"*¹³³⁵.

¹³³⁴ See paragraph 3.51 of the 2018 Further Consultation where it was noted that the overall number of TI retail LLs decreased by 1,083 lines in the 12 months to December 2016.

¹³³⁵ BT Submission Part 1, page 8.

Interconnect Regulation

ComReg's Assessment of Respondents' Views

A1.452 In the 2018 Further Consultation, ComReg did not consult on the deregulation of WEILs in the LB TI WHQA Market. Furthermore, WEILs are currently not applicable as a form of Interconnection in the LB TI WHQA Market.

A.1.8.2 Non-Discrimination Remedies

Overview

A1.453 Five of the seven Respondents expressed views on issues relating to the proposed non-discrimination remedies¹³³⁶ for the LB TI WHQA Market (namely ALTO, BT, enet, Verizon and Vodafone).

A1.454 Three Respondents (enet, Verizon and Vodafone) agreed with ComReg's proposal for non-discrimination remedies in the LB TI WHQA Access market.

A1.455 Two Respondents (ALTO, BT) broadly agreed with ComReg's proposal for non-discrimination remedies in the LB TI WHQA Access market. However, they disagreed with certain aspects of ComReg's proposal.

A1.456 In this Section, Respondents' views are summarised and ComReg sets out its assessment of such views.

Proposed Non-Discrimination Remedies

Respondents' Views

A1.457 BT stated that, in general, it agreed with the access obligations proposed. BT noted¹³³⁷ that all the proposed regulatory remedies should be to the modern regulatory standards and fit-for-purpose.

¹³³⁶ Paragraphs 7.53 to 7.54 of the 2018 Further Consultation.

¹³³⁷ BT Submission Part 1, page 7.

- A1.458 Both ALTO¹³³⁸ and BT¹³³⁹ noted ComReg's claims that it is 'too expensive'¹³⁴⁰ in a declining market to impose stronger regulation. In ALTO's view the RGM disclosures run contrary to ComReg's position.
- A1.459 ALTO¹³⁴¹ and BT¹³⁴² expressed the view that ComReg should have proposed the basic standard of EoI or amended the existing EoO rules.
- A1.460 ALTO's opinion¹³⁴³ is that Eircom's Regulatory Governance Model ('RGM') highlighted serious weaknesses in the existing remedies for non-discrimination with respect to Eircom's wholesale offerings. ALTO noted that ComReg has applied more modern remedies in other markets and the LB TI WHQA Market should be no different.
- A1.461 BT stated that Eircom's RGM highlighted serious weaknesses in the existing remedies for non-discrimination, hence BT argued that these remedies need to be updated in order that they are made fit-for-purpose.
- A1.462 In BT's opinion, the introduction of a compliance statement would cost almost nothing for Eircom to provide if they are compliant, coupled with appropriate remedies for a misleading or incorrect compliance statement.

Proposed Non-Discrimination Remedies

ComReg's Assessment of Respondents' Views

- A1.463 ComReg disagrees with ALTO's and BT's views expressed in paragraphs A1.458 to A1.462 above and that EoI and/or the SoC should be imposed as remedies in the LB TI WHQA Market for the following reasons:

¹³³⁸ ALTO Submission, page 8.

¹³³⁹ BT Submission Part 1, page 8-9.

¹³⁴⁰ Paragraph 7.68 of the 2018 Further Consultation:

"ComReg considered that the EoO non-discrimination standard is appropriate and proportionate in the context of the LB TI WHQA Market, particularly given that the existing provision of LB TI WHQA products, services and facilities is in decline and are provided using legacy Eircom systems and processes. The cost and effort in modifying these systems is not justified and could introduce significant additional costs which would need to be recovered in price increases spread over a reducing number of circuits".

¹³⁴¹ ALTO Submission, page 8.

¹³⁴² BT Submission Part 1, page 8-9.

¹³⁴³ ALTO Submission, page 6.

- (a) The LB TI WHQA Market is in steady decline¹³⁴⁴ as End Users migrate to MI WHQA products, albeit slowly;
- (b) There is little new demand for LB TI WHQA products¹³⁴⁵;
- (c) The LB TI WHQA products, services and facilities are provided largely via legacy Eircom order management systems and processes. The cost and effort in modifying these systems is not justified and could introduce significant additional costs which would need to be recovered in price increases spread over a reducing number of circuits;
- (d) The LB TI WHQA Market is well established and has operated reasonably well without any significant regulatory issues having been brought to ComReg's attention; and
- (e) While the standard of EoI and SoC was proposed as a remedy in the WLA Market¹³⁴⁶, this market is classified as 'mass market' whereas the LB TI WHQA Market is a 'niche' market in a steady decline. Therefore, it is, in ComReg's view, inappropriate to draw inferences between these markets with respect to remedies due to differences in impact arising from potential competition problems that may occur absent regulation in these markets. ComReg considers that the competition problems identified in the LB TI WHQA Market can therefore be proportionately addressed on the basis of an EoO non-discrimination standard.

A1.464 ComReg position is that the EoO non-discrimination standard is appropriate and proportionate in the context of the LB TI WHQA Market.

¹³⁴⁴ See paragraph 3.51 of the 2018 Further Consultation where it was noted that the overall number of TI retail LLs decreased by 1,083 lines in the 12 months to December 2016.

¹³⁴⁵ See paragraph A 6.4 (Appendix 6) of the 2018 Further Consultation where ComReg noted that Eircom's supply of LB TI LL in 2016 accounted for [3< [REDACTED]] (between 0% and 10%) of all LL deliveries.

¹³⁴⁶ Market Reviews - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products. [ComReg Document 16/96](#), 11 November 2016.

A.1.8.3 Transparency Remedies

- A1.465 Six of the seven Respondents to the 2018 Further Consultation expressed views on issues relating to the proposed transparency remedies¹³⁴⁷ for the LB TI WHQA Market (namely ALTO, BT, Eircom, enet, Verizon and Vodafone).
- A1.466 Four such Respondents (Eircom, enet, Verizon and Vodafone) agreed with ComReg's proposed transparency remedies, while two Respondents (ALTO and BT) disagreed. One Respondent (Zayo) did not comment.
- A1.467 In this Section, Respondents' views and ComReg's assessment of Respondents' views with respect to the proposed transparency remedy will be outlined.

Monitoring of KPIs

Respondents' Views

- A1.468 Eircom welcomed¹³⁴⁸ ComReg's confirmation that:

"ComReg will continue to monitor the situation and KPIs will be interpreted having regard to their statistical significance as the market evolves."¹³⁴⁹

Monitoring of KPIs

ComReg's Assessment of Respondents' Views

- A1.469 ComReg notes Eircom's statement regarding ComReg intention to continue to monitor KPIs having regard to their statistical significance as the market evolves.

¹³⁴⁷ Paragraphs 8.140 to 8.195 of this Decision.

¹³⁴⁸ Eircom Submission, paragraph 59.

¹³⁴⁹ Paragraph 7.91 of the 2018 Further Consultation.

Respondents' comments relating to Modern Regulatory Standards

Respondents' Views

- A1.470 ALTO's opinion¹³⁵⁰ is that Eircom's Regulatory Governance Model ('RGM') highlighted serious weaknesses in the existing remedies for transparency with respect to Eircom's wholesale offerings. ALTO noted that ComReg has applied more modern remedies in other markets and the LB TI WHQA Market should be no different.
- A1.471 BT stated¹³⁵¹ that all the proposed regulatory remedies should be to the modern regulatory standards and fit-for-purpose. BT's opinion is that Eircom's RGM highlighted serious weaknesses in the existing remedies for transparency, hence BT argued that these remedies need to be updated in order that they are made fit-for-purpose.

Respondents' comments relating to Modern Regulatory Standards

ComReg's assessment of Respondents' Views

- A1.472 ComReg does not agree with ALTO's and BT's views on the proposed transparency remedies in the LB TI WHQA Market for the following reasons:
- (a) The LB TI WHQA Market is in steady decline¹³⁵² as End Users migrate to MI WHQA products, albeit slowly;
 - (b) There is little new demand for LB TI WHQA products¹³⁵³;
 - (c) The LB TI WHQA Market is well established and has operated reasonably well without any significant regulatory issues having been brought to ComReg's attention; and

¹³⁵⁰ ALTO Submission, page 6.

¹³⁵¹ BT Submission Part 1, page 7.

¹³⁵² See paragraph 3.51 of the 2018 Further Consultation where it was noted that the overall number of TI retail LLs decreased by 1,083 lines in the 12 months to December 2016.

¹³⁵³ See paragraph A 6.4 (Appendix 6) of the 2018 Further Consultation where ComReg noted that Eircom's supply of LB TI LL in 2016 accounted for [3< [REDACTED]] (between 0% and 10%) of all LL deliveries.

- (d) The transparency remedies in the Zone B MI WHQA markets¹³⁵⁴ are different to the transparency remedies being imposed in the LB TI WHQA Market, for justifiable reasons. The MI WHQA Markets is classified as a 'growth market' whereas the LB TI WHQA Market is a 'niche' market in a steady decline. Therefore, it is, in ComReg's view, inappropriate to draw inferences between these markets with respect to remedies due to differences in impact arising from potential competition problems that may occur absent regulation in these markets. ComReg considers that the competition problems identified in the LB TI WHQA Market can therefore be proportionately addressed on the basis of transparency remedies being imposed, as outlined in paragraphs 8.140 to 8.195 in this Decision.

Amendments to proposed obligations

LLRO Price List

- A1.473 ComReg considers that where appropriate, it can be proportionate to impose equivalent obligations in the LB TI WHQA Market where there are documentation and processes that are common to both the LB TI WHQA and Zone B MI WHQA Markets.
- A1.474 As discussed in paragraph A1.887 to A1.891, ComReg has decided to further define the transparency obligation in the Zone B MI WHQA Markets, proposed in the 2018 Further Consultation¹³⁵⁵ for Eircom to publish the LLRO Price List so that effective and historical charges are stated in separate LLRO documents. ComReg considers that this obligation is justified so that effective and historical prices are clearly presented to Access Seekers. In addition, ComReg considers that it is proportionate to impose this obligation in the LB TI WHQA Market as it is a disaggregation of existing information rather than an activity that will require development or be resource intensive. ComReg also considers that such an approach avoids the need for separate LLRO Price Lists to be published for the LB TI WHQA Market and Zone B MI WHQA Markets. ComReg has therefore decided that, in accordance with Regulation 9(4) of the Access Regulations, an obligation shall be imposed on Eircom to state its effective and historical charges in separate LLRO documents.

¹³⁵⁴ Market Reviews - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products. [ComReg Document 16/96](#), 11 November 2016.

¹³⁵⁵ As set out in Section 17.6(iv) of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation.

Sharing of confidential and/or commercial information

- A1.475 ComReg has decided to amend the specific wording of the obligation set out in the 2018 Further Consultation¹³⁵⁶ with respect to requirements governing sharing of confidential and/ or commercial information through a non-disclosure agreement. Having amended the requirements governing sharing of confidential and/ or commercial information through a non-disclosure agreement in the WLA/WCA Decision, ComReg considers that it would be beneficial for Eircom to have a common process with respect to these requirements for the WLA, WCA and LB TI WHQA Markets. In addition, ComReg considers that the amended requirements are less burdensome than the requirements set out in the 2018 Further Consultation¹³⁵⁷. The amended wording is reflected in paragraphs 8.190 to 8.194 above and is more particularly set out in Section 10 of the Decision Instrument contained in Annex 8.
- A1.476 The transparency requirements with respect to facilitating the legitimate sharing of confidential and/or commercial information through a non-disclosure agreement are more particularly set out in Section 10 of the Decision Instrument (Annex 8).

ComReg's position on Transparency Remedies

- A1.477 ComReg position is that the transparency remedies outlined in paragraphs 8.140 to 8.195 in this Decision are appropriate and proportionate in the context of the LB TI WHQA Market.

¹³⁵⁶ As set out in Sections 10.16 to 10.18 of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation.

¹³⁵⁷ As set out in Sections 10.16 to 10.18 of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation.

A.1.8.4 Price Control and Cost Accounting Remedies and Accounting Separation Remedies

Overview

- A1.478 In the 2018 Further Consultation¹³⁵⁸ ComReg reaffirmed its views on the LB TI WHQA price control remedies as set out in the 2016 Consultation.¹³⁵⁹ In this Decision ComReg maintains this position.
- A1.479 The LB TI WHQA price control and cost accounting remedies and accounting separation remedies to be imposed in this Decision are described in Section 8.9 and Section 8.10, respectively. The price control remedies are summarised in paragraphs 8.273 to 8.274. The accounting separation remedies are summarised in paragraphs 8.283 to 8.285.
- A1.480 In reaching its decision on the imposition of these obligations, ComReg has considered the views of Respondents to the 2016 Consultation and the 2018 Further Consultation. The Respondents' views to the 2018 Further Consultation are summarised in paragraphs A1.483 to A1.484 below and ComReg's assessment of these views is set out in paragraphs A1.485 to A1.489.
- A1.481 Of the seven Respondents to the 2018 Further Consultation, six expressed views on the proposed price control and accounting separation remedies as set out in the 2018 Further Consultation for the LB TI WHQA market (namely ALTO, BT, Eircom, enet, Verizon and Vodafone).
- A1.482 Eircom welcomed ComReg's preliminary position of maintaining existing prices for LB TI WHQA services.¹³⁶⁰ BT, ALTO, Vodafone, Verizon and enet agreed with the continuation of the cost orientation obligation in the LB TI WHQA Market. However, BT and ALTO were concerned that Eircom's returns in this market are above the regulated returns. Verizon also agreed with imposing cost orientation but submitted that the existing prices are generally higher than the equivalents in other European countries.

¹³⁵⁸ Paragraphs 7.95 to 7.122 of the 2018 Further Consultation.

¹³⁵⁹ Paragraphs 8.150 to 7.8.257 of the 2016 Consultation.

¹³⁶⁰ Paragraph 5.50 of the 2018 Further Consultation.

Respondents' views

- A1.483 Eircom welcomed ComReg's preliminary position of maintaining existing prices for LB TI WHQA services.¹³⁶¹ Eircom was of the view a safeguard price cap is in the interest of promoting efficient incentives and administrative efficiency. BT, ALTO, Vodafone, Verizon and enet agreed with the continuation of cost orientation obligation in the LB TI WHQA Market. However, BT¹³⁶² and ALTO¹³⁶³ were concerned that Eircom's return on capital in this market, as stated in Eircom's separated accounts,¹³⁶⁴ is above the regulated WACC. BT and ALTO assumed that if Eircom was trading at the WACC level Eircom would seek a price increase. Both these Respondents suggest that this 'over-recovery' is detrimental to competition. Verizon submitted that Eircom's wholesale prices are generally above – and with significant fluctuation - the equivalents in other European countries and supported this view with a comparison of price trends for low speed Ethernet services among selected countries, including Ireland.¹³⁶⁵ Zayo has not expressed any views stating it is not present in the TI WHQA market.
- A1.484 With regards to ComReg's proposal to continue to apply the existing Accounting Separation ('**AS**') obligations, only BT and ALTO made specific submissions. In particular, these Respondents were concerned with the lack of transparency of the Additional Financial Statement ('**AFS**') and Additional Financial Information ('**AFI**') processes and considered that ComReg should publish more information relating to these processes.¹³⁶⁶

¹³⁶¹ Eircom Submission, page 23.

¹³⁶² BT April Submission, page 9.

¹³⁶³ ALTO Submission, page 8.

¹³⁶⁴ <https://www.comreg.ie/media/2018/11/Note1.pdf>.

¹³⁶⁵ Verizon Submission, page 7.

¹³⁶⁶ BT April Submission, page 7; ALTO Submission, page 8.

ComReg's Assessment of Respondents' Views.

- A1.485 ComReg notes the broad agreement among Respondents for the imposition of a price control obligation of cost orientation in the LB TI WHQA market.¹³⁶⁷ In relation to the concerns expressed by BT and ALTO, ComReg is of the view that the appropriate mechanism to set prices and monitor compliance with the obligation is through the use of a BU-LRAIC+ cost model.
- A1.486 The WACC rate applied in this BU-LRAIC+ cost model is based on the regulated rate of 8.18%, the assessed rate of return on capital employed for regulated fixed telephony service providers, as determined in ComReg's 2014 WACC Decision.¹³⁶⁸ ComReg is of the view that this ensures that the capital employed in providing regulated LB TI WHQA services is reasonably rewarded.
- A1.487 The methodological choices underpinning the BU-LRAIC+ cost model are set out above in Section 8.9. Of relevance is ComReg's review of the choices relating to the appropriate cost approach, set out in paragraphs 8.246 to 8.252, and those choices relating to the appropriate cost modelling set out in paragraphs 8.253 to 8.261. ComReg's position is that a view of prices derived from Eircom's historical costs does not provide the appropriate "Build/Buy" price signal for a hypothetical, forward-looking efficient operator. Furthermore, ComReg's view is that an alternative approach would carry risks to future investment, by presenting lower prices – as a result of Eircom's position in the LB TI WHQA investment cycle.
- A1.488 With respect to the price benchmarks presented by Verizon, which it believes demonstrate the need to ensure charge controls are appropriately set, ComReg notes that it has considered using benchmarks as a form of price control. This approach is discussed in paragraphs 8.212 to 8.216 of this document. While the evidence produced by Verizon is informative, ComReg does not consider that benchmarking is an appropriate approach to set prices for LB TI WHQA products, services and associated facilities, given that it has completed a BU-LRAIC cost model, which it believes to be a better representation of appropriate and efficient costs incurred by Eircom.¹³⁶⁹

¹³⁶⁷ See paragraph 8.67 above.

¹³⁶⁸ ComReg Document 14/136 Decision D15/14: Cost of Capital ('**2014 WACC Decision**').

¹³⁶⁹ ComReg is of the view that this is consistent with the judgment of Cooke J. in *Vodafone Ireland Limited v Commission for Communications Regulation* [2013] IEHC 382.

A1.489 With respect to the comments made in relation to the Accounting Separation obligations and the lack of transparency of its processes, ComReg is of the view that the current set of published HCA Separated Accounts strikes the right balance between allowing industry a view of the regulated returns of Eircom in WHQA Markets (as reconciled to its statutory financial statements) and not disclosing information which may put Eircom at an unfair competitive disadvantage. Such balance is of more relevance now that a significant de-regulation of WHQA markets is undertaken as part of this Decision.

A.1.9 Summary and Assessment of Respondents' Views on ComReg's Assessment of Competition Problems in the Zone B MI WHQA Markets and Impacts on Competition and Consumers

- A1.490 In Section 8 of the 2018 Further Consultation (and now Section 9 ComReg set out an analysis of the competition problems that were likely to arise in the then Zone B MI WHQA Markets (and related markets) absent regulation.
- A1.491 In Question 6¹³⁷⁰ of the 2018 Further Consultation ComReg sought any further observations on ComReg's SMP Assessment.
- A1.492 Of the Seven Submissions received from Respondents in response to the 2018 Further Consultation, Five Respondents (ALTO, BT, Eircom, enet and Vodafone) commented on ComReg's assessment of competition problems in the Zone B MI WHQA Markets. Four Respondents (ALTO, BT, enet and Vodafone) agreed with ComReg's assessment, while one Respondent (Eircom) disagreed.
- A1.493 In Section A.1.9.1 below ComReg summarises Respondents' views, before then assessing them in Section A.1.9.2.

A.1.9.1 Respondents' Views on Competition Problems in the Zone B MI WHQA Markets

Sharing of Confidential Information

- A1.494 Two Respondents (ALTO and BT) expressed concerns with the effectiveness of Eircom's RGM Both expressed concerned at the need to ensure that confidential wholesale information from Eircom's wholesale arm is not made available to Eircom's downstream retail arm via inappropriate systems access. In these Respondents' views, the resulting information asymmetry could provide Eircom with an unfair competitive advantage in the downstream retail market and considered that ComReg should prevent this.

Slow progress on RGM

- A1.495 Two Respondents (ALTO and BT) expressed concern at the slow progress of the RGM.

¹³⁷⁰ Question 6 on page 285 of the 2018 Further Consultation asked "Do you agree that the competition problems and the associated impacts on competition consumers identified are those which could potentially arise in the Zone B MI WHQA Market?"

Identification of UMANs¹³⁷¹

A1.496 Eircom indicated that ComReg did not adequately explain how it had identified which MANs were to be designated as 'UMANs'¹³⁷². It noted that it would be instructive to understand what factors are hindering enet from investing in its own infrastructure and climbing the ladder of investment. It also added that given ComReg's proposal that Eircom will continue to be required to provide backhaul services, including WDM backhaul, there is no valid justification for the so-called UMAN areas to be excluded from the competitive market for access.

Competition problems will occur in the Zone A MI WHQA Market

A1.497 enet agreed that the competition problems and associated impacts on consumers identified by ComReg are those that could potentially arise in the Zone B MI WHQA Markets. enet expressed the view that such problems would also occur in the Zone A MI WHQA Markets where Eircom remains the sole possible provider of WHQA services. enet was concerned that if ComReg proceeded with its plans to deregulate the Zone A MI WHQA Markets that this would likely lead directly to consumer harm due to lack of choice of provider.

A1.498 Vodafone agreed that ComReg had identified potential competition problems that could arise in the Zone B MI WHQA Markets. It re-iterated the concerns raised with respect to the impact of deregulation of Zone A and the potential leveraging behaviours that could occur absent appropriate regulation. Vodafone indicated that it was unconvinced that the proposed remedies would be sufficient of themselves to prevent these problems occurring.

¹³⁷¹ These were described in paragraph 4.178 of the 2018 Further Consultation.

¹³⁷² A UMAN is described as a State owned open network access network which is partially or wholly dependent on Eircom for backhaul. Absent regulation, these MANs were deemed not be effectively operational given they rely on access to regulated WHQA services.

A.1.9.2 ComReg's Assessment of Respondents' Views on Competition Problems in the Zone B MI WHQA Markets

Sharing of Confidential Information

A1.499 ComReg would note that, in accordance with Regulation 5(6) of the Access Regulations 2011, all Undertakings that acquire information from another Undertaking before, during or after the process of negotiating access or interconnection arrangements must not use that information for a purpose other than that for which it was supplied and must respect at all times the confidentiality of information transmitted or stored.

A1.500 In Section 10 of this Decision, Eircom has also been subjected to non-discrimination obligations which seek to address competition problems arising from asymmetries in the provision of information.

Slow progress on RGM

A1.501 ComReg notes the concerns expressed by ALTO and BT about the RGM. In Section 10 of this Decision¹³⁷³, ComReg has imposed upon Eircom a range of remedies that are designed to ensure it has in place appropriate levels of governance with its regulatory obligations, including a Statement of Compliance ('SoC'). ComReg has also set out the position on the RGM which operates independently of the SoC obligations.

Identification of UMANs

A1.502 In the 2018 Further Consultation¹³⁷⁴, ComReg described how it had identified the UMANs. ComReg analysis in this Decision, both in the context of defining the WHQA Markets and assessing competition within them, adopts the MGA, whereby existing regulation in the WHQA markets is discounted. In view of this, any enet MAN whose connectivity is dependent on a regulated WHQA input, would not have this available absent regulation. It is in this context that ComReg has assessed demand and supply conditions and has identified that certain UMANs would be effectively islands of connectivity and be therefore incapable of being used for WHQA services. UMANs are essentially those that are, following an assessment of the proximity of alternative networks to them, do not have backhaul connectivity such that they can effectively operate in the WHQA markets.

¹³⁷³ See, for example, Section 10.11 and Annex A.1.10.6.

¹³⁷⁴ See, for example, paragraphs 4.178 and 4.182 of the 2018 Further Consultation.

Competition problems will occur in the Zone A MI WHQA Markets

- A1.503 ComReg notes enet's and Vodafone's views above. ComReg has decided in Section 6 of this Decision that no Undertaking has SMP in the Area 1 MI WHQA Market and Areas 3 MI WHQA Market (together the '**Zone A MI WHQA Markets**'). In view of this, ComReg is obliged to remove all regulatory obligations and, as noted in Section 11, has specified a 12 month sunset period for such withdrawal in order to provide for an orderly transition.
- A1.504 ComReg's position on competition problems in the Zone B MI WHQA Markets is set out in Section 9 of this Decision.

A.1.10 Summary and Assessment of Respondents' Views on proposed remedies in the Zone B MI WHQA Markets

- A1.505 The summarised Respondents' comments in this Annex relate to ComReg's proposed remedies in the Zone B MI WHQA Markets as set out in paragraphs 9.41 to 9.449 of the 2018 Further Consultation.
- A1.506 In paragraphs 9.41 to 9.449 of the 2018 Further Consultation, ComReg proposed, in light of the competition problems set out in Section 8 of the 2018 Further Consultation, to impose a range of access, non-discrimination, transparency and price control, cost accounting and accounting separation remedies on Eircom in respect of the Zone B MI WHQA Markets.
- A1.507 ComReg's position on the remedies imposed in this Decision is documented in paragraphs 10.42 to 10.482 of this Decision and this Annex.
- A1.508 In Questions 7¹³⁷⁵ 8¹³⁷⁶ and 9¹³⁷⁷ of the 2018 Further Consultation, ComReg asked whether parties agreed with ComReg's approach, including the wording of the Draft Decision Instrument (Annex: 4 of the 2018 Further Consultation).
- A1.509 Respondents' views on the proposed access remedies are classified into the remedies/themes identified below:
- (a) Requirement to meet reasonable requests for Access (summarised in paragraphs A1.512 to A1.515 below);

¹³⁷⁵ "Question 7: Do you agree with ComReg's approach to imposing access, non-discrimination, transparency, price control and cost accounting and accounting separation remedies in the Zone B MI WHQA Market? Please explain the reasons for your answer, clearly indicating the relevant paragraph numbers to which your comments refer, along with all relevant factual evidence supporting your views." paragraph 9.450 of the 2018 Further Consultation.

¹³⁷⁶ "Question 8: Do you agree with ComReg's draft Decision Instrument set out in Appendix: 4, in particular, that its wording accurately captures the intentions expressed in this Section 9? Do you agree with ComReg's Definitions and Interpretations as set out in Part I of the Draft Decision Instrument? Please explain the reasons for your answer, clearly indicating the relevant paragraph numbers in the Draft Decision Instrument to which your comments refer." paragraph 9.451 of the 2018 Further Consultation.

¹³⁷⁷ "Question 9: Do you agree with ComReg's approach on the withdrawal of all existing obligations in the HB TI WHQA Market and the Zone A MI WHQA Market and withdrawal of the obligation to provide WLLs in the LB TI WHQA market? Please explain the reasons for your answer, clearly indicating the relevant paragraph numbers to which your comments refer, along with all relevant factual evidence supporting your views." paragraph 10.22 of the 2018 Further Consultation.

- (b) Requirement to provide Access to Interconnection Services (including Interconnection Sharing Service) (summarised in paragraphs A1.518 to A1.534 below);
- (c) Requirement to provide Access to Co-Location, and Co-Location Related Services (summarised in paragraphs A1.568 to A1.575 below);
- (d) Requirement to negotiate in good faith (discussed in paragraphs A1.615 to A1.617 below);
- (e) Requirement not to withdraw Access to facilities already granted (summarised in paragraphs A1.619 to A1.623 below);
- (f) Requirement to grant open Access to technical interfaces, protocols and other key technologies (summarised in paragraph A1.632 below);
- (g) Requirement to provide Access to Eircom's OSS (summarised in paragraphs A1.634 to A1.641 below);
- (h) Requirements governing fairness, reasonableness and timeliness of Access (summarised in paragraphs A1.651 to A1.676 below);
- (i) Ethernet in the First Mile ('EFM') (discussed in paragraphs A1.788 to A1.790 below);
- (j) Civil Engineering Infrastructure ('CEI') Access (summarised in paragraphs A1.794 to A1.805 below);
- (k) Fit-for-purpose Duct and Pole products (summarised in paragraphs A1.809 to A1.819 below);
- (l) Specific Market Analysis observations (summarised in paragraphs A1.824 to A1.827 below); and
- (m) Practical application of Remedies in the Zone B MI WHQA Markets (summarised in paragraphs A1.830 to A1.834 below).

A.1.10.1 Access Remedies

A1.510 In paragraphs 9.57 to 9.202 of the 2018 Further Consultation, ComReg set out its proposed access remedies including:

- (a) a requirement to meet reasonable requests for Access (paragraphs 9.57 to 9.64 of the 2018 Further Consultation);
- (b) a requirement to provide Access to Interconnection Services (including Interconnection Sharing Service) (paragraphs 9.65 to 9.80 of the 2018 Further Consultation);
- (c) a requirement to provide Access to Co-Location and Co-Location Related Services (paragraphs 9.81 to 9.110 of the 2018 Further Consultation);

- (d) a requirement to negotiate in good faith (paragraphs 9.111 to 9.118 of the 2018 Further Consultation);
- (e) a requirement not to withdraw Access to facilities already granted (paragraphs 9.119 to 9.125 of the 2018 Further Consultation);
- (f) a requirement to grant open Access to technical interfaces, protocols and other key technologies (paragraphs 9.126 to 9.128 of the 2018 Further Consultation);
- (g) a requirement to provide Access to Eircom's OSS (paragraphs 9.129 to 9.132 of the 2018 Further Consultation); and
- (h) requirements governing fairness, reasonableness and timeliness of Access (paragraphs 9.133 to 9.202 of the 2018 Further Consultation).

A1.511 All seven Respondents expressed views on issues relating to the proposed access remedies set out in the 2018 Further Consultation (namely ALTO, BT, Eircom, enet, Verizon, Vodafone and Zayo). However, in general, Respondents commented on some of the proposed specific remedies.

Requirement to meet reasonable requests for Access

Respondents' Views

A1.512 No Respondent expressed views on the requirement for Eircom to meet reasonable requests for Access to MI WHQA products, services and facilities¹³⁷⁸ in the Zone B MI WHQA Markets.

A1.513 Related to this obligation, two Respondents (ALTO and BT) expressed views that ComReg should impose an obligation requiring Eircom to provide 'Access to Information'. This obligation would oblige Eircom to provide accurate and correct information to support Access Seekers in making access requests.

¹³⁷⁸ Including Related MI WHQA Elements. Refer to Paragraphs 4.257 – 4.259, Section 9.5.1, Appendix: 9 of the 2018 Further Consultation and paragraphs 10.62 to 10.64 of this Decision.

A1.514 BT's opinion was that issues associated with Eircom's RGM undermined confidence that Access Seekers are being provided with all the relevant information in order to progress access requests. By way of example, BT cited the case of the request for access to Regional Handover Interconnect Services¹³⁷⁹, where BT considered that service providers were misled by Eircom as to the complexities in supplying such access. BT stated that after two years, this was resolved by using a simple pricing formula which BT had previously proposed within a few months of its access request.¹³⁸⁰ BT considered that an obligation requiring Eircom to provide access to information is necessary in order to prevent Eircom providing incomplete or inaccurate information.

A1.515 ALTO's views¹³⁸¹ mirrored those of BT.

Requirement to meet reasonable requests for Access

ComReg's Assessment of Respondents' Views

A1.516 ComReg notes that no Respondent disagreed with ComReg's proposal on the requirement for Eircom to meet reasonable requests for Access to MI WHQA products, services and facilities¹³⁸² in the Zone B MI WHQA Markets.

A1.517 ComReg does not agree that an additional remedy is required which would oblige Eircom to provide accurate and correct information to support requests for access from Access Seekers. ComReg has separately proposed a non-discrimination obligation on Eircom to provide Access Seekers with access to information.¹³⁸³ For example, the non-discrimination obligation requires Eircom to provide Access Seekers with the same information, pertaining to the access request, which Eircom has in its possession (i.e. information it provides to itself).

¹³⁷⁹ Within the Wholesale Central Access (WCA) Market.

¹³⁸⁰ BT Submission Part 1, page 10-11.

¹³⁸¹ ALTO Submission, page 11.

¹³⁸² Including Related MI WHQA Elements.

¹³⁸³ Paragraph 9.215 of the 2018 Further Consultation

Requirement to provide Access to Interconnection Services (including Interconnection Sharing Service)

Respondents' Views

- A1.518 Five Respondents (ALTO, BT, Eircom, enet and Vodafone) expressed a view on ComReg's proposal to require Eircom to provide Access to Interconnection Services¹³⁸⁴. Four Respondents (ALTO, BT, enet and Vodafone) agreed^{1385 1386 1387 1388} with ComReg's proposal, whereas Eircom disagreed specifically concerning the requirements to provide access to the WDM Interconnection Service¹³⁸⁹ (summarised in paragraphs A1.525 to A1.529 below) and Interconnection Sharing Service¹³⁹⁰ (summarised in paragraphs A1.530 to A1.531 below).
- A1.519 Two Respondents (ALTO and BT) expressed views that ComReg should impose a 'roof interconnection service' remedy in the WHQA Market. This would oblige Eircom to provide Interconnect Services to the roofs of Eircom's buildings and Exchanges for mobile operators (discussed in paragraphs A1.532 to A1.534 below).
- A1.520 Respondents' views are grouped into the following themes:
- (a) Civil Engineering Infrastructure ('CEI') availability before deregulation of the Zone A MI WHQA Markets commences (summarised in paragraphs A1.521 to A1.522 below);
 - (b) Interconnection Service availability before deregulation of the Zone A MI WHQA Markets commences (summarised in paragraphs A1.523 to A1.524 below);

"Pursuant to Regulation 10 of the Access Regulations, ComReg also proposes that the non-discrimination obligations should be applied on, at least, an Equivalence of Outputs ('EoO') standards basis. When Eircom provides Access Seekers with access to MI WHQA products, services and facilities in Zone B, including access to information, Eircom would be required to do so in a manner which achieves the same standards in terms of functionality, price, terms and conditions, service and quality levels as Eircom provides to itself, albeit potentially using different systems and processes." [Emphasis Added]

¹³⁸⁴ See paragraphs 10.76 to 10.93 of this Decision.

¹³⁸⁵ ALTO Submission, page 10.

¹³⁸⁶ BT Submission Part 1, page 10.

¹³⁸⁷ enet Submission, page 19.

¹³⁸⁸ Vodafone Submission, page 11.

¹³⁸⁹ Eircom Submission, paragraphs 68–72.

¹³⁹⁰ Eircom Submission, paragraph 73.

- (c) WDM Interconnection Service (summarised in paragraphs A1.525 to A1.529 below);
- (d) Interconnection Sharing Service (summarised in paragraphs A1.530 to A1.531 below); and
- (e) Roof Interconnection Service (summarised in paragraphs A1.532 to A1.534 below).

CEI availability before deregulation of the Zone A MI WHQA Markets commences

A1.521 Vodafone stated that it should be a requirement that the 'wholesale passive access' (CEI) products, in the Wholesale Local Access ('WLA') Market are fully developed to meet Access Seekers' needs (including appropriate SLAs) and made available prior to the proposed de-regulation of Zone A MI WHQA Markets.

A1.522 Furthermore, Vodafone stated these product developments should be completed and made available prior to commencement of any proposed sunset period.¹³⁹¹ Vodafone stated that Access Seekers required the availability of these access products prior to deregulation of the Zone A MI WHQA Markets in order to facilitate the making of alternative arrangements for backhaul and access in a timely manner.

Interconnection Service availability before deregulation of the Zone A MI WHQA Markets commences

A1.523 Vodafone agreed with ComReg's proposals requiring Eircom to provide access to Interconnection Services, including the provision of Interconnection Sharing Service.¹³⁹²

¹³⁹¹ Vodafone Submission, page 11.

¹³⁹² Vodafone Submission, page 11.

A1.524 Vodafone stated that product developments (i.e. co-location products that enable Interconnection Services) should be completed and made available prior to commencement of any proposed sunset period¹³⁹³. Vodafone stated that Access Seekers required the availability of these products prior to deregulation of the Zone A MI WHQA Markets in order to facilitate the making of alternative arrangements for backhaul in a timely manner. Vodafone's view is that Eircom would not be incentivised to provide timely access to fit-for-purpose co-location products and Interconnection Services.

WDM Interconnection Service

A1.525 Eircom's view is that ComReg failed to explain the rationale for its proposed obligation requiring Eircom to provide access to a WDM Interconnection Service or provide examples from other countries to demonstrate that it is technically and economically feasible to do so¹³⁹⁴.

A1.526 Eircom stated that xWDM products are targeted at use cases that differ from those relating to the access/interconnect model used for IP and Ethernet-based products¹³⁹⁵, with xWDM products used for infrastructure purposes where the End User is effectively the operator themselves¹³⁹⁶.

A1.527 Eircom's opinion is that there are no cost saving benefits to a centralised xWDM handoff model and that a range of Interconnection Services already exist (such as CSH, ISH, IBH and ENH). Therefore, Eircom's view is that an imposition of the obligation to provide access to a WDM Interconnection Service is without merit¹³⁹⁷.

A1.528 Eircom stated that it has not received requests from Undertakings for 'aggregation services' using WDM¹³⁹⁸. Eircom's concern is that ComReg's proposed obligation requiring Eircom to provide WDM Interconnect will be technically challenging and may be very expensive to implement if it is found to be feasible to offer an end-to-end service as two segments.

¹³⁹³ Vodafone Submission, page 11.

¹³⁹⁴ Eircom Submission, paragraph 68.

¹³⁹⁵ Eircom Submission, paragraph 69.

¹³⁹⁶ Eircom Submission, paragraph 70.

¹³⁹⁷ Eircom Submission, paragraph 71.

¹³⁹⁸ Eircom Submission, paragraph 71.

A1.529 Eircom's opinion¹³⁹⁹ is that this proposed obligation is not proportionate and ComReg has failed to properly consider the factors required under Article 12(2) of the Framework Directive¹⁴⁰⁰.

Interconnection Sharing Service

A1.530 Eircom noted that it is able to facilitate Interconnection Sharing for separate companies that are under common ownership and that this current facility is implemented manually¹⁴⁰¹.

A1.531 It is Eircom's opinion that Interconnection Sharing is suitable only in cases where the relationship of the operators involved is static (through common ownership). Eircom stated that access to Interconnection Sharing cannot be managed dynamically on a site by site or operator by operator basis. For this reason, Eircom considered ComReg's proposed obligation to be unreasonable and disproportionate.

Roof Interconnection Service

A1.532 ALTO and BT stated that Eircom provides Interconnect Services to the roofs of Eircom's buildings and Exchanges for mobile operators^{1402 1403}.

¹³⁹⁹ Eircom Submission, paragraphs 71 and 72.

¹⁴⁰⁰ 12(1) "Where an Undertaking providing electronic communications networks has the right under national legislation to install facilities on, over or under public or private property, or may take advantage of a procedure for the expropriation or use of property, national regulatory authorities shall, taking full account of the principle of proportionality, be able to impose the sharing of such facilities or property, including buildings, entries to buildings, building wiring, masts, antennae, towers and other supporting constructions, ducts, conduits, manholes, cabinets."

12(2) "Member States may require holders of the rights referred to in paragraph 1 to share facilities or property (including physical colocation) or take measures to facilitate the coordination of public works in order to protect the environment, public health, public security or to meet town and country planning objectives and only after an appropriate period of public consultation, during which all interested parties shall be given an opportunity to express their views. Such sharing or coordination arrangements may include rules for apportioning the costs of facility or property sharing."

Article 12(1) and 12(2) of the Framework Directive, DIRECTIVE 2002/21/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive).

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02002L0021-20091219&from=EN>

¹⁴⁰¹ Eircom Submission, paragraph 73.

¹⁴⁰² ALTO Submission, page 11.

¹⁴⁰³ BT Submission Part 1, page 11.

A1.533 ALTO stated that its members would also like to be able to avail of this type of 'roof interconnection service' to support their interconnectivity requirements with mobile operators¹⁴⁰⁴.

A1.534 BT's opinion is that Eircom are forcing operators to buy an active bundled backhaul component from the interconnected exchange¹⁴⁰⁵, instead of providing operators with access to containment (e.g. cable trays) from the Exchange Co-Location footprint to a mast on the roof of the building i.e. access to containment would allow an operator to install their own cable between their Co-Location footprint to the mast.

Requirement to provide Access to Interconnection Services (including Interconnection Sharing Service)

ComReg's Assessment of Respondents' Views

A1.535 ComReg notes that four Respondents (ALTO, BT, enet and Vodafone) agreed with ComReg's proposal whereas Eircom disagreed with ComReg's proposal with regard to the proposed obligation requiring Eircom to provide access to a WDM Interconnection Service and Interconnection Sharing Service.

A1.536 ComReg has assessed Respondents' views based on the themes identified above as follows:

- (a) CEI availability before deregulation of the Zone A MI WHQA Markets commences (discussed in paragraphs A1.537 to A1.538 below);
- (b) Interconnection Service availability before deregulation of the Zone A MI WHQA Markets commences (discussed in paragraphs A1.539 to A1.541 below);
- (c) WDM Interconnection Service (discussed in paragraphs A1.542 to A1.556 below);
- (d) Interconnection Sharing Service (discussed in paragraphs A1.557 to A1.564 below); and
- (e) Roof Interconnection Service (discussed in paragraphs A1.565 to A1.567 below).

¹⁴⁰⁴ ALTO Submission, page 12.

¹⁴⁰⁵ BT Submission Part 1, page 11.

CEI availability before deregulation of the Zone A MI WHQA Markets commences

- A1.537 ComReg does not agree with Vodafone's views (summarised in paragraphs A1.521 to A1.522 above). ComReg's designation of the Zone A markets is based on the availability of existing competitive MI WHQA access and backhaul. ComReg's position is that regulated CEI products, in the WLA Market, may also be used by Access Seekers to deliver MI WHQA services in the Zone A MI WHQA Markets.
- A1.538 ComReg's position is that the sunset period for the withdrawal of regulation in the Zone A MI WHQA Markets is independent of all mandated revisions to Eircom's wholesale CEI product offerings being in place, as mandated in the 2018 WLA/WCA Decision¹⁴⁰⁶. ComReg will monitor Eircom's compliance with its obligations and will consider compliance action(s) as appropriate if Eircom does not implement all obligations imposed on it as a result of the 2018 WLA/WCA Decision.

Interconnection Service availability before deregulation of the Zone A MI WHQA Markets commences

- A1.539 ComReg notes that Vodafone agreed with ComReg's proposals regarding Interconnection, including the provision of Interconnection Sharing Service¹⁴⁰⁷.
- A1.540 ComReg does not agree with Vodafone's views (summarised in paragraph A1.524 above) that Access Seekers required the availability of Interconnection (and related Co-Location) products prior to deregulation of the Zone A MI WHQA Markets (i.e. commencement of the sunset period) in order to facilitate the making of alternative arrangements for backhaul in a timely manner as ComReg's designation of Zone A areas is based on the availability of existing competitive MI WHQA access and backhaul.

¹⁴⁰⁶ Market Review - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products, Response to Consultation and Decision, ComReg 18/94, Decision D10/18, 19 November 2018.

¹⁴⁰⁷ Vodafone Submission, page 11.

A1.541 ComReg's position is that the sunset period for the withdrawal of regulation in the Zone A MI WHQA Markets is independent of all necessary revisions to Eircom's wholesale product offerings being in place, as mandated in this Decision. Following the publication of this Decision, ComReg will monitor Eircom's compliance with its obligations and will consider compliance action(s) as appropriate if Eircom does not implement all obligations imposed on it as a result of this market review.

WDM Interconnection Service

A1.542 ComReg notes that Eircom disagreed¹⁴⁰⁸ with ComReg's proposal with regard to the proposed obligation requiring Eircom to provide access to a WDM Interconnection Service (summarised in to paragraphs A1.525 to A1.529 above). ComReg disagrees with Eircom views, as the WDM Interconnection Service is necessary to allow Access Seekers create a MI WHQA network based on WDM technology (i.e. WDM MI WHQA network) as an alternative to a MI WHQA network based on NGN Ethernet technology (i.e. NGN Ethernet MI WHQA network). Thus, the WDM Interconnection Service is to the WDM MI WHQA network as the NGN Ethernet Interconnection (WEIL) is to the NGN Ethernet MI WHQA network.

A1.543 ComReg provides some examples (paragraphs A1.544 to A1.551 below) on how a WDM Interconnection Service could be implemented in a MI WHQA network. ComReg notes that the specific design and implementation of the WDM Interconnection Service is a matter for Eircom.

A1.544 An uncontended WDM service is made up of the following WDM circuit segments:

- (a) a WDM access connection to either a customer premises ('CSH'¹⁴⁰⁹) or to a Co-Location facility in an Eircom Exchange ('IBH'¹⁴¹⁰), terminating in Zone B MI WHQA Markets; and
- (b) a WDM Interconnection Service (CSH or IBH).

A1.545 When the two segments are combined, an end-to-end WDM WHQA service is created, as depicted in Figure 89 below (scenario A and B). The WDM Interconnection Service is the designation of the WDM WHQA segment where Interconnection can take place.

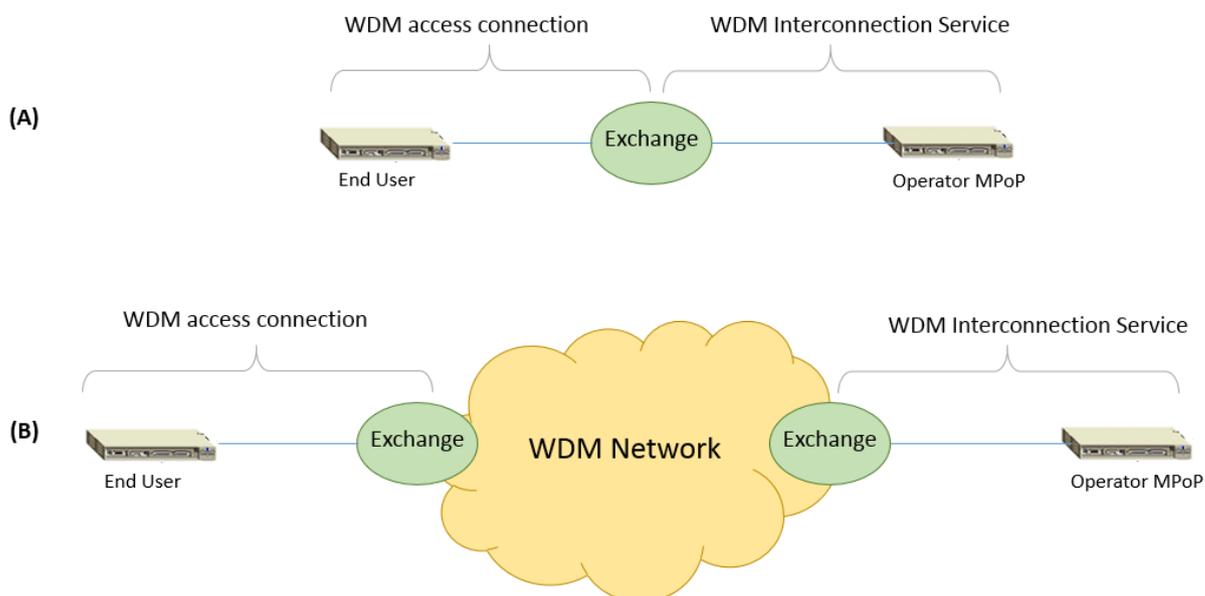
¹⁴⁰⁸ Eircom Submission, paragraphs 68–72.

¹⁴⁰⁹ Customer Sited Handoff.

¹⁴¹⁰ In-building Handoff.

A1.546 In the case of a single point-to-point WDM WHQA service, as depicted in Figure 89, the WDM Interconnection Service is the connection between the Exchange and the operator's Metropolitan Point of Presence ('MPoP').

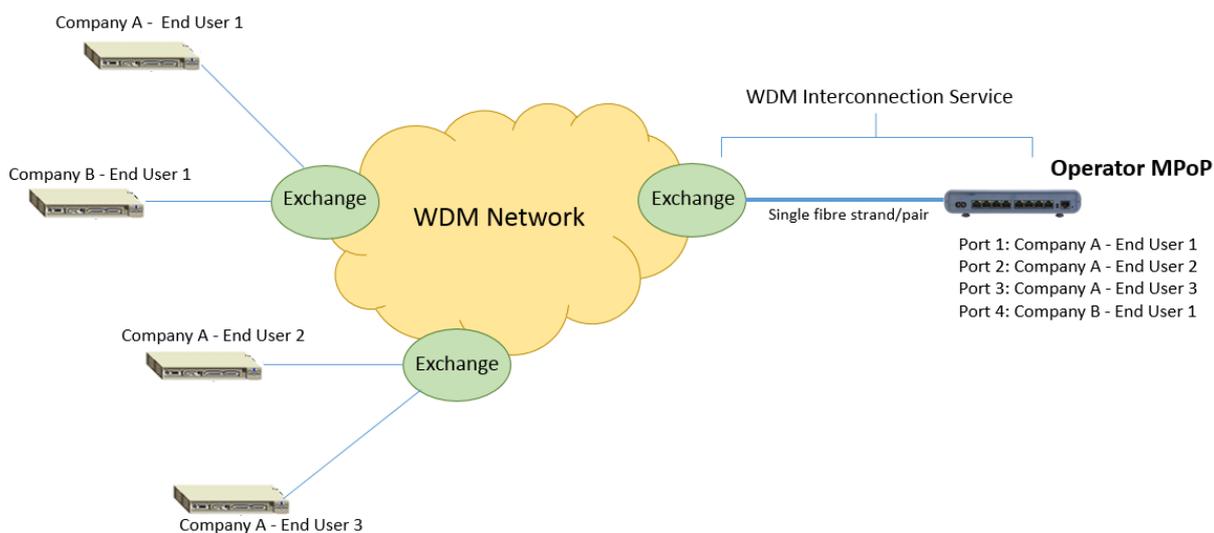
Figure 89 End-to-end WDM WHQA service



A1.547 In the case of a point-to-multipoint (or hub and spoke) WDM WHQA service, the WDM Interconnection Service is at the interconnect end of the WDM WHQA circuit, i.e. where traffic is handed off to the Access Seeker.

A1.548 For example, as depicted in Figure 90 below, an operator orders three 1Gb/s Wholesale Uncontended Product¹⁴¹¹ ('WUP') circuits for three sites/branches belonging to Company A each with a connection to the operator's MPoP. Sometime later, the same operator orders a 1 Gb/s WUP circuit from a site/branch location belonging to Company B to the same MPoP.

¹⁴¹¹ WUP is an Open eir uncontended WDM WHQA product.

Figure 90 WDM Interconnection Service – single NTU handoff

- A1.549 These four WUP circuits may be implemented as four WDM access connections connected to a WDM Interconnection Service terminating at the operator's MPOp. In this particular case, the 4 WUP circuits are delivered to the operator's MPOp on a single fibre strand (or fibre pair) terminating on a Network Termination Unit ('NTU') which has at least four 1Gb/s ports.
- A1.550 The connection between the Exchange and the operator's MPOp is known as a WDM Interconnection Service. Figure 90 is analogous to a case of a Traditional Interface ('TI') WHQA service where a STM-16 node is installed at an operator's MPOp. The STM-16 node is connected to the Eircom Exchange via a single fibre pair and has the capacity to terminate up to sixteen 155Mb/s (STM-1s) on the STM-16 node.
- A1.551 The WDM Interconnection Service as depicted in Figure 90 can be implemented when an Access Seeker requires dedicated bandwidth from multiple sites to its MPOp. There are standard NTUs available on the market which support the implementation of the WDM Interconnection Service.
- A1.552 WDM Interconnection Service shall be implemented as follows:
- (a) For the avoidance of doubt, the WDM Interconnection service as depicted in Figure 89 is mandated as part of this Decision. Eircom's existing WDM WHQA service (WUP) inherently supports the WDM Interconnection Service (as depicted in Figure 89 hence minimal product development¹⁴¹² is required for single end-to-end WDM WHQA services;

¹⁴¹² Product development will include updating the relevant WDM (WUP) product description, and notifying ComReg and publishing the updated product description.

- (b) The WDM Interconnection service as depicted in Figure 90 shall be developed by Eircom within nine (9) months of receiving a request from an Undertaking for the service on the basis that ComReg has determined the access request to be reasonable (refer to paragraphs A1.547 to A1.551 above). In the case of multiple WDM WHQA services at a single site (Access Seekers MPoP), Eircom can implement a single NTU handoff WDM Interconnection Service (as depicted in Figure 90 above). This will require product development which will require the procurement and deployment of an NTU to support multiple WDM handoffs at a single site.
- A1.553 The WDM Interconnection Service, as depicted in Figure 90 above, is more cost effective¹⁴¹³ for Eircom to provide to Access Seekers in instances where multiple WDM WHQA services are delivered to a single site.
- A1.554 ComReg disagrees with Eircom's submission¹⁴¹⁴ that:
- “... ComReg has failed to properly consider the factors required under Article 12(2) of the Framework Directive”.*
- A1.555 Article 12(2) of the Framework Directive was transposed into Irish law by Regulation 21 of the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011). It is noted that this Regulation refers to circumstances where ComReg can require holders of rights to install facilities on, over or under public or private property to enter into negotiations with other physical infrastructure providers for the sharing of physical infrastructure where the Regulator considers it necessary in order to protect the environment, protect public health, protect public security, or to meet town and country planning objectives. In circumstances where the proposed obligation relates to a designation of SMP, ComReg is of the view that Article 12(2) (as transposed into Irish law) is not a directly relevant consideration for these purposes. ComReg has however considered the existing regulatory framework in reaching its decision.
- A1.556 ComReg' position is that the WDM Interconnection Service is appropriate, technically feasible and proportionate (as outlined in paragraphs A1.544 to A1.551) and thus do not agree with Eircom's comments.

¹⁴¹³ Multiple WDM WHQA services (at the operators premises) terminating on a single fibre, single NTU versus multiple fibres and multiple NTUs.

¹⁴¹⁴ Eircom Submission, paragraph 72.

Interconnection Sharing Service

- A1.557 Interconnection Sharing provides an Access Seeker (AS-1) with the opportunity to share a WEIL which is owned by another Access Seeker (AS-2) – in circumstances where AS-2 agrees commercially to allow AS-1 share it's WEIL. ComReg outlined, in paragraph 10.74 above, why an Access Seeker (AS-1) should have the option to negotiate an Interconnection Sharing agreement with another Access Seeker (AS-2), where Interconnection Sharing is used to provide regulated MI WHQA products or services terminating in the Zone B MI WHQA Markets.
- A1.558 ComReg notes that Eircom disagreed¹⁴¹⁵ with ComReg's proposal with regard to the proposed obligation requiring Eircom to provide access to Interconnection Sharing Service (summarised in paragraphs A1.530 to A1.531 above).
- A1.559 ComReg notes that Eircom confirmed it already facilitates Interconnection Sharing for companies under common ownership and that the current facility is implemented manually¹⁴¹⁶.
- A1.560 ComReg does not agree with Eircom's opinion that Interconnection Sharing is suitable only in cases where the relationship of the operators involved is static (through common ownership). In the 2018 Further Consultation, ComReg did not mandate Eircom to automate Interconnection Sharing Service.
- A1.561 Currently, Eircom offers Interconnection Sharing Service where two or more Access Seekers are proceeding under one licence agreement¹⁴¹⁷ e.g. where AS-1 is 100% owned by AS-2 and AS-2 licence agreement specifies that AS-1 is wholly owned by AS-2. The implementation is straightforward given that AS-1 owns the access circuit (WSEA) and logical circuit (WES) connecting the access circuit to the WEIL – the WEIL is owned by AS-2. There are no billing implications given that, currently, the WSEA/WES charges are issued on a separate bill to AS-1, while the WEIL charges are issued on another bill to AS-2.
- A1.562 For example, AS-2 can order a separate Service Access Bandwidth (SAB) on its WEIL and request AS-1 to terminate its traffic on that new SAB. In this way, capacity management of the WEIL bandwidth is straightforward to manage for both AS-1 and AS-2.

¹⁴¹⁵ Eircom Submission, paragraph 73.

¹⁴¹⁶ Eircom Submission, paragraph 73.

¹⁴¹⁷ All charges relating to Interconnection are invoiced to, and accepted by, AS-2.

- A1.563 ComReg notes that if two operators enter into a commercial agreement for Interconnection Sharing that it is likely that this agreement will be for a defined period on the basis that both operators will require certainty on the duration commercial agreement. Once Eircom manually configures the logical circuit (known as the Wholesale Ethernet Service or '**WES**') to the host¹⁴¹⁸ operator's WEIL, it is likely that this logical service will remain in place for the duration of the commercial agreement.
- A1.564 In any event, the manual effort required by Eircom to re-configure a WES to a nominated WEIL for operators under common ownership (which Eircom supports today) is the same manual effort required by Eircom to re-configure a WES to a nominated WEIL for unrelated operators who enter into a commercial agreement for Interconnection Sharing. Furthermore, Eircom has the ability to recover the incurred cost of the manual effort for re-configuring a WES to a new WEIL. ComReg' position is that the Interconnection Sharing Service is appropriate, technically feasible and proportionate (as outlined in paragraphs A1.557 to A1.564) and thus do not agree with Eircom's comments.

Roof Interconnection Service

- A1.565 ComReg notes that ALTO and BT expressed views that ComReg should impose a 'roof interconnection service' remedy in the MI WHQA Markets (summarised in paragraphs A1.532 to A1.534 above).
- A1.566 ComReg disagrees with ALTO and BT that a 'roof interconnection service' remedy is required in the MI WHQA Markets given that Access Seekers have the ability, in this Decision, to interconnect with multiple fixed MI WHQA networks at a Trunk Node while Eircom is obliged to provide a fixed regulated MI WHQA Interconnection Service at a Non-Trunk Node or transport the regulated MI WHQA traffic to either of the Trunk Nodes located in the Eircom Exchange where Eircom's PE nodes are located, or transport the regulated MI WHQA traffic to the Access Seeker's edge node (ENH) located within the Aggregation region, in order that the Access Seeker can avail of interconnection.
- A1.567 In addition, an Access Seeker has the ability to order a regulated MI WHQA access circuit (e.g. WSEA) from a mast location to the serving Aggregation Node where a mast is situated in a Zone B MI WHQA Markets (e.g. on the roof of a Non-Trunk Node Exchange).

¹⁴¹⁸ The host operator owns the WEIL i.e. AS-2 in example in paragraph A1.561 above.

Requirement to provide Access to Co-Location, and Co-Location Related Services

Respondents' Views

- A1.568 Five Respondents (ALTO, BT, Eircom, enet and Vodafone) expressed a view on ComReg's requirement to provide Access to Co-Location, and Co-Location Related Services¹⁴¹⁹ (i.e. Co-Location Resource Sharing¹⁴²⁰, Colocation Rack Interconnection¹⁴²¹ and Shared Services within or between Colocation racks¹⁴²²). Four Respondents (ALTO, BT, enet and Vodafone) agreed with ComReg's proposal whereas Eircom disagreed.
- A1.569 ALTO, BT and enet agreed with ComReg's proposal in the 2018 Further Consultation to impose obligations on Eircom requiring it to provide access to Co-Location, and Co-Location Resource Sharing^{1423 1424 1425}.
- A1.570 Vodafone agreed with ComReg's proposals regarding Colocation, Colocation Resource Sharing, Colocation Rack Interconnection and Shared Services within or between Colocation racks¹⁴²⁶.
- A1.571 Eircom views are set out in paragraphs A1.572 to A1.575 below.

Co-Location Resource Sharing

- A1.572 Eircom disagreed with ComReg's proposal that Eircom should be subject to an obligation to provide Access to Co-Location Resource Sharing.

¹⁴¹⁹ See paragraphs 10.95 to 10.132 of this Decision.

¹⁴²⁰ **“Co-Location Resource Sharing”** means the facility whereby an Undertaking (the first Undertaking) is permitted to share the resources (including space, power) allocated to that first Undertaking by Eircom in an Exchange with another Undertaking (the second Undertaking) to which Eircom is also providing Access to products, services and facilities;

¹⁴²¹ **“Co-Location Rack Interconnection”** means Interconnection between two or more co-location equipment racks belonging to two or more separate Undertakings’;

¹⁴²² **“Shared Services within or between Co-Location Racks”** means the facility whereby an Undertaking is permitted to share the services allocated to that Undertaking by Eircom in an Exchange with another Undertaking that the Undertaking is providing access services to;

¹⁴²³ ALTO Submission, page 10.

¹⁴²⁴ BT Submission Part 1, page 10.

¹⁴²⁵ enet Submission, page 19.

¹⁴²⁶ Vodafone Submission, page 11.

A1.573 In Eircom's view, ComReg failed to properly assess the proposal, with its views summarised as follows:

- (a) It is an unacceptable dilution of Eircom's property rights, as in effect one Access Seeker could sub-lease space in an Eircom Exchange to another Access Seeker¹⁴²⁷;
- (b) The proposal would be unworkable unless both Access Seekers enter into co-location arrangements with Eircom¹⁴²⁸;
- (c) Eircom would not be in a position to invoice each Access Seeker for services consumed, such as power, without incurring additional expense to install additional power meters¹⁴²⁹; and
- (d) security may also be a concern where an Access Seeker's staff member could be working on another Access Seeker's equipment¹⁴³⁰.

Co-Location Rack Interconnection

A1.574 Eircom disagreed with ComReg's proposal that Eircom should be subject to an obligation to provide Access to Co-Location Rack Interconnection with its views summarised as follows:

- (a) the proposed obligation is without merit, because Access Seekers already have access to IBH and ISH handoffs along with the ability to share ISH chambers thereby providing a means for interconnection to be shared at a Trunk Node between Access Seekers¹⁴³¹;
- (b) the proposed obligation would undermine investment by Eircom and increase the risk of damage to equipment within Exchanges¹⁴³²;

¹⁴²⁷ Eircom Submission, paragraph 74.

¹⁴²⁸ Eircom Submission, paragraph 74.

¹⁴²⁹ Eircom Submission, paragraph 74.

¹⁴³⁰ Eircom Submission, paragraph 74.

¹⁴³¹ Eircom Submission, paragraph 75.

¹⁴³² Eircom Submission, paragraph 75.

- (c) the Co-Location Rack Interconnection product would introduce additional requirements and protocols to the current RAP product set. For example, service operations teams would potentially need an additional site visit where Access to the Co-Location rack is locked by either the host or guest Access Seeker, requiring more than one visit to clear a fault. Eircom's view is that given that Co-Location Rack Interconnection would most likely be an unmanaged service, it would be unreasonable for ComReg to expect Eircom to manage infrastructure between Access Seekers where the ownership and ability to complete a fault diagnosis is ambiguous¹⁴³³;
- (d) the Co-Location Rack Interconnection product would not be an enhancement to the current product but a new product development¹⁴³⁴;
- (e) Co-Location Rack Interconnection confers rights on Access Seekers that supersede Eircom rights. Exchanges, racks and chambers are points of Interconnection used to facilitate operators in order to interconnect with Eircom at a point close to the Eircom network. It is not a low cost facility to be used for operators to connect with each other and bypass the Eircom network which has deployed significant investment¹⁴³⁵;
- (f) the Co-Location Rack Interconnection capability could potentially have scalability issues where access to racks is provided via cables in cable trays, or high duct utilisation may require additional investment by Eircom or the Access Seeker, and in some older buildings this may not be cost effective¹⁴³⁶; and
- (g) the imposition of the proposed additional obligation is not proportionate given that the desired outcome can already be achieved under current arrangements¹⁴³⁷.

¹⁴³³ Eircom Submission, paragraph 76.

¹⁴³⁴ Eircom Submission, paragraph 77.

¹⁴³⁵ Eircom Submission, paragraph 77.

¹⁴³⁶ Eircom Submission, paragraph 78.

¹⁴³⁷ Eircom Submission, paragraph 79.

A1.575 Eircom's view is that ComReg has failed to consider the factors required under Article 12(2) of the Framework Directive¹⁴³⁸.

Requirement to provide Access to Co-Location, and Co-Location Related Services

ComReg's Assessment of Respondents' Views

A1.576 ComReg notes that four Respondents (ALTO, BT, enet and Vodafone) agreed with its proposal on the requirement for Eircom to provide Access to Co-Location, and Co-Location Resource Sharing¹⁴³⁹.

A1.577 ComReg notes that Eircom disagreed with ComReg's proposals. ComReg has assessed Eircom's views as follows:

- (a) Co-Location Resource Sharing (discussed in paragraphs A1.578 to A1.579 below); and
- (b) Co-Location Rack Interconnection (discussed in paragraphs A1.580 to A1.614 below).

Co-Location Resource Sharing

A1.578 ComReg notes that Eircom disagreed¹⁴⁴⁰ with ComReg's proposed imposition of obligations requiring Eircom to provide access to Co-Location Resource Sharing (discussed in paragraph A1.573 above).

A1.579 For the following reasons, ComReg disagrees with Eircom's view that ComReg failed to properly assess the proposed Co-Location Resource Sharing obligation:

- (a) Contrary to Eircom's view in paragraphs A1.573(c), Eircom does not have to invoice each Access Seeker (who avails of Co-Location Resource Sharing) for services consumed, such as power. The host Access Seeker¹⁴⁴¹ will invoice the guest Access Seeker(s) for such services. Eircom will solely invoice the host Access Seeker for Co-Location services, without any change to its current invoicing arrangements.

¹⁴³⁸ Eircom Submission, paragraph 79.

¹⁴³⁹ See paragraphs 10.95 to 10.132 of this Decision.

¹⁴⁴⁰ Eircom Submission, paragraph 74.

¹⁴⁴¹ The host Access Seeker enters into a commercial agreement to share their Co-Location resources with other guest Access Seeker(s).

- (b) Contrary to Eircom's view in paragraphs A1.573(a) and (b), Co-Location Resource Sharing is not a dilution of Eircom's property rights. If a host Access Seeker wishes to enter into a Co-Location Resource Sharing commercial agreement with a guest Access Seeker(s) it may need to sign a new licence agreement with Eircom which will limit the rights of guest Access Seeker(s). The guest Access Seekers will be aware that the host Access Seeker has entered into a Co-Location licence agreement with Eircom. Eircom should publish the relevant Co-Location documentation; e.g. licence agreements, etc., as appropriate so that all potential guest Access Seekers are familiar with the terms of the host Access Seeker/Eircom Co-Location licence agreement.
- (c) Contrary to Eircom's view in paragraphs A1.573(d), if a host Access Seeker enters into a Co-Location Resource Sharing commercial agreement with a guest Access Seekers, the host Access Seekers will have assessed any security risk arising from the guest Access Seeker accessing the host Access Seeker's equipment. Similarly, a guest Access Seeker in opting to enter a commercial agreement for Co-Location Resource Sharing with a host Access Seeker will have assessed any security risk arising from the host Access Seeker accessing the guest Access Seeker's equipment. Furthermore, if the guest Access Seeker has not been accredited by Eircom to work unescorted in Eircom Exchanges, then Eircom has the ability to restrict the guest Access Seeker to escorted access to Eircom's Exchanges.

Co-Location Rack Interconnection

- A1.580 ComReg notes that Eircom disagreed¹⁴⁴² with ComReg's proposal with regard to the proposed obligation requiring Eircom to provide access to Co-Location Rack Interconnection (as summarised in paragraph A1.574 above).
- A1.581 Having assessed Eircom's views, ComReg does not agree with Eircom's views on the proposed Co-Location Rack Interconnection obligation.
- A1.582 Co-Location Rack Interconnection is an Associated Facility within the meaning of the 2011 Framework Regulations. Associated Facilities are defined in the Framework Regulations¹⁴⁴³ as:

¹⁴⁴² Eircom Submission, paragraphs 75-79.

¹⁴⁴³ Regulation 2 of the Framework Regulations.

*“.....those associated services, physical infrastructures and other facilities or elements associated with an electronic communications network or an electronic communications service **which enable or support** the provision of services via that network or service or have the potential to do so and include, among other things, buildings or entries to buildings, building wiring, antennae, towers and other supporting constructions, ducts, conduits, masts, manholes and cabinets” [EMPHASIS ADDED].*

A1.583 Associated Services are defined in the Framework Regulations¹⁴⁴⁴ as:

*“.....those services associated with an electronic communications network or an electronic communications service **which enable or support** the provision of services via that network or service or have the potential to do so and include, among other things, number translation or systems offering equivalent functionality, conditional access systems and electronic programme guides, as well as other services such as identity, location and presence services.” [EMPHASIS ADDED].*

A1.584 ComReg notes that Co-Location Rack Interconnection enables and supports the provision of MI WHQA products, services and facilities and, therefore, it is ComReg’s position that it falls within the definition of Associated Facilities as defined in the Framework Regulations. The manner in which Co-Location Rack Interconnection supports the provision of MI WHQA services can be demonstrated by the following example.

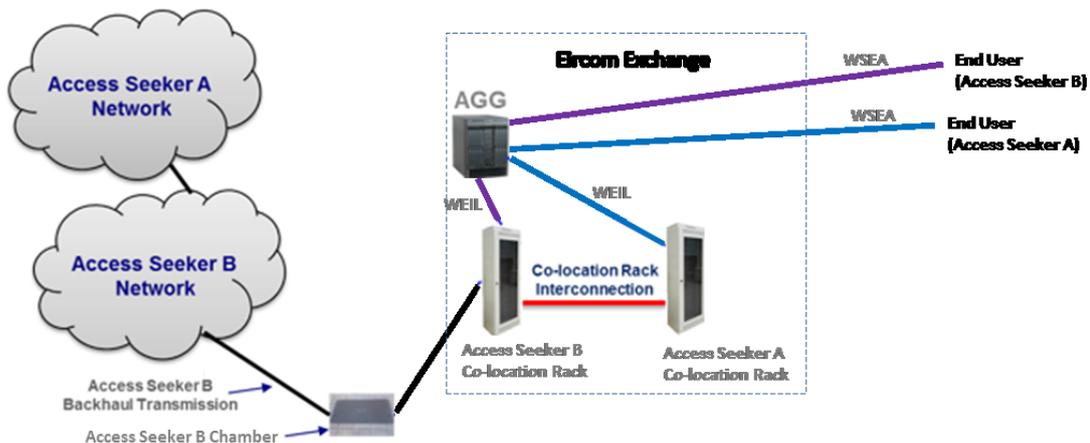
A1.585 In order to provide services to End Users, Access Seeker A may install equipment in a rack on a Co-Location footprint within an Eircom Exchange. Connectivity is then required between the equipment in Access Seeker A’s Co-Location footprint and Access Seeker A’s network in order to route traffic to and from the End User, thus enabling the provision of MI WHQA services to End Users.

¹⁴⁴⁴ *ibid.*

A1.586 Access Seeker B is also co-located in the same Exchange (or equivalent) and has infrastructure (consisting of regulated active and/or passive services) that allows connectivity between Access Seeker B's Co-Location (in Eircom's Exchange) and Access Seeker B's network. Using Co-Location Rack Interconnection, Access Seeker A can establish a connection between Access Seeker A's equipment in its Co-Location footprint (in Eircom's Exchange) to equipment in Access Seeker B's rack (also within Access Seeker B's Co-Location footprint within the Eircom Exchange) using Co-Location Rack Interconnection.

A1.587 In this way, connectivity from equipment in Access Seeker A's Co-Location rack to Access Seeker A's network can effectively be achieved via a backhaul service offered by Access Seeker B. In this way, Co-Location Rack Interconnection enables and supports the provision of MI WHQA services and ultimately the provision of downstream services to End Users. This Co-Location Rack Interconnection product can result in the lowering of costs for Access Seekers as they may be able to avail of an alternative backhaul service from other Co-located Access Seekers. Allowing Access Seekers to share backhaul increases their ability to take advantage of greater economies of scale and scope, thereby reducing barriers to MI WHQA provision (whether expanding existing provision or through encouraging new demand).

Figure 91 Co-Location Rack Interconnection



- A1.588 Figure 91 illustrates an example of the use of Co-Location Rack Interconnection referred to in paragraphs A1.585 to A1.587 above. In this example, Access Seeker B purchases a WEIL, WSEA and Civil Engineering Infrastructure ('CEI') Access (from Access Seekers B Co-Location rack to its MPoP) from Eircom, installing its own backhaul transmission to its network. Access Seeker A purchased a WEIL and WSEA from Eircom with backhaul connectivity from its equipment in its Co-Location rack in Eircom Exchange to its network achieved via a backhaul service offered by Access Seeker B facilitated by the Co-Location Rack Interconnection product.
- A1.589 ComReg notes that the degree to which competition is sustainable is dependent on a number of factors. Competition arising from investment by Access Seekers in infrastructure is likely to be more sustainable in the long-term (relative to services-based competition) and this sustainability is underpinned, *inter alia*, by potentially lowering Access Seekers' effective costs (through greater sharing of infrastructure) thereby improving Access Seekers' ability to take-up MI WHQA services.
- A1.590 Artificial barriers preventing the effective and efficient use of Co-Location services and facilities undermines the sustainability of competition, as such barriers raise Access Seekers' costs and reduce their opportunities to reasonably avail of regulated MI WHQA products.
- A1.591 This, in turn, dampens downstream competition to the ultimate detriment of End Users. Optimisation of Co-Location enhances competition by reducing effective costs through sharing backhaul services associated with MI WHQA services.¹⁴⁴⁵
- A1.592 ComReg considers, therefore, that imposing an obligation on Eircom requiring it to provide Access to Co-Location Rack Interconnection will encourage efficient investment in infrastructure, and in doing so promote sustainable competition and innovation to the ultimate benefit of End Users in terms of choice, price and quality.

¹⁴⁴⁵ "Backhaul" means the provision of dedicated transmission capacity (contended or uncontended in accordance with an OAO's requirement) at various bandwidths, using an appropriate mechanism (e.g. Ethernet or fibre) between an OAO's equipment at the Co-Location site and the OAO's nominated Point of Handover or between an OAO's equipment at the Co-Location site and the Eircom Exchange.

- A1.593 For the reasons outlined above¹⁴⁴⁶, ComReg's position is that obligations requiring Co-Location Rack Interconnection products enable the supply of MI WHQA services to downstream markets. Therefore, Access to Co-Location Rack Interconnection promotes long-term sustainable competition and therefore ultimately benefits End Users.
- A1.594 As explained in paragraphs A1.582 to A1.593 above, ComReg considers that Co-Location Rack Interconnection products fall within the meaning of an Associated Facility with respect to MI WHQA where they are used for the provision of products and services terminating in the Zone B MI WHQA Markets. For the avoidance of doubt, ComReg is not proposing that an Eircom Exchange (or equivalent) be used by an Access Seeker as a hosting centre i.e. an Access Seeker is not permitted to install equipment into Eircom Co-Location until the Access Seeker has registered its equipment (manufacturer, model, etc.) with Eircom as described in Open eir Co-Location IPM¹⁴⁴⁷, which Eircom will only be obliged to facilitate where the relevant equipment will be used for the provision of MI WHQA products and services terminating in the Zone B MI WHQA Markets.
- A1.595 In its Submission, Eircom stated that the proposed obligation is without merit, because Access Seekers already have access to IBH and ISH handoffs and the ability to share ISH chambers thereby providing a means for interconnection to take place between Access Seekers at a Trunk Node¹⁴⁴⁸. Eircom stated that the imposition of the proposed additional obligation is not proportionate given that the desired outcome can already be achieved under current arrangements¹⁴⁴⁹.

¹⁴⁴⁶ Paragraphs 10.121 to 10.127 of this Decision.

¹⁴⁴⁷ Process Manual for Open eir Physical Co-Location Service, Version 18.0, 19 September 2019, page 29.

¹⁴⁴⁸ Eircom Submission, paragraph 75.

¹⁴⁴⁹ Eircom Submission, paragraph 79.

- A1.596 ComReg notes that Access Seekers have the ability to share ISH chambers providing a means for interconnection between Access Seekers, for example at a Trunk Node. ComReg disagrees with Eircom's view that, given that Access Seekers can share ISH chambers, Co-Location Rack Interconnection is without merit. The Co-Location Rack Interconnection facility is necessary where Access Seekers have existing (or planned) IBH Interconnection i.e. where the Access Seeker's equipment and backhaul are accommodated in an Exchange building.
- A1.597 In its Submission, Eircom stated that the Co-Location Rack Interconnection product would not be an enhancement to the current product but a new product development¹⁴⁵⁰.
- A1.598 In ComReg's 2018 WLA/WCA Decision¹⁴⁵¹, ComReg imposed the Co-Location Rack Interconnection remedy on Eircom in the WLA Market. Given that Eircom must develop this Co-Location Rack Interconnection product, by 18 May 2019, in light of its obligations imposed in the WLA Market, Eircom can utilise the same product (e.g. process, price) for the MI WHQA Markets.
- A1.599 When considering the regulatory burden for Eircom of implementing Co-Location Rack Interconnection, ComReg considered the following three potential deployment scenarios.
- (a) **Scenario 1:** The Access Seekers' Co-Location racks are immediately adjacent to each other and the Access Seeker's technician connects a fibre or copper cable between the Access Seekers' racks.
 - (b) **Scenario 2:** The Access Seekers' Co-Location racks are not adjacent to each other, but there is a cable tray to enable the routing of a cable(s) between the two racks by the Access Seeker's technician (the Access Seeker having received authorisation from Eircom to use the cable tray, under Eircom supervision where necessary).
 - (c) **Scenario 3:** The Access Seekers' Co-Location racks are not adjacent to each other and there is no cable tray to facilitate Co-Location Rack Interconnection. In this case Eircom installs a cable tray between Co-Location racks. Once the cable tray is installed, the Access Seeker's technician can route a cable(s) between the two racks (the Access Seeker having received authorisation from Eircom to use the cable tray, under Eircom supervision where necessary).

¹⁴⁵⁰ Eircom Submission, paragraph 77.

¹⁴⁵¹ Market Review - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products, Response to Consultation and Decision, ComReg 18/94, Decision D10/18, 19 November 2018.

- A1.600 In the case of deployment Scenario 1 and Scenario 2 above, the burden on Eircom is likely to be minimal as the work to facilitate Co-Location Rack Interconnection could be completed by the Access Seeker's technician. In the case of Scenario 3 above, there are existing established Quote for Infrastructure Build ('**QIB**') and Provide Infrastructure Build ('**PIB**') wholesale order types available to implement the installation of cable trays.
- A1.601 In its Submission, Eircom stated that Co-Location Rack Interconnection confers rights on Access Seekers that supersede Eircom's rights. In Eircom's view, Exchanges, racks and chambers are points of Interconnection used to facilitate operators to interconnect with Eircom close to the Eircom network, rather than being a low cost facility to be used for operators to connect with each other and bypass the Eircom network which has deployed significant investment¹⁴⁵².
- A1.602 Given that ComReg, in this Decision, is deregulating the Zone A MI WHQA Markets, Access Seekers must have the ability to purchase backhaul services from an alternative operator. Co-Location Rack Interconnection is one of the obligations imposed on Eircom to facilitate this. As depicted in Figure 91 above, the Co-Location Rack Interconnection facility will allow an Access Seeker (AS-1) to connect to the Co-Location rack(s) of another Access Seeker (AS-2) in order that AS-1 can purchase backhaul services, in an efficient manner.
- A1.603 In its Submission, Eircom stated that the proposed obligation would increase the risk of damage to equipment within Exchanges and undermine investment by Eircom¹⁴⁵³.

¹⁴⁵² Eircom Submission, paragraph 77.

¹⁴⁵³ Eircom Submission, paragraph 75.

- A1.604 ComReg does not agree with Eircom's position that the Co-Location Rack Interconnection obligation would increase the risk of damage to equipment within Exchanges. Eircom provided no evidence to support its position. There is no material additional risk of damage to equipment within Exchanges where two Access Seekers have standalone Co-Location racks versus a situation where two Access Seekers have their individual Co-Location racks connected with Co-Location Rack Interconnection. If Eircom determine that there is a material and real prospect of risk to existing equipment/services in installing a cable(s) between two non-adjacent Co-Location racks at the survey stage (i.e. QIB stage) then Eircom can mitigate the risk as reasonably appropriate, having regard to the totality of its obligations, including non-discrimination obligations e.g. Eircom could provide supervised access.
- A1.605 ComReg notes that Eircom stated that Access Seekers already have access to IBH and ISH handoffs and that Access Seekers have the option to share ISH chambers thereby providing a means of connection between Access Seekers at a Trunk Node¹⁴⁵⁴. Hence, ComReg considers that the Co-Location Rack Interconnection obligation will not undermine investment by Eircom, instead it will provide Access Seekers with a more efficient method of connection in order to have a choice of backhaul services from alternative operators. Eircom has the regulatory freedom to compete for these backhaul services.
- A1.606 In its Submission, Eircom stated the Co-Location Rack Interconnection capability could potentially have scalability issues where Access to racks over cable tray, or high duct utilisation may require additional investment by Eircom or the Access Seeker, and in some older buildings this may not be cost effective¹⁴⁵⁵.

¹⁴⁵⁴ Eircom Submission, paragraph 75.

¹⁴⁵⁵ Eircom Submission, paragraph 78.

- A1.607 ComReg disagrees with Eircom's view as Eircom have existing QIB and PIB wholesale order types that are available to implement the construction of cable trays/containment between Co-Location racks (which today facilitate delivery of WSEA/WEIL IBH orders). These existing QIB and PIB wholesale order types can be used by Eircom to deliver cable tray/containment for the proposed Co-Location Rack Interconnection product. The QIB wholesale order allows Eircom to survey an Exchange and issue the Access Seeker with a quotation for the work required to implement the cable trays/containment. Once the Access Seekers accepts the quotation, Eircom creates a PIB order and implements the work as detailed in the PIB order. Finally, Eircom invoices the Access Seeker for the survey (QIB order) and cable trays/containment (PIB order).
- A1.608 In its Submission, Eircom stated that the Co-Location Rack Interconnection product would introduce additional requirements and protocols to the current RAP set. For example, service operations teams would potentially need an additional site visit where Access to the Co-Location rack is locked by the host/guest Access Seeker, requiring more than one visit to clear a fault. Eircom's view is that given that Co-Location Rack Interconnection would most likely be an unmanaged service, it would be unreasonable for ComReg to expect Eircom to manage infrastructure between Access Seekers where the ownership and ability to complete a fault diagnosis is ambiguous¹⁴⁵⁶;
- A1.609 ComReg's position is that Eircom does not have to manage the cable infrastructure between Access Seeker's Co-Location racks. The Co-Location Rack Interconnection cable(s) are installed by the Access Seeker's technician. Hence, Eircom role is to provide cable tray capacity (where necessary) and provide Access to its cable trays (supervised where necessary) for Co-Location Rack Interconnection provision and repair. The Access Seeker's technician will repair or replace a faulty Co-Location Rack Interconnection cable.

¹⁴⁵⁶ Eircom Submission, paragraph 76.

- A1.610 ComReg's position is that the Co-Location Rack Interconnection product would require minor modifications to the current RAP product set. For example, where the Access Seeker installs cable(s) between non-adjacent Co-Location racks, Eircom could request demarcation points to be installed at each Co-Location rack to clearly designate the start/end points of the Co-Location Rack Interconnection product. The demarcation points could be a fibre termination tray or CAT 6¹⁴⁵⁷ patch panel installed at an accessible location in each Co-Location racks.
- A1.611 Today, for example, an Access Seeker provides Eircom with Access to its Co-Location rack so that Eircom can repair a fault (e.g. NTU fault). The Co-Location Rack Interconnection product does not impact this existing repair process in any way. Furthermore, before issuing a supervised access request to Eircom¹⁴⁵⁸, the Access Seeker's technician will prove that the fault is in the Co-Location Rack Interconnection cable between the demarcation points.
- A1.612 In its Submission, Eircom stated that ComReg has failed to consider the factors required under Article 12(2) of the Framework Directive¹⁴⁵⁹.
- A1.613 ComReg disagrees with Eircom's submission¹⁴⁶⁰ that:
- "... ComReg has failed to properly consider the factors required under Article 12(2) of the Framework Directive".*

¹⁴⁵⁷ Twisted pair Ethernet cabling.

¹⁴⁵⁸ For example, where the Access Seeker wish to replace its faulty Co-Location Rack Interconnection cable and require Eircom to supervise the installation of the cable on its existing cable tray..

¹⁴⁵⁹ Eircom Submission, paragraph 79.

¹⁴⁶⁰ Eircom Submission, paragraph 79.

A1.614 Article 12(2) of the Framework Directive was transposed into Irish law by Regulation 21 of the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011). It is noted that this Regulation refers to circumstances where ComReg can require holders of rights to install facilities on, over or under public or private property to enter into negotiations with other physical infrastructure providers for the sharing of physical infrastructure where the Regulator considers it necessary in order to protect the environment, protect public health, protect public security, or to meet town and country planning objectives. In circumstances where the proposed obligation relates to a designation of SMP, ComReg is of the view that Article 12(2) (as transposed into Irish law) is not a directly relevant consideration for these purposes. ComReg has however considered the existing regulatory framework in reaching its decision.

Requirement to negotiate in good faith

Respondents' Views

- A1.615 Five Respondents (ALTO, BT, enet, Verizon and Vodafone) expressed a view on ComReg's proposed obligation requiring Eircom to negotiate in good faith¹⁴⁶¹. All four Respondents agreed with ComReg's proposal^{1462 1463 1464 1465 1466}.
- A1.616 ALTO agreed with ComReg's proposal¹⁴⁶⁷. ALTO noted that Eircom RGM has destroyed any reasonable view industry can have on this subject without evidence of real change arising from Eircom.
- A1.617 BT welcomed ComReg further definition of the proposed obligation and it agreed with ComReg proposal¹⁴⁶⁸.

¹⁴⁶¹ See paragraphs 8.81 to 8.89 of this Decision.

¹⁴⁶² ALTO Submission, page 10.

¹⁴⁶³ BT Submission Part 1, page 10.

¹⁴⁶⁴ enet Submission, page 19.

¹⁴⁶⁵ Verizon Submission, paragraph 28.

¹⁴⁶⁶ Vodafone Submission, page 10.

¹⁴⁶⁷ ALTO Submission, page 10.

¹⁴⁶⁸ BT Submission Part 1, page 11.

Requirement to negotiate in good faith

ComReg's Assessment of Respondents' Views

A1.618 ComReg notes that five Respondents (ALTO, BT, enet, Verizon and Vodafone) agreed with ComReg's proposed obligation that Eircom negotiate in good faith. An update on the Eircom RGM is included in Annex A.1.10.6.

Requirement not to withdraw Access to facilities already granted

Respondents' Views

- A1.619 Five Respondents (ALTO, BT, Eircom, enet and Vodafone) expressed a view on ComReg's proposed obligation requiring Eircom not to withdraw Access to facilities already granted in the MI WHQA market¹⁴⁶⁹. Four Respondents (ALTO, BT, enet and Vodafone) agreed with ComReg's proposal, whereas Eircom disagreed with the proposed five year advance notification period prior to closure of an MDF, ODF or the relocation of Aggregation Nodes¹⁴⁷⁰.
- A1.620 ALTO, BT, enet and Vodafone agreed with ComReg's preliminary view, in the 2018 Further Consultation, with respect to the proposed obligation on Eircom not to withdraw Access to facilities already granted the MI WHQA market^{1471 1472 1473 1474}.
- A1.621 ALTO¹⁴⁷⁵ and BT¹⁴⁷⁶ stated that certain network changes may lead to some services changing between different price categories during major bids (impacting operator bid proposals at key times), and in their opinion appears to be outside any real regulatory control. ALTO's opinion is that ComReg must consider price change constraints within this regulation.

¹⁴⁶⁹ See paragraphs 10.141 to 10.149 of this Decision.

¹⁴⁷⁰ Eircom Submission, paragraph 80.

¹⁴⁷¹ ALTO Submission, page 10.

¹⁴⁷² BT Submission Part 1, page 10.

¹⁴⁷³ enet Submission, page 19.

¹⁴⁷⁴ Vodafone Submission, page 10.

¹⁴⁷⁵ ALTO Submission, page 12.

¹⁴⁷⁶ BT Submission Part 1, page 11.

- A1.622 Eircom was unclear¹⁴⁷⁷ how ComReg arrived at its view¹⁴⁷⁸, that a five years notification period prior to closure of an MDF, ODF or the relocation of Aggregation Nodes would be appropriate and proportionate. In Eircom's opinion it is not appropriate or proportionate to prescribe minimum notification periods for withdrawal of a service or facility in the absence of consideration of the specific circumstances.
- A1.623 Eircom welcomed the text in Section 14.5 of the Draft Decision Instrument¹⁴⁷⁹ set out in Appendix 4 of the 2018 Further Consultation, which it noted did not seek to prescribe timelines¹⁴⁸⁰.

Requirement not to withdraw Access to facilities already granted

ComReg's Assessment of Respondents' Views

- A1.624 ComReg notes that four Respondents (ALTO, BT, enet and Vodafone) agreed with ComReg's proposed obligation requiring Eircom not to withdraw Access to facilities already granted in the MI WHQA Markets.
- A1.625 ComReg notes that if Eircom proposes to make network changes which results in some services moving to a different price category, then Eircom must notify ComReg and Access Seekers of these proposed changes, in accordance with its obligation not to withdraw Access to facilities already granted.
- A1.626 Uncertainty regarding Eircom's network topology (and Eircom's management of changes to it) potentially impacts on Access Seekers' ability to engage in business planning regarding the deployment and availability of services, thereby impacting on their incentives to invest in such access with a subsequent potential impact on competition.

¹⁴⁷⁷ Eircom Submission, paragraph 80.

¹⁴⁷⁸ See paragraph 10.149 of this Decision.

¹⁴⁷⁹ This text stated "*pursuant to Regulation 12(2)(c) of the Access Regulations, not withdraw Access to facilities already granted without the prior approval of ComReg and in accordance with terms and conditions as may be determined by ComReg*". 14.5(ii) of the Draft Decision Instrument in the 2018 Further Consultation.

¹⁴⁸⁰ Eircom Submission, paragraph 80.

- A1.627 While Eircom needs to be able to manage its network and make network topology or other changes as required, it must take into account during the planning and implementation process, the impact on Access Seekers and not act in a manner which unreasonably impacts on Access Seekers' existing services, investments, business planning and competition generally. While some network changes may not withdraw access to facilities already granted, they may have the potential to impact competition and/or End Users.
- A1.628 ComReg expects that Eircom will have in place a governance regime to ensure and oversee the consideration of proposed network changes in order to determine if and when ComReg approval is required. Such a governance regime should be guided by clear and consistently applied criteria which are informed by Eircom's regulatory obligations, including but not limited to Eircom's transparency and non-discrimination obligations and the obligation not to withdraw access to facilities already granted.
- A1.629 In such instances, if Eircom reasonably assesses that approval is needed, ComReg's position is that Eircom must notify ComReg, in writing, of any proposal to withdraw access to facilities already granted, giving a detailed explanation of the proposal, the nature and extent of communications with impacted or potentially impacted stakeholders and should include, in particular, the impacts that the withdrawal of access is likely to have on End Users and competition.
- A1.630 Eircom must seek ComReg's prior approval before proceeding with any plan based on such proposals and Eircom should ensure that it builds into its planning timelines an estimate of the time required for approval by ComReg and to only withdraw access in accordance with the terms and conditions as may be determined by ComReg.

A1.631 Having considered Eircom's views, as outlined in paragraph A1.622 above, ComReg acknowledge that the notification period as specified by ComReg is dependent on Eircom's specific proposal to withdraw Access to facilities already granted. In this Decision¹⁴⁸¹, ComReg's position is that the notification period prior to closure of an MDF, ODF or the relocation of Aggregation Nodes will be specified by ComReg, if it approves the closure of an ODF, MDF or the relocation of Aggregation Nodes. Eircom may only withdraw Access in accordance with the terms and conditions as may be determined by ComReg. For the avoidance of doubt, the closure of an MDF, ODF or the relocation of Aggregation Nodes are examples of withdrawal of Access to facilities already granted.

Requirement to grant open Access to technical interfaces, protocols and other key technologies

Respondents' Views

A1.632 Four Respondents (ALTO, BT, enet and Vodafone) expressed a view on ComReg's requirement on Eircom to grant open Access to technical interfaces, protocols and other key technologies¹⁴⁸². All Respondents agreed with ComReg's proposal^{1483 1484 1485 1486}.

Requirement to grant open Access to technical interfaces, protocols and other key technologies

ComReg's Assessment of Respondents' Views

A1.633 ComReg notes that four Respondents (ALTO, BT, enet and Vodafone) agreed with ComReg's proposed obligation requiring Eircom to grant open Access to technical interfaces, protocols and other key technologies.

¹⁴⁸¹ Paragraph 10.149 of this Decision.

¹⁴⁸² See paragraphs 10.153 to 10.155 of this Decision.

¹⁴⁸³ ALTO Submission, page 12.

¹⁴⁸⁴ BT Submission Part 1, page 11.

¹⁴⁸⁵ enet Submission, page 19.

¹⁴⁸⁶ Vodafone Submission, page 10.

Requirement to provide Access to Eircom's OSS

Respondents' Views

- A1.634 Two Respondents (ALTO and BT) expressed a view on ComReg's requirement on Eircom to provide Access to Eircom's OSS.
- A1.635 ALTO and BT disagreed with ComReg proposal to use the non-discrimination standard of EoO by which Access must be provided by Eircom to its OSS¹⁴⁸⁷ ¹⁴⁸⁸. ALTO stated that the standard expected by industry is Eol.
- A1.636 BT disagreed with ComReg concerning the use of the non-discrimination standard of EoO by which Access must be provided by Eircom to MI WHQA services such as Next Generation Networks¹⁴⁸⁹ ('NGN') services (including Access to Eircom's OSS) .
- A1.637 BT stated that the term 'Next Generation' (networks) indicates 'new networks' which, in BT's opinion, are developed in an environment of Eol. BT stated that it:
- ".....cannot understand why ComReg continues with a discredited EoO system as shown by the poor experience of the RGM"¹⁴⁹⁰.*
- A1.638 BT's view is that legacy non-discrimination regulation (i.e. EoO) is not fit-for-purpose as proven by RGM¹⁴⁹¹.
- A1.639 BT's opinion is that an Eol standard would drive Eircom's downstream services to use the "same" upstream services as Eircom offers to other operators, making it physically more difficult in practice to discriminate and easier to detect discrimination.

¹⁴⁸⁷ ALTO Submission, page 12.

¹⁴⁸⁸ BT Submission Part 1, page 11.

¹⁴⁸⁹ BT Submission Part 1, page 11, states that these are "The term Next Generation indicates these are new networks and it's important to acknowledge they were developed in an environment of EOI".

¹⁴⁹⁰ BT Submission Part 1, pages 11-12.

¹⁴⁹¹ BT Submission Part 1, page 14.

- A1.640 Two Respondents (ALTO and BT) expressed the view that ComReg should impose an OSS upgrade process obligation on Eircom in the WHQA Market, in instances where OSS upgrades are backward compatible^{1492 1493}.
- A1.641 ALTO and BT stated that OSS changes that are not backward compatible create financial and service risks to Industry. Both ALTO and BT requested that ComReg should consider imposing an obligation on Eircom in instances where OSS upgrades are not backwards compatible^{1494 1495}.

Requirement to provide Access to Eircom's OSS

ComReg's Assessment of Respondents' Views

- A1.642 ComReg notes that two Respondents (ALTO and BT) disagreed with ComReg proposal to use of EoO as the standard of Access to Eircom's OSS^{1496 1497}.
- A1.643 ComReg disagrees with both ALTO and BT that EoI should be the standard of Access to Eircom's OSS. ComReg's assessment as to why EoO is more appropriate is outlined in its assessment of the non-discrimination remedies (summarised in paragraphs A1.858 to A1.866).
- A1.644 ComReg notes that Eircom has committed to notify industry of changes to the UG data contract 12 weeks prior to the development of new functionality. Exceptionally, Eircom has committed to notify Industry by providing a minimum of 6 months' notice of changes to the Data Contract, which are not backward compatible¹⁴⁹⁸.

¹⁴⁹² ALTO Submission, page 13.

¹⁴⁹³ BT Submission Part 1, page 12.

¹⁴⁹⁴ ALTO Submission, page 13.

¹⁴⁹⁵ BT Submission Part 1, page 12.

¹⁴⁹⁶ ALTO Submission, page 12.

¹⁴⁹⁷ BT Submission Part 1, page 11.

¹⁴⁹⁸ Open eir Unified Gateway Interface Guidelines, Version 2.1, January 2016:

Section 3.3 (page 10): Open eir will notify industry of changes to the Data Contract 12 weeks prior to the development of new functionality. Exceptionally Open eir will provide a minimum of 6 months notice of changes to the Data Contract, which are not backward compatible.
https://www.openeir.ie/uploadedFiles/Content/Customer Service/Small Content Items/UG%20Interface%20Guidelines%20v2_1.pdf

A1.645 Figure 92 summarises the UG data contract notifications to wholesale operators for the period January 2017 to December 2018. Eircom gave an average of 11.6 weeks notification of UG data contract changes in this period. Eircom met its commitment to notify industry of changes to the UG data contract, 12 weeks in advance, in 2 out of 6 instances in the period January 2017 to December 2018.

Figure 92: UG Data Contract notifications to operators (2017- 2018)

Draft UG Data Contract Issued	UG Release	Number of Weeks
24-Jan-17	09-Apr-17	10.7
23-May-17	20-Aug-17	12.7
11-Sep-17	02-Dec-17	11.7
09-Feb-18	22-Apr-18	10.3
29-May-18	26-Aug-18	12.7
14-Sep-18	02-Dec-18	11.3

A1.646 ComReg notes that Open eir's Wholesale Bitstream Access Reference Offer ('**WBARO**')¹⁴⁹⁹ states that documents referenced in Annex C, Service Schedule 301 are contractually binding which includes the Open eir Unified Gateway Interface Guidelines and Open eir Wholesale Unified Gateway Data Contract ("**UG Data Contract**")¹⁵⁰⁰. ComReg notes that the Open eir Unified Gateway Interface Guidelines and UG Data Contract is common to both the WBARO and LLRO reference offers. For this reason, ComReg has decided to amend the definition of the LLRO¹⁵⁰¹.

A1.647 For the avoidance of doubt, the LLRO includes the documents which are expressly referred to as being part of the LLRO, and any associated or subordinate documents relied upon to meet Eircom's Access obligations as set out in this Decision, including but not limited to product descriptions, industry process manuals, service level agreements, unified gateway interface guidelines, unified gateway data contract ("UG Data Contract") and associated licence documentation.

¹⁴⁹⁹ WBARO Version 5.0, dated 02/05/19.

¹⁵⁰⁰ WBARO Version 5.0, dated 02/05/19, Annex C, Service Schedule 301, paragraph 1.2.

¹⁵⁰¹ See Section 2 of the Decision Instrument (Annex 8) of this Decision.

- A1.648 ComReg's position is that Eircom has an obligation¹⁵⁰² to notify Industry of changes to the Eircom OSS (including UG Data Contract), three (3) months prior to the deployment of new functionality, which is backward compatible. For this reason, ComReg disagrees with ALTO and BT's views (as outlined in paragraph A1.640 above) that ComReg should impose an OSS upgrade process obligation in the WHQA Market.
- A1.649 ComReg's position is that in instances where Eircom implement OSS upgrades that are not backwards compatible, then Eircom is withdrawing Access to facilities already granted (i.e. the existing OSS facility). As noted in paragraphs 10.141 to 10.153 above, ComReg's position is that Eircom cannot withdraw Access to facilities already granted, without the prior approval of ComReg. For this reason, ComReg disagrees with ALTO and BT's views (as outlined in paragraph A1.641 above) that ComReg should introduce a remedy on OSS upgrades in instances where OSS upgrades are not backwards compatible, in the WHQA Market. This is because the imposed obligation 'not to withdraw Access to facilities already granted' address this issue.
- A1.650 Given the importance of Access to Eircom's OSS for Access Seekers in order to operate and compete in downstream markets, ComReg's position is that this obligation (outlined in paragraph A1.648 above) is justified and proportionate, given that Eircom has already publicly committed to the notification timelines¹⁵⁰³.

¹⁵⁰² Paragraph 10.301(a) of this Decision (and paragraph 9.248 of the 2018 Further Consultation): *"(a) Eircom shall (unless otherwise agreed by ComReg) publish, on its publicly available website - at least three months in advance - any proposed changes to the LLRO and any proposed changes to Wholesale prices and the application of such prices for the purposes of notifying all interested parties of such changes."*

¹⁵⁰³ Open eir Unified Gateway Interface Guidelines, Version 2.1, January 2016.

Section 3.3 (page 10): Open eir will notify industry of changes to the Data Contract 12 weeks prior to the development of new functionality. Exceptionally Open eir will provide a minimum of 6 months notice of changes to the Data Contract, which are not backward compatible.
https://www.openeir.ie/uploadedFiles/Content/Customer Service/Small Content Items/UG%20Interface%20Guidelines%20v2_1.pdf

Requirements governing fairness, reasonableness and timeliness of Access

Respondents' Views

- A1.651 Five Respondents (ALTO, BT, Eircom, enet and Vodafone) expressed a view on ComReg's proposal regarding requirements governing fairness, reasonableness and timeliness of Access¹⁵⁰⁴.
- A1.652 Four Respondents (ALTO, BT, enet and Vodafone) broadly agreed with ComReg's proposal^{1505 1506 1507 1508}. Eircom disagreed with ComReg's proposal regarding requirements governing fairness, reasonableness and timeliness of Access¹⁵⁰⁹.
- A1.653 Respondents' views on this proposed remedy are classified into the following themes:
- (a) SLAs (summarised in paragraphs A1.654 to A1.660 below);
 - (b) New product development and changes to existing products (summarised in paragraphs A1.661 to A1.662 below);
 - (c) Suspension of an SLA (summarised in paragraphs A1.663 to A1.666 below); and
 - (d) Failure to meet SLA committed service levels (summarised in paragraphs A1.667 to A1.676 below).

SLAs

- A1.654 ALTO requested that ComReg put robust SLA obligations in force in the MI WHQA Market, stating that updated SLA obligations are overdue in this market¹⁵¹⁰.

¹⁵⁰⁴ See paragraphs 10.162 to 10.235 of this Decision.

¹⁵⁰⁵ ALTO Submission, page 13.

¹⁵⁰⁶ BT Submission Part 1, page 12.

¹⁵⁰⁷ enet Submission, page 19.

¹⁵⁰⁸ Vodafone Submission, page 10.

¹⁵⁰⁹ Eircom Submission, paragraph 92.

¹⁵¹⁰ ALTO Submission, page 13.

- A1.655 BT agreed with ComReg's proposal regarding requirements governing fairness, reasonableness and timeliness of Access, noting that the proposed extensive regulatory obligations would result in a more constructive approach by Eircom to SLA negotiations¹⁵¹¹.
- A1.656 Eircom stated that ComReg's proposals in respect of the requirements governing the fairness, reasonableness and timeliness of product development, is based on proposals consulted on in the WLA/WCA Consultation¹⁵¹², which were based on obligations imposed in the 2015 FACO Decision¹⁵¹³. Eircom noted that ComReg has amended the proposals in the WLA/WCA Consultation but has not provided an explanation as to how it has taken into account the views of Respondents (to the WLA/WCA Consultation). In Eircom's opinion, the 2018 Further Consultation process is flawed¹⁵¹⁴.
- A1.657 Eircom stated that a 'one size fits all' approach to SLA development across regulated markets is a clear breach of ComReg's EU law obligations. Eircom stated that its comments to the 2018 Further Consultation are made in addition to those submitted in its response to the separate WLA/WCA Consultation. Eircom stated that it is subject to strict non-discrimination requirements, monitored through transparent KPIs that ensure equivalent levels of service are provided to all Access Seekers¹⁵¹⁵. Eircom noted ComReg's view at paragraph 9.137 of the 2018 Further Consultation that:

“Ultimately, the proposed SLA obligations are designed to ensure fair competition in the provision of MI WHQA products, services and facilities by allowing Access Seekers to compete on a level playing field with Eircom (and its wholesale customers) in downstream markets.”

¹⁵¹¹ BT Submission Part 1, page 12.

¹⁵¹² Market Reviews - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products. [ComReg Document 16/96](#), 11 November 2016 (the '**WLA/WCA Consultation**').

¹⁵¹³ ComReg Decision D05/15, [Document 15/82](#), Market Review: Wholesale Fixed Call Origination and Transit Markets (the '**2015 FACO Decision**').

¹⁵¹⁴ Eircom Submission, paragraph 92.

¹⁵¹⁵ Eircom Submission, paragraph 93.

- A1.658 In Eircom's opinion, ComReg appears to be expressing an unconscious bias against Eircom¹⁵¹⁶.
- A1.659 Eircom stated that ComReg sought to unfairly blame¹⁵¹⁷ Eircom for delays in SLA development as a justification for the proposed SLA obligations. Eircom agreed that it proposed a modification to NGN Ethernet delivery SLA in August 2017 and providing a summary of events on this SLA negotiations to date. Eircom stated that it was disingenuous for ComReg to suggest that Eircom needs an incentive to progress negotiations when Eircom is reliant on engagement from Access Seekers to progress matters in good faith¹⁵¹⁸.
- A1.660 Eircom stated that in its response to the WLA/WCA Consultation, Eircom had proposed that¹⁵¹⁹:
- (a) The SLA negotiation period commences when an operator submit a clear set of requirements and rationale for adjusting existing SLA metrics or introducing new SLA metrics;
 - (b) ComReg should confirm at this stage whether what is submitted is clear and is fit-for-purpose;
 - (c) A six month period of negotiation at the end of which Eircom will provide an updated new draft of SLA document which effectively be the Best and Final Offer (BAFO) if earlier agreement has not been reached;
 - (d) The draft SLA document would then be notified to ComReg and published in accordance with the specified timelines;
 - (e) The notified document will include an expected launch date. The launch date for the new or amended SLA will be dependent on whether there are any development requirements to introduce the SLA; and
 - (f) Once an SLA is launched the SLA cannot be reopened for discussion for a period of at least 24 months without the agreement of both Eircom and ComReg. This will provide a minimum period of time during which the reasonableness of the SLA can be assessed.

¹⁵¹⁶ Eircom Submission, paragraph 93.

¹⁵¹⁷ In paragraph 10.175 of this Decision.

¹⁵¹⁸ Eircom Submission, paragraph 94.

¹⁵¹⁹ Eircom Submission, paragraph 95.

New product development and changes to existing products

- A1.661 ALTO and BT stated that they support ComReg's proposals including that Eircom should discuss and agree SLAs where necessary prior to product launch^{1520 1521}.
- A1.662 Eircom stated that its proposal (see paragraph A1.660 above) is fair and reasonable and ComReg had failed to explain why it has not taken them on board. Eircom expressed the view that its response to the WLAWCA Consultation also raised concerns regarding how the ComReg proposals in respect of SLAs for new products could negatively impact product development timelines. In this respect, Eircom considered that delays in the launch of new products/services or product/service enhancements could negatively impact on innovation and competition in the market. Eircom indicated that ComReg had also failed to address these concerns in the current proposals or explain why it does not consider the concerns raised to be valid¹⁵²².

Suspension of an SLA

- A1.663 ALTO and BT stated that Eircom should not be permitted to suspend the application of a contractual SLA without Eircom triggering the *Force Majeure* contractual conditions in the SLA. ALTO stated that Eircom's approach to declaring Storm Mode¹⁵²³ is not contractual. ALTO and BT noted that the operation of Storm Mode depends on the goodwill of industry but Storm Mode does not suspend SLAs^{1524 1525}.
- A1.664 BT noted that following discussion with Eircom, at the ComReg hosted Industry forum, it was agreed that faults directly relating to weather events (e.g. severe storms) could be excluded from the SLA reporting and subsequent service credits.

¹⁵²⁰ ALTO Submission, page 13.

¹⁵²¹ BT Submission Part 1, page 12.

¹⁵²² Eircom Submission, paragraph 96.

¹⁵²³ The declaration of Storm Mode requires an abnormal increase in the level of faults, such as triggered by unseasonably bad weather. An abnormal increase in faults is defined as when carry-over faults for a day are twice the normal level for that time of year and where normality cannot be restored within one week.

¹⁵²⁴ ALTO Submission, page 13-14.

¹⁵²⁵ BT Submission Part 1, page 12.

- A1.665 BT explained that the relationship between *Force Majeure* and the suspension of SLAs will need to be considered, and the consequence of an SLA suspension. In terms of the consequences, for example where the service is unavailable and the SLA is suspended there would be no rental charges during the SLA suspension period.
- A1.666 Both ALTO and BT explained that similar conditions have been incorporated in Reference Interconnect Offer ('RIO')^{1526 1527}. Therefore, conditions such as non-payment rental charges during the SLA suspension period could be included in the reference offer for the WHQA Market

Failure to meet SLA committed services levels

- A1.667 ALTO and BT agreed with ComReg's proposal related to the failure of Eircom to meet SLA committed services levels. ALTO stated that updated amendments to SLAs obligations for other markets (e.g. WLA Market, WCA Market) must be implemented in respect of the MI WHQA market^{1528 1529}.
- A1.668 BT's view is that ComReg have overlooked specific instances of faults and provision failure instances that are not counted for SLA credit calculations. BT acknowledged that there are a small number of faults/provision failures that should genuinely be excluded from SLAs (e.g. faults caused by lightning). BT noted that amendments were agreed with Eircom in 2017 for other regulated markets, and these amendments need to be applied in the leased lines market¹⁵³⁰.

¹⁵²⁶ ALTO Submission, page 14.

¹⁵²⁷ BT Submission Part 1, page 12-13.

¹⁵²⁸ ALTO Submission, page 14.

¹⁵²⁹ BT Submission Part 1, page 13.

¹⁵³⁰ BT Submission Part 1, page 13.

- A1.669 Eircom noted that ComReg had amended the text in Section 15.2 (v) of the Draft Decision Instrument set out in Annex 4 of the 2018 Further Consultation relative to the original text proposed in Section 8.2 (vi) [sic]¹⁵³¹ of the Draft Decision Instrument set out in the WLA/WCA Consultation. Eircom referred to the amended text as: Eircom shall “ensure that SLAs specify the circumstances that trigger the payment of Service Credits, such as, but not limited to, a failure by Eircom to achieve committed service levels, or the occurrence of certain specified events (such as, but not limited to, incidents of service outage or deterioration), and/or other such criteria as appropriate”¹⁵³².
- A1.670 Eircom stated that ComReg’s inclusion of the text quoted above (in paragraph A1.669) appears to unreasonably broaden the scope beyond the scope of SLAs and that the purpose of an SLA is to specify service levels and provide for credits where those specified service levels are not met. Furthermore, Eircom noted that there should be a clear methodology for calculating the service credits when the specified service levels are not met, as set out in the SLA. In Eircom’s opinion, there is no justification for any proposal beyond specifying service levels and providing service credits where those specified service credits are not met. Eircom does not accept ComReg’s proposals. Eircom noted that ComReg’s proposed text (quoted in paragraph A1.669 above) is not appropriate in the context of the WHQA market¹⁵³³.
- A1.671 Eircom noted¹⁵³⁴ that ComReg had amended the text in Section 15.2 (vii) of the Draft Decision Instrument set out in Annex 4 of the 2018 Further Consultation relative to the original text proposed in Section 8.3 (viii) of the Draft Decision Instrument set out in the WLA/WCA Consultation.

¹⁵³¹ This reference should be 8.3

¹⁵³² Eircom Submission, paragraph 97.

¹⁵³³ Eircom Submission, paragraph 97-98.

¹⁵³⁴ Eircom Submission, paragraph 99.

- A1.672 Eircom disagreed with the proposed obligations in Section 15.2 (vii)¹⁵³⁵ of the Draft Decision Instrument set out in the 2018 Further Consultation. Eircom noted that the purpose of an SLA is to specify service levels and provide for credits where those specified service levels are not met. Eircom stated that service credits will only be “triggered” by a failure to meet a specified performance standard and the methodology to calculate that credit will be as set out in the SLA.
- A1.673 Eircom stated that there is “no justification for any proposal beyond this¹⁵³⁶” and therefore not accepted by Eircom. Eircom noted that ComReg’s proposal in terms of calculating loss on an individual basis each time there is a failure to meet a relevant standard is completely unworkable and does not provide for any legal or regulatory certainty.
- A1.674 Eircom noted that the proposed obligations with respect to SLAs is inappropriate for the leased lines market where the SLA penalties for non-compliance are fixed amounts, for example €200 per process point missed.
- A1.675 Eircom highlighted the obligation requiring Eircom to “ensure that the application of Service Credits, where they occur, shall be applied automatically and in a timely and efficient manner”¹⁵³⁷.
- A1.676 Eircom stated that ComReg has not explained why it proposes to add this to the SLA obligations and what issue (if any) it is seeking to address, noting that it can be timely and efficient for SLA Service Credits to be processed manually. Eircom stated that it did not believe a requirement to ‘automate’ the Service Credit process can be justified and for that reason believe ComReg does not have the legal basis for this requirement.

¹⁵³⁵ This stated “*Without prejudice to the generality of Section 15.1 above, pursuant to Regulation 12(3) of the Access Regulations, Eircom shall: (viii) ensure that circumstances which trigger the payment of Service Credits and the methodology for calculating the quantum of Service Credits, taken together, are fair and reasonable in that they adequately incentivise Eircom to deliver an efficient level of service quality and allow Access Seekers to recoup at a minimum the direct costs and any other loss of value that the Access Seekers incur as a result of the circumstances that triggered the payment of Service Credits*”

¹⁵³⁶ Eircom Submission, paragraph 98 “to specify service levels and provide for credits where those specified service levels are not met and there should be a clear methodology for calculating same set out in the SLA.”

¹⁵³⁷ Eircom Submission, paragraph 100.

Requirements governing fairness, reasonableness and timeliness of Access

ComReg's Assessment of Respondents' Views

A1.677 ComReg's assessment of Respondents' views on the proposed SLA remedies is classified into the following themes:

- (a) SLAs (discussed in paragraphs A1.678 to A1.689 below);
- (b) New product development and changes to existing products (discussed in paragraphs A1.690 to A1.698 below);
- (c) Suspension of an SLA (discussed in paragraphs A1.699 to A1.700 below); and
- (d) Failure to meet SLA committed service levels (discussed in paragraphs A1.701 to A1.710 below);

SLAs

A1.678 ComReg disagrees with Eircom's view that the WHQA consultation process is flawed because of similarities between SLA remedies in the WHQA, WLA, WCA and FACO Markets. SLAs are intended to minimise the risk of Eircom engaging in actual or constructive refusal to supply effective and efficient Access to MI WHQA products services and associated facilities¹⁵³⁸ in the Zone B MI WHQA Markets.

A1.679 Potential competition problems such as engaging in actual or constructive refusal to supply effective and efficient access are present across the *ex ante* markets. Since competition problems can be similar across *ex ante* markets, the resulting SLA remedies to address these competition problems can also be similar or even exactly the same across markets.

A1.680 Even though the SLA remedies are similar between the WHQA and WLA/WCA markets, ComReg has fully considered the specific competition problems¹⁵³⁹ in the Zone B MI WHQA Markets (and related markets) including the appropriateness and necessity of SLA remedies when drafting them.

¹⁵³⁸ Including Related MI WHQA Elements.

¹⁵³⁹ Refer to Section 9 of this Decision.

- A1.681 Furthermore, ComReg will seek to impose remedies that most effectively address the competition problems in the market to ensure long-term sustainable competition. ComReg considers BEREC's common position and the remedies imposed in other *ex ante* markets and, where justified and proportionate, best practices that have been identified will be incorporated into the remedies of the market under review.
- A1.682 ComReg disagrees with Eircom's interpretation of paragraph 9.137 of the 2018 Further Consultation that there is any bias towards Eircom. Paragraph 9.137 merely outlined that potential competition may arise in the MI WHQA Markets in relation to product performance, and explained that effective and timely SLAs are required in order to ensure long-term sustainable competition to the ultimate benefit of End Users.
- A1.683 ComReg disagrees with Eircom's view that ComReg has tried to blame Eircom for delaying the conclusion of SLAs. ComReg recognises that there are multiple stakeholders involved in negotiating SLAs. ComReg has simply noted SLA negotiations can be protracted and in the 2018 Further Consultation summarised¹⁵⁴⁰ the timeline of an SLA negotiation for illustrative purposes.
- A1.684 In ComReg's view, having a structured SLA negotiation process with a targeted deadline to make a BAFO will help to prevent protracted SLA negotiations.
- A1.685 Furthermore, in the case of a dispute relating to SLAs (e.g. negotiating in good faith) a BAFO and Eircom's engagement with Access Seekers leading up to the BAFO could be used as evidence.
- A1.686 ComReg agrees with Eircom that an SLA request should include a clear set of requirements and the reasoning as to why a new or amended SLA is required. ComReg's position is that the SLA negotiation period should only commence when Access Seekers set out their requirements, which in practice means that the SLA request is documented, clear, and understandable. In practice, this means that Access Seeker(s) will prepare a SoR and submit that statement of requirements as an access request to Eircom.

¹⁵⁴⁰ Paragraph 9.146 of the 2018 Further Consultation.

- A1.687 Eircom suggested that ComReg should confirm (i.e. express a view) whether an SLA SoR is clear and fit-for-purpose¹⁵⁴¹. In ComReg's view it would be inappropriate for ComReg to confirm whether requirements contained in a SoR are fit-for-purpose. Eircom has an opportunity as part of the product development process cycle to engage with Access Seeker(s) to seek clarifications that would reasonably be required from the Access Seeker(s).
- A1.688 ComReg agrees that the requirements noted in (in paragraph A1.660 (c), (d) and (e) above) should be included as part of the SLA process. These requirements were already catered for in the proposed obligations set out in the 2018 WHQA Consultation and are being implemented through this Decision.
- A1.689 ComReg disagrees with Eircom's view (as set out in paragraph A1.660 (f) above) that there should be a two year moratorium on Access Seekers submitting further requests for changes to an SLA following the conclusion of an SLA implementation. The market is continually changing and Access Seekers therefore need to be able to react to the requirements of their customers (End Users) in order to be able to compete effectively. A blanket moratorium as suggested by Eircom would prevent Access Seeker(s) responding to potential customer needs in a timely manner.

[New product development and changes to existing products](#)

- A1.690 ComReg disagrees with Eircom's view (as set out in paragraph A1.662) that the availability of a fit-for-purpose SLA will delay the launch of new products or negatively impact on innovation and competition in the WHQA Market.
- A1.691 ComReg's position is that SLA negotiations should take place concurrent with the existing product development process phases to avoid or to minimise any impacts on product development timelines. Therefore, product development timelines will not be necessarily extended because of the requirement to conclude an SLA prior to notification to ComReg.
- A1.692 To fully understand why the conclusion of the SLA negotiations prior to notification should not affect the launch of new product, it is important to understand what a notification requires and how a notification could be linked and embedded within Eircom's product development process and phases.

¹⁵⁴¹ Eircom Submission, paragraph 95 (ii).

- A1.693 A notification to ComReg means that Eircom provides product details (i.e. products description, IPMs, SLA etc.) of all new products or product amendments to ComReg one week in advance of the same information being made available to Access Seekers. Eircom has sub-divided its product development process into three phases: (1) concept (scoping and feasibility phase), (2) under review (design phase) and (3) in-development (implementation phase).
- A1.694 In order to facilitate the product development, Eircom's development teams needs a stable set of requirements. In this case an agreed SLA is required. A stable set of requirements provides the developers with a clear understanding of the system and process changes that are required to implement the SLA. Without the SLA negotiations being concluded prior to the transition from under review to in-development phase, it would not be possible to precisely determine what process and system changes are actually required. Clear requirements are critical to the success of any project.
- A1.695 In ComReg's view, Eircom could manage its product development process so that the transition from the 'under review' to the 'in-development phase', and the conclusion of SLA negotiations can be aligned prior to notification. This approach would actually streamline and enhance the product development process rather than extending it unnecessarily. In fact the conclusion of the SLA negotiations; the transition from under review to in-development and notification should be coincident.
- A1.696 Furthermore, by ensuring that there is an appropriate SLA in place at product launch, it will ensure that the overall product development timeline is shortened. Completing a product development cycle without key features such as appropriate SLAs means that the product or service is not fully developed at launch. This is likely to lead to a second round of development, which in effect will delay the availability of effective WHQA products or services to the market.
- A1.697 In ComReg's view, it is important for competition that all features necessary to make the product successful (including a minimum standard of performance) are included at launch therefore avoiding multiple developments cycles, which are time consuming and make product development inefficient. Avoiding a sequence of developments will reduce the overall period required to implement effective access products.

A1.698 ComReg notes that the WHQA market review and the WLAWCA market review and Decision¹⁵⁴² are independent entities. Therefore, ComReg will only assess Eircom's views which are directly related WHQA market review and that are contained in Eircom's WHQA Submission.

Suspension of an SLA

A1.699 ComReg agrees with ALTO and BT views as summarised in paragraphs A1.663 to A1.666 that the criteria and processes to suspend the SLA should be clear.

A1.700 ComReg's position is that the SLA obligations proposed in the 2018 WHQA Consultation which require the inclusion, where appropriate, of a comprehensive set of conditions governing the circumstances for suspension of the SLA, adequately addresses the concerns of ALTO and BT.

Failure to meet SLA committed service levels

A1.701 ComReg's disagrees with Eircom view as summarised in paragraphs A1.672 to A1.673 above that scope of this obligation is unreasonably broad.

A1.702 In ComReg's view, the examples noted (service outage or deterioration) are legitimate events that could be within the scope of the SLA. ComReg is not proposing that an SLA and resulting service credits should be all encompassing. The committed service levels and related service credit must be fair, reasonable and sufficient to incentivise Eircom to deliver an efficient level of service quality.

A1.703 If an Access Seeker, in conducting SLA negotiations, is seeking to include events (SLA parameters) within the scope of the SLA that are in Eircom's view unreasonable, then in such circumstances for example Eircom could exclude proposed event(s) that it considers inappropriate with objective justification from the BAFO.

A1.704 Where an Access Seeker(s) is of the view that an SLA parameter has been unjustifiably excluded from the SLA, in such circumstances, an Access Seeker can raise a dispute with ComReg.

A1.705 ComReg notes that only tasks for which Eircom is responsible should be included in the SLA for WHQA products, services and facilities.

¹⁵⁴² Market Review - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products, Response to Consultation and Decision, ComReg 18/94, Decision D10/18, 19 November 2018.

- A1.706 ComReg disagrees with Eircom's view as set out in paragraph A1.673 above. In ComReg's view, calculating service credits on an individual basis each time there is a failure to meet a relevant standard is completely unworkable. In ComReg's view the direct costs associated with failure to meet a committed service can be determined or can be reasonably approximated.
- A1.707 For example, if Eircom provides a delivery confirmation date to an Access Seeker (e.g. Access Seeker schedules a customer site visit based on the delivery confirmation date) and in the event that Eircom fails to deliver the circuit, the actual time that the Access Seeker's technician spent at the customer site can be calculated. Therefore, allowable direct costs and a method of calculating them can be incorporated into the SLA.
- A1.708 ComReg notes that a mechanism to determine the direct costs to be included in the service credit quantum could be negotiated as part of the SLA negotiations with Access Seekers.
- A1.709 In relation to Section 15.2 (vii) of the Draft Decision Instrument, upon reflection the reference to any other loss of value maybe inappropriate. Therefore, ComReg is amending the obligation to limit the scope any other reasonable loss of value.
- A1.710 Eircom appears to have misinterpreted the proposed obligation in Section 15.2 (viii)¹⁵⁴³ of the Draft Decision Instrument. Eircom is not required to automate the processing of service credits in the WHQA Market. "Automatically" in the context of this remedy means that when an event occurs which triggers the payment of a service credit, Eircom will be required to make the service credit payment without the Access Seeker needing to request payment i.e. the payment of the service credit is automatic i.e. proactively. Eircom's internal process for administering and calculating service credits payments is out of scope. Once the payment of service credits to Access Seekers is proactively managed in a timely and efficient manner (i.e. no undue burden on the Access Seeker); this is the intended meaning of 15.2 (viii).

Requirement regarding Timeliness of Product Development

Respondents' Views

- A1.711 Respondents' views on this proposed remedy is summarised in paragraphs A1.717 to A1.787 below.

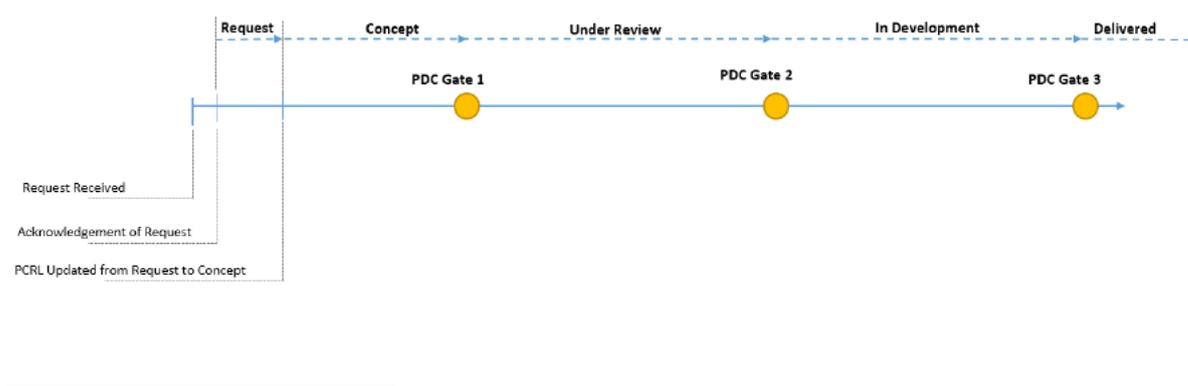
¹⁵⁴³ This required Eircom to "ensure that the application of Service Credits, where they occur, shall be applied automatically and in a timely and efficient manner".

A1.712 To explain ComReg’s approach to the obligations being imposed with respect to timeliness of product development and to assist the reader in better understanding the points raised by Respondents, before summarising the Respondents’ views, ComReg provides the following information by way of background.

A1.713 The Eircom Regulated Access Product (‘RAP’) Product Development Process¹⁵⁴⁴ includes a series of steps from the Access Seeker’s initial request for Access, through to the provision of Access via the product launch. ComReg has provided a high-level overview of Eircom’s RAP Product Development Process, as illustrated in Figure 93 below.

A1.714 Figure 93 illustrates five key stages of Eircom’s RAP Product Development Process, namely those steps identified as ‘Request’, ‘Concept’, ‘Under Review’, ‘In Development’ and ‘Delivered’¹⁵⁴⁵ and the associated Product Development Council¹⁵⁴⁶ (‘PDC’) gates¹⁵⁴⁷.

Figure 93 Illustrative view of Eircom’s gated RAP Product Development Process



¹⁵⁴⁴ The RAP Product Development Process is the Eircom process that includes a series of steps to bring an Access request from initial request through the analysis, design, development and launch of the new or amended product, service or facility.

¹⁵⁴⁵ The key stages of the RAP Product Development Process and their relationship to PDC gates are described in Eircom document ‘open eir RAP Wholesale Products Product Change Request Process’ V2.0, dated 31/07/2019.

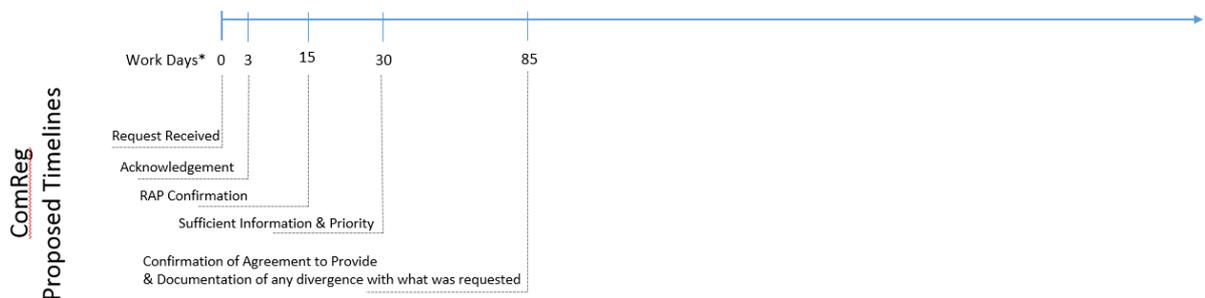
¹⁵⁴⁶ In the Eircom document: ‘Wholesale PDC Terms of Reference, Wholesale PDC PMO, 1st Jan 2015 –v3.0’, the role of the PDC is described as follows: [Redacted]

¹⁵⁴⁷ Three decision points are shown in Figure 93, each corresponding to a meeting of the Eircom PDC where decisions are made at particular milestones. These decision points are referred to by Eircom as PDC Gates.

A1.715 ComReg has cited Eircom's RAP Product Development Process in order to provide a clear perspective on the proposed obligations governing product development timelines. In ComReg's view, the proposed obligations with respect to such timelines relate to Milestones¹⁵⁴⁸ that would reasonably be required for the management and execution of any RAP Product Development Process¹⁵⁴⁹. Therefore, these or similar milestones are likely to be required independent of Eircom's current or any future RAP Product Development Process.

A1.716 An illustration of the obligations proposed in the 2018 Further Consultation regarding timelines for product development is set out in Figure 94 below.

Figure 94 Summary illustration of proposed requirements with respect to timeliness of product development



*Work Days illustrated represent the number of work days since receipt of request.

¹⁵⁴⁸ Milestones are the key points in Eircom's Product Development Process that Access Seekers would reasonably rely upon so as to track the progress of a request in that process, including, *inter alia*, decision points and points of transition associated with analysis, design, development and launch stages for the request and the date that the product, service or facility will be made available to Access Seekers.

¹⁵⁴⁹ ComReg's position is that any product development process must include a number of steps which commence with a request for a new or amended product or service, i.e. an Access request. This request must be reviewed by Eircom to confirm it relates to a regulatory obligation imposed in a regulated market. If the regulatory basis for the request is confirmed, the request must then be analysed to determine its feasibility and reasonableness and then subsequently designed, developed and launched. Therefore, ComReg has considered the imposition of obligations that are not specific to any particular product development process but which reflects generic steps which must be taken on foot of a request for Access, and which, therefore, must be common to any product development process that may be implemented by Eircom.

[Respondents' views on proposed timeliness of product development obligations](#)

- A1.717 ALTO and BT agreed with the remedies proposed by ComReg relating to the requirements regarding Timeliness of Product Development^{1550 1551}.
- A1.718 BT¹⁵⁵² welcomed ComReg's consideration in the area of timeliness of product development. BT stated that it considers the lack of ability to influence prioritisation continues to cause serious harm.
- A1.719 While ALTO and BT agreed with the proposed Access remedies, they both expressed the view that ComReg omitted what they described as a key issue of Access to information. In this regard, these Respondents requested that an obligation be imposed on Eircom for it to provide accurate and correct information in order to support requests for Access^{1553 1554}.
- A1.720 Eircom noted that the proposed obligations regarding timeliness of product development are modelled on the timelines for product development as proposed by ComReg in its WLA/WCA Consultation, but amended by ComReg in the 2018 Further Consultation having taken account of Respondents' views to the WLA/WCA Consultation¹⁵⁵⁵. Eircom noted that ComReg did not provide any detail on how it took into account the Respondents' views to the WLA/WCA Consultation. In Eircom's view, Respondents are therefore at a disadvantage in terms of the reasoning behind ComReg's current thinking and are therefore not in a position to comment effectively¹⁵⁵⁶.

¹⁵⁵⁰ ALTO Submission, page 14.

¹⁵⁵¹ BT Submission Part 1, page 13.

¹⁵⁵² BT Submission Part 1, page 13.

¹⁵⁵³ Page 10 of BT's Submission.

¹⁵⁵⁴ Page 11 of ALTO's Submission.

¹⁵⁵⁵ Paragraph 9.199 of the 2018 Further Consultation.

¹⁵⁵⁶ Eircom Submission, paragraph 81.

- A1.721 Eircom assumed it was ComReg's intention that any comments on the proposals in its 2018 Further Consultation will feed through to the outcome of the WLA/WCA Consultation so that the obligations are consistent e.g. the product development obligations in the WLA, WCA and WHQA markets would be consistent¹⁵⁵⁷. Eircom's opinion is that EU law requires that obligations imposed by ComReg must be based on the nature of the problem identified, be proportionate and justified. Eircom stated that the obligations imposed in the WLA/WCA markets must be based on problems identified in those markets as part of the market reviews. Similarly, obligations imposed in what Eircom referred to as the WHQA market can only, in Eircom's view, be based on problems identified in that market. Eircom's view is that a 'one size fits all' approach is a breach of ComReg's obligations under EU law¹⁵⁵⁸.
- A1.722 Eircom confirmed that it operates a single product development process for RAP developments. In this context, Eircom described that detailed information has been provided to ComReg as part of the RGM review and expressed the view that it was not appropriate that RGM discussions are included in a public consultation on a particular market¹⁵⁵⁹.
- A1.723 Eircom stated¹⁵⁶⁰ that it shares ComReg's view¹⁵⁶¹ that:

“A properly functioning product development process is particularly important for ensuring the development of effective competition in downstream markets and to allow Access Seekers to plan for and provide innovative services to downstream customers, including End Users. Uncertainty with regard to the content and timing of product updates creates uncertainty in the market and can potentially lead to increased costs across the industry and to concerns regarding the availability of information to Eircom's downstream arm in advance of competing retail operators.”

¹⁵⁵⁷ Eircom Submission, paragraph 82.

¹⁵⁵⁸ Eircom Submission, paragraph 82.

¹⁵⁵⁹ Eircom Submission, paragraph 83.

¹⁵⁶⁰ Eircom Submission, paragraph 84.

¹⁵⁶¹ As set out in paragraph 9.184 of the 2018 Further Consultation.

- A1.724 Eircom expressed the view that this is why it has developed and has continued to evolve its product development process. Eircom stated further that since the WLA/WCA Consultation that it has continued to enhance its RAP development process in terms of the format of the Customer Requirements Document¹⁵⁶², to encourage requestors to provide sufficient and clear information including material relevant to prioritisation, and enhancing the transparency of the prioritisation process.
- A1.725 Eircom further stated¹⁵⁶³ that, notwithstanding its concerns as summarised in paragraphs A1.720 to A1.724 above, it has endeavoured to comment on what it considers to be the latest iteration of ComReg's product development proposals. Eircom reiterated its view that its ability to effectively comment is hampered because in its view ComReg has not elaborated on how it has considered points raised in Respondents' comments to the separate WLA/WCA Consultation. In addition, Eircom was of the view that ComReg has not presented any justification for the proposed product development timelines set out in Section 14.3 of the Draft Decision Instrument. In Eircom's view this concern, which was raised in the WLA/WCA Consultation, has not been addressed and that the consultation process around the 2018 Further Consultation is consequently deficient.

Requirements regarding Timeliness of Product Development

Respondents' Views

- A1.726 In the 2018 Further Consultation, ComReg proposed that a suite of obligations be imposed upon Eircom with respect to timelines to be reached by it during the initial stages of the product development process¹⁵⁶⁴. Respondents' views with respect to these obligations are summarised in paragraphs A1.727 to A1.735 below.

3 working days: Acknowledgement of the request

- A1.727 No Respondent expressed views on the proposed obligation for Eircom, within three (3) working days of receipt of request, to confirm in writing that the request has been received.

¹⁵⁶² An Eircom Customer Requirements Document is a template created by Eircom for capturing an Access Seeker's requirements with respect to an Access request.

¹⁵⁶³ Eircom Submission, paragraph 85.

¹⁵⁶⁴ As set out in paragraph 9.198 of the 2018 Further Consultation.

15 working days: RAP confirmation

A1.728 Eircom noted¹⁵⁶⁵ that ComReg increased the deadline on this timeline by 5 working days, relative to the timelines set out in separate WLA/WCA Consultation¹⁵⁶⁶ (being the timeline for Eircom to confirm to the Access Seeker whether or not the request is for a new or amended product, service or facility and whether or not the request falls within the scope of its obligations). While Eircom agreed with this timing change for the reasons outlined in its response to the WLA/WCA Consultation, Eircom noted that, relative to the WLA/WCA Consultation, ComReg had, in the 2018 Further Consultation, amended the wording to require that Eircom confirms that a request is for a new product/service or for an amended product/service¹⁵⁶⁷. Eircom stated that it already does this voluntarily and noted that ComReg is attempting to hard code Eircom's practice into the proposed obligations. Eircom considered that ComReg was intervening to impose obligations in circumstances where, in Eircom's opinion, there is clearly no market need. Eircom was of the view that this is entirely disproportionate and ComReg was going beyond its statutory powers and EU law obligations¹⁵⁶⁸.

¹⁵⁶⁵ Eircom Submission, paragraph 87.

¹⁵⁶⁶ Eircom Submission, paragraph 87.

¹⁵⁶⁷ ComReg interprets that Eircom is referring to the difference in the wording of the obligation proposed in the 2018 Further Consultation and the wording of the draft decision instrument, included in appendix 14 of the WLA/WCA Consultation, which sets out that Eircom shall, from the date of receipt of a request (unless otherwise agreed with ComReg) within ten (10) working days inform the Undertaking whether or not the request falls within the scope of Eircom's obligations.

¹⁵⁶⁸ Eircom Submission, paragraph 87.

30 working days: confirmation of sufficient information and priority

- A1.729 Eircom noted¹⁵⁶⁹ that in the 2018 Further Consultation, ComReg increased the deadline, by 5 working days, relative to the WLA/WCA Consultation, to achieve the timeline for Eircom to confirm whether the requesting Access Seeker has provided it with sufficient information to process the request¹⁵⁷⁰. While Eircom had no objection to the mechanism to allow an extension to the deadline by which such confirmation is to be provided, it was of the view that the underlying reasonableness of the proposed obligation is questionable. In Eircom's view, ComReg is placing an obligation on Eircom, the compliance with which is reliant on the actions of other parties. Eircom requested ComReg to clarify how compliance will be enforced in respect of this obligation where the lack of action of an Access Seeker means there is insufficient information¹⁵⁷¹.
- A1.730 Eircom noted in relation to paragraph 9.186 of the 2018 Further Consultation that ComReg stated its view that Access Seekers should:
- “have adequate input into the prioritisation of product developments (including relative to those product developments which appear to be related to and which emanate from Eircom's downstream arm)”*.
- A1.731 Eircom stated that this was different to what is proposed in Section 14.3 (iii) of the Draft Decision Instrument which asks the Access Seeker to rank the relative merits of the requests it has submitted¹⁵⁷².

¹⁵⁶⁹ Eircom Submission, paragraph 88.

¹⁵⁷⁰ Including the Access Seeker's view on the priority of the request relative to other requests pertaining to the Zone B MI WHQA Markets that have already been submitted by that Access Seeker, as set out in Section 14.3 (iii) of the Draft Decision Instrument of the 2018 Further Consultation.

¹⁵⁷¹ Eircom Submission, paragraph 88.

¹⁵⁷² Eircom Submission, paragraph 88.

A1.732 Eircom made reference to paragraph 9.186 of the 2018 Further Consultation, in which ComReg expressed its preliminary view that it is important that Access Seekers have adequate input into the prioritisation of product developments (including relative to those product developments which appear to be related to and which emanate from Eircom's downstream arm) and have clarity with respect to the criteria used by Eircom for such prioritisation. Eircom expressed the view that it does not accept what it described as the apparent negative bias in ComReg's view and that in any event, it does not declare the identity of the requestor on the basis of confidentiality and it does not believe that practice should be changed¹⁵⁷³.

85 working days: confirmation of whether to provide the request

A1.733 Eircom noted¹⁵⁷⁴ that relative to timeline proposed in the WLA/WCA Consultation, ComReg had in the 2018 Further Consultation, extended the deadline to achieve the timeline relating to confirmation of whether Eircom agrees to provide the requested new or amended product, service or facility to 85 working days¹⁵⁷⁵. Eircom expressed the view that ComReg provided no explanation for this extension. While not providing further comment on the proposed obligation for the 85 working day timeline, Eircom welcomed what it referred to as ComReg's recognition that Eircom's product development process is dynamic and outputs can be subject to change during the process. As such Eircom described that it has no objection to the proposed obligation to fully explain (i.e. objectively justify) to the relevant Access Seeker(s) why a particular development, which it previously considered was reasonable and that it had previously agreed to develop, requires amendment or cannot progress to completion¹⁵⁷⁶.

¹⁵⁷³ Eircom Submission, paragraph 89.

¹⁵⁷⁴ Eircom Submission, paragraph 90.

¹⁵⁷⁵ Section 14.3 (iv) of the Draft Decision Instrument of the 2018 Further Consultation.

¹⁵⁷⁶ As set out in Section 14.3 (iv) of the Draft Decision Instrument in the 2018 Further Consultation.

- A1.734 Eircom suggested¹⁵⁷⁷ that in the interest of brevity that the obligation set out in Section 14.3 of the Draft Decision Instrument¹⁵⁷⁸ could be expressed as ‘fully explain’ or ‘objectively justify’, expressing the view that it did not see the need for both expressions.
- A1.735 Eircom noted that in the 2018 Further Consultation, there was no equivalent obligation proposed to that in the WLA/WCA Consultation for Eircom to ensure that Access requests received on foot of different decision instruments are met concurrently¹⁵⁷⁹. Eircom expressed the view that such an obligation was not appropriate for the reasons set out in its response to the WLA/WCA Consultation and welcomed its removal from the product development obligations¹⁵⁸⁰.

Requirements regarding Timeliness of Product Development

ComReg’s Assessment of Respondents’ Views

- A1.736 ComReg’s assessment of Respondents’ views on this proposed remedy is discussed in paragraphs A1.737 to A1.787 below.

¹⁵⁷⁷ Eircom Submission, paragraph 90. ComReg’s notes that Eircom referenced Section 14.4(iv) of the Draft Decision Instrument, contained in Appendix 4 of the WLA/WCA Consultation. ComReg interprets that that the intended reference was Section 14.3(iv) of the Draft Decision Instrument.

¹⁵⁷⁸ Section 14.3(iv) of the Draft Decision Instrument, contained in Appendix 14 of the 2018 Further Consultation states that within eighty five (85) working days, unless otherwise agreed with ComReg, confirm in writing to the Access Seeker whether it agrees to provide the requested new or amended product, service or facility. Where the request is refused (or refused in part), Eircom shall comply with its obligations to give written reasons for its decision at the time of refusal. In the case of any divergence between Eircom’s product proposal and what was originally requested, the relevant details such as each of the objective reasons for any such divergence shall be documented and provided by Eircom to the relevant Access Seeker(s) within eighty five (85) working days in a fair and reasonable manner. Should further analysis, by Eircom, during the RAP Product Development Process, give rise to new issues or concerns that bring into question the reasonableness of the Access request, then Eircom should fully explain (i.e. objectively justify) to the relevant Access Seeker(s) why a particular development, which it previously considered was reasonable and that it had previously agreed to develop, requires amendment or cannot progress to completion.

¹⁵⁷⁹ Section 8.2 of the Draft Decision Instrument contained in Appendix 14 of the WLA/WCA Consultation states that “[w]ithout prejudice to the generality of Section 8.1 above and pursuant to Regulation 12(3) of the Access Regulations, where Eircom receives a request for Access (including Access to those products, services and facilities referred to in Sections 7 and 8 of this Decision Instrument) in accordance with the requirements of this Decision Instrument at the same point in time as a request for another wholesale access product, service or facility, on foot of another Decision Instrument issued by ComReg, Eircom shall ensure that both access requests are met concurrently”.

¹⁵⁸⁰ Eircom Submission, paragraph 91.

- A1.737 ComReg notes the support of ALTO and BT with respect to the remedies proposed by ComReg in the 2018 Further Consultation relating to the requirements regarding Timeliness of Product Development.
- A1.738 ComReg has also considered the views of ALTO and BT requesting that an obligation is imposed on Eircom requiring it to provide accurate and correct information in order to support requests for Access¹⁵⁸¹. ComReg does not agree that a specific obligation for the provision of accurate and correct information is required. In the 2018 Further Consultation ComReg proposed to impose an obligation on Eircom requiring it to negotiate in good faith with Access Seekers requesting Access¹⁵⁸². ComReg considers that this obligation, in addition to the conditions of Access¹⁵⁸³ and transparency¹⁵⁸⁴ obligations being imposed with respect to product development, is a more appropriate obligation to address potential issues that may otherwise arise in relation to product development. ComReg also notes that the proposed obligation to negotiate in good faith is consistent with the wording set out in regulation 12(2)(b) of the Access Regulations.
- A1.739 ComReg does not agree with the views expressed by Eircom¹⁵⁸⁵ that Respondents were at a disadvantage in terms of the reasoning behind ComReg's justification for the proposed obligations on timeliness of product development and disagrees that Respondents were not in a position to comment effectively.

¹⁵⁸¹ As summarised in paragraph A1.719 above.

¹⁵⁸² As set out in Section 7.4(i) of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation.

¹⁵⁸³ As summarised in paragraphs 10.210 to 10.212 above.

¹⁵⁸⁴ As summarised in paragraphs 10.340 to 10.342 above.

¹⁵⁸⁵ As summarised in paragraph A1.720.

- A1.740 The 2018 Further Consultation provided an opportunity for all Respondents to express their views with respect to the proposed obligations for the Zone B MI WHQA Markets. ComReg notes that while Eircom has commented on certain proposed obligations with respect to timeliness of product development it has decided not to avail of the opportunity to comment on others. In ComReg's view, Eircom as owner of its product development process and having access to information on the effort and timelines for RAP developments was not disadvantaged with regards to commenting on whether it considers the proposed obligations to be proportionate. The justification for the proposed obligations on timeliness of product development is expressed in the 2018 Further Consultation¹⁵⁸⁶ and is expanded upon in paragraphs A1.742 to A1.787 below.
- A1.741 ComReg notes that no other Respondents raised concerns similar to those raised by Eircom with respect to the ability to comment effectively on the remedies proposed governing the timeliness of product development.
- A1.742 As summarised in paragraph A1.721 above, Eircom assumed it is ComReg's intention that any comments on the proposals in its 2018 Further Consultation will feed through to the outcome of the WLA/WCA Consultation so that the obligations are consistent. ComReg considers that competition problems can in some cases be similar across markets subject to *ex ante* regulation and this may result in similar remedies being proposed. ComReg consults separately on each relevant market, providing an opportunity for all Respondents to express their views with respect to the suitability of the proposed remedies for the specific relevant market. As a result of responses it receives, ComReg takes into account the views expressed by Respondents which may, if appropriate, result in amendments to the remedies to be imposed. ComReg does not intend to automatically align remedies across markets for the sake of consistency but to impose the most suitable remedies that most effectively address current or potential competition problems and the needs of the relevant market to ensure long-term sustainable competition. ComReg nonetheless recognises that there are efficiencies to be gained where remedies can be appropriately aligned.
- A1.743 As summarised in paragraph A1.721 above, Eircom expressed the view that obligations imposed in a market can only be based on competition problems identified in that market.

¹⁵⁸⁶ As discussed in paragraphs 9.183 to 9.196 and 9.199 to 9.202 of the 2018 Further Consultation.

- A1.744 In the 2018 Further Consultation, ComReg set out its preliminary view¹⁵⁸⁷, with respect to concerns regarding the development of wholesale regulated access products ('RAPs') generally¹⁵⁸⁸, and the importance of ensuring an effective product development process in the Zone B MI WHQA Markets. In addition, ComReg set out its preliminary view that specific obligations relating to the timeliness of product development should be imposed on Eircom in this market^{1589 1590}. The 2018 Further Consultation also set out ComReg's preliminary view that the Zone B MI WHQA Markets is not likely to be effectively competitive and that Eircom should be designated as having SMP in this market¹⁵⁹¹. The proposed obligations with respect to timeliness of product development are intended to address actual¹⁵⁹² or potential competition problems that can be experienced by Access Seekers during the early stages of the product development process.
- A1.745 ComReg notes that BT¹⁵⁹³ welcomed ComReg's consideration in the area of timeliness of product development. In addition, ComReg notes BT's view that timeliness and a lack of ability to influence prioritisation continues to cause serious concern.

¹⁵⁸⁷ Paragraph 9.188 of the 2018 Further Consultation.

¹⁵⁸⁸ Such as those raised in Cartesian's Operational Assessment of eir's Regulatory Governance Model, Cartesian, July 2017, ComReg Document No.17/64(b) ('**Cartesian Report**').

¹⁵⁸⁹ Paragraph 9.188 of the 2018 Further Consultation.

¹⁵⁹⁰ The justification for the obligations with respect to timeliness of development, proposed in the 2018 Further Consultation, is set out in paragraphs 9.183 to 9.197 of the 2018 Further Consultation.

¹⁵⁹¹ Paragraphs 5.190 to 5.192 of the 2018 Further Consultation.

¹⁵⁹² Such as those referred to in paragraphs A1.746 to A1.747 below.

¹⁵⁹³ As summarised in paragraph A1.718 above.

- A1.746 ComReg notes that the Cartesian Report describes what it considers as wide differences in product development elapsed timeframes for those cases examined by Cartesian, with such differences not explained by the complexity of the development work¹⁵⁹⁴. ComReg also notes that in this report Cartesian also described that its product case analyses and product development chronology analyses further highlighted process deficiencies and differences in elapsed time between products being developed for Eircom's downstream businesses and those of other operators¹⁵⁹⁵.
- A1.747 In addition, ComReg notes that the concerns raised in the Cartesian Report¹⁵⁹⁶ with respect to Eircom's product development process were not limited to a specific regulated market. In addition, Cartesian's analysis of product development requests since 2012, which indicated that Eircom's projects for Access Seekers took significantly longer than Eircom's downstream business' products to progress, was based on RAP developments for a number of markets.
- A1.748 ComReg notes that Eircom operates a single product development process for RAP developments¹⁵⁹⁷. ComReg considers that delays with respect to agreeing product specifications in a timely manner can also arise for Access Seekers in the Zone B MI WHQA Markets.
- A1.749 Having regard to the competition problems set out in the 2018 Further Consultation¹⁵⁹⁸, as well as consideration of Respondents' view above¹⁵⁹⁹, ComReg's position is that *ex ante* regulatory obligations with respect to timeliness of development are required in the Zone B MI WHQA Markets. In ComReg's view, the obligations being imposed will provide certainty to Access Seekers during the initial key stages of Eircom's assessment of Access requests. ComReg assesses Respondents' views with respect to the specific obligations proposed in paragraphs A1.752 to A1.787 below.

¹⁵⁹⁴ Page 8 of the document Operational Assessment of eir's Regulatory Governance Model, Cartesian, July 2017, ComReg Document No.17/64(b).

¹⁵⁹⁵ Page 10 of the document Operational Assessment of eir's Regulatory Governance Model, Cartesian, July 2017, ComReg Document No.17/64(b).

¹⁵⁹⁶ Operational Assessment of eir's Regulatory Governance Model, Cartesian, July 2017, ComReg Document No.17/64(b). ComReg notes that the development cases considered in the Cartesian Report relate to developments in the WPNIA, FACO and WBA markets.

¹⁵⁹⁷ As stated by Eircom in paragraph 83 of its Submission.

¹⁵⁹⁸ As set out in paragraphs 9.183 to 9.197 of the 2018 Further Consultation.

¹⁵⁹⁹ Paragraphs A1.737 to A1.748 above.

- A1.750 As summarised in paragraph A1.722 Eircom described that detailed information has been provided to ComReg as part of the Eircom's RGM review and expressed the view that it was not appropriate that RGM discussions are included in a public consultation on a particular market.
- A1.751 In its consideration of the proposed timeliness of product development obligations in the 2018 Further Consultation, ComReg has made reference to the Cartesian Report. ComReg notes that the Cartesian Report is a published document and that ComReg has not referenced any redacted information from this report in the 2018 Further Consultation. ComReg disagrees with Eircom's view above and considers that it is entirely appropriate that it takes account of available sources of information when considering what remedies should be imposed in a regulated market.

3 working days: Acknowledgement of the request

- A1.752 ComReg notes that Eircom has not commented on the obligation proposed in the 2018 Further Consultation that within three (3) working days of receipt of request, that Eircom confirm in writing that the request has been received.
- A1.753 As part of its assessment of Respondents' views in respect of its consultation on the WLA and WCA markets, ComReg decided that the timelines for acknowledgement of the request for a RAP development shall apply from the point-in-time of receipt of a request, with the request to be in the form of a written request made by the Access Seeker. In addition, ComReg's position was that the written request from the Access Seeker should document the request in a clear and understandable manner. ComReg considers that it is appropriate that these conditions are also applicable to requests for RAP developments made in relation to the Zone B MI WHQA Markets.
- A1.754 Such an approach allows for the Access Seeker to document its requirements and provides for a clear point-in-time from which timelines can be measured. ComReg notes that it is incumbent upon Eircom to ensure that it clearly explains to all Access Seekers and Eircom's downstream arm, that a written request must be submitted in all cases.

- A1.755 Having regard to the above, including paragraphs A1.753 and A1.754, ComReg has therefore decided to amend the requirement set out in Section 14.3(i) of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation¹⁶⁰⁰. This requirement is now amended such that the acknowledgement is to be provided by Eircom to the Access Seeker within three (3) working days of receipt of a request, with the request to be in the form of a written request made by the Access Seeker.
- A1.756 A written request could, for example, take the form of the submission of a Statement of Requirements ('SOR')¹⁶⁰¹ or Customer Requirements Document. The date of receipt of a written request, made by an Access Seeker to Eircom, is considered by ComReg to be the reference point from which the timeline for acknowledgement of the request and subsequent timelines shall be measured.
- A1.757 In ComReg's view, the obligation set out in paragraph 10.211(a) and as amended in paragraph A1.755 aligns with Eircom's current RAP Product Development Process. ComReg also notes that it is reasonable to expect that an acknowledgement of an Access request would be part of any product development process.

15 working days: RAP confirmation

- A1.758 As summarised above¹⁶⁰², Eircom agreed with the proposed duration of 15 working days for the obligation relating to Eircom confirming to the Access Seeker whether or not the request is for a new or amended product, service or facility and whether or not the request falls within the scope of Eircom's obligations.

¹⁶⁰⁰ Section 14.3(i) of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation states that "*within three (3) working days of receipt of request, confirm in writing that the request has been received*".

¹⁶⁰¹ Statement of Requirements/SOR is a document prepared by one or more Access Seekers in which the requirements of an Access request are specified.

¹⁶⁰² As summarised in paragraph A1.728 above.

- A1.759 Eircom did however express the view¹⁶⁰³ that ComReg is attempting to hard code Eircom's practice into the proposed obligations and intervening to impose obligations in circumstances where, in Eircom's opinion, there is clearly no market need¹⁶⁰⁴.
- A1.760 ComReg disagrees that it is attempting to hard code Eircom's current practice into the proposed obligations. In summary, the obligations proposed with respect to timelines have four key sub-milestones:
- (a) acknowledgement of receipt of an Access request;
 - (b) inform the Access Seeker whether its Access request falls within a regulated market;
 - (c) obtaining any additional information that is needed to progress the Access request;¹⁶⁰⁵ and
 - (d) confirmation as to whether the request is accepted or rejected.
- A1.761 In ComReg's view, these process steps are sufficiently generic to be applicable to almost any structured product development process and ComReg is not hard coding Eircom's product development process.
- A1.762 As summarised above,¹⁶⁰⁶ Eircom stated that it already confirms whether a request is for a new product/service or for an amended product/service and considered that ComReg was intervening to impose obligations in circumstances where, in Eircom's opinion, there is clearly no market need.

¹⁶⁰³ As summarised in paragraph A1.728 above.

¹⁶⁰⁴ As summarised in paragraph A1.728 above.

¹⁶⁰⁵ Including the Access Seeker's view on the priority of the request relative to other requests pertaining to the Relevant Market that have already been submitted by that Access Seeker.

¹⁶⁰⁶ Paragraph A1.728 above.

A1.763 On further consideration, ComReg has decided that the wording of the obligation relating to the 15 working day timeline¹⁶⁰⁷ would be better expressed as a requirement for Eircom to confirm whether or not the request falls within the scope of Eircom's obligations. ComReg considers that an obligation requiring Eircom to confirm to the Access Seeker whether or not the request is for a new or amended product, service or facility is not required at such an early stage of the product development process where Eircom may not have gathered or assessed sufficient information to provide such a confirmation. ComReg considers however that Eircom should provide confirmation whether or not the request is for a new or amended product, service or facility as soon as this is known to Eircom.

30 working days: confirmation of sufficient information and priority

A1.764 ComReg disagrees with the views expressed¹⁶⁰⁸ by Eircom that the proposed obligation, requiring Eircom to provide confirmation whether the requesting Access Seeker has provided it with sufficient information to process the request, is placing an obligation on Eircom which is reliant on the actions of other parties.

A1.765 The proposed obligation used the word 'whether' rather than 'that' so that Eircom is not dependent on the actions of other parties in providing confirmation as to whether the requesting Access Seeker has provided it with sufficient information to process the request.

A1.766 The obligation proposed in the 2018 Further Consultation set out that Eircom or the Access Seeker, for any particular request, could seek agreement from ComReg to extend the thirty (30) working day period within which this obligation must be discharged. On further consideration, ComReg has decided that since the obligation would be on Eircom to provide the above confirmation, a request for a derogation to meet this obligation within the thirty (30) working day period should be sought by Eircom rather than the Access Seeker.

¹⁶⁰⁷ As set out in Section 14.3(ii) of the Draft Decision Instrument contained in Appendix 4 of the 2018 Further Consultation. This Section states that within fifteen (15) working days of receipt of request, Eircom shall "*confirm to the Access Seeker whether or not the request is for a new or amended product, service or facility and whether or not the request falls within the scope of Eircom's obligations. Where an Access request is refused (or refused in part) then Eircom shall comply with Section 17.22 of the Decision Instrument in this regard and provide a unique reference to identify the request*".

¹⁶⁰⁸ As summarised in paragraph A1.729 above.

- A1.767 In cases where Eircom is seeking an extension to the 30 working day timeline due, for example, to a need to seek additional information or clarifications from Access Seekers, then a request for such an extension must be made in sufficient time in advance of this timeline to allow ComReg to assess the request and respond prior to the expiry of the 30 days. At the time of making such a request, Eircom must provide a precise description to ComReg of the information required from the Access Seeker(s) and why it is required.
- A1.768 In addition, Eircom shall demonstrate, at the time of making the request to ComReg, that this information had been requested from the Access Seeker prior to the expiry of the 30 working day timeline. Within the 30 working day period, ComReg expects Eircom to engage in good faith with the Access Seeker making the request in order to obtain all information that is reasonably required.
- A1.769 In considering whether to grant any extension request to the 30 working day timeline ComReg will, *inter alia*, assess the level and quality of engagement between Eircom and the Access Seeker(s) prior to the expiry of the 30 working day period.
- A1.770 As summarised in paragraph A1.732 above Eircom expressed the view that what is stated in paragraph 9.186¹⁶⁰⁹ of the 2018 Further Consultation is different to what is stated in Section 14.3(iii)¹⁶¹⁰ of the Draft Decision Instrument.

¹⁶⁰⁹ In paragraph 9.186 of the 2018 Further Consultation ComReg set out its preliminary view that it is important that Access Seekers have adequate input into the prioritisation of product developments (including relative to those product developments which appear to be related to and which emanate from Eircom's downstream arm) and have clarity with respect to the criteria used by Eircom for such prioritisation.

¹⁶¹⁰ Section 14.3(iii) states that "*within thirty (30) working days of receipt of request, confirm whether the requesting Access Seeker has provided Eircom with sufficient information to process the request (unless otherwise agreed between Eircom and the Access Seeker), including the Access Seeker's view on the priority of the request relative to other requests pertaining to the Zone B MI WHQA Markets that have already been submitted by that Access Seeker. During this thirty (30) day period Eircom may seek any clarifications that it may reasonably require from the Access Seeker regarding the request. Eircom or the Access Seeker may, for any particular request, seek agreement from ComReg that the thirty (30) working day period be extended*".

- A1.771 For the avoidance of doubt, in paragraph 9.186 of the 2018 Further Consultation, ComReg expressed the preliminary view that it is important that Access Seekers have adequate input into the prioritisation of product developments and that Access Seekers have clarity with respect to the criteria used by Eircom for such prioritisation. ComReg then set out the proposed obligations to be imposed upon Eircom in subsequent paragraphs. ComReg remains of the view that Eircom is to be subject to obligations governing the timeliness and transparency of product development in a manner that provides Access Seekers with input into the prioritisation of product developments. ComReg has not however proposed the text of paragraph 9.186 of the 2018 Further Consultation as a specific obligations but has stated this view as part of its reasoning for the obligations that are then set out. ComReg expects the Access Seeker's views with respect to prioritisation, as set out in Section 14.3(iii) of the Draft Decision Instrument, will be taken into account by Eircom in a manner that provides the Access Seeker with adequate input into the prioritisation of product developments. In addition, ComReg expects that Eircom will comply with the transparency obligation, set out in Section 17.22(viii) of the Draft Decision instrument¹⁶¹¹, in a manner that provides clarity with respect to the criteria used by Eircom for such prioritisation.
- A1.772 ComReg's position is that providing Access Seekers with input into the prioritisation of product developments includes, *inter alia*, providing Access Seekers with clear documentation on the process and criteria by which decisions on prioritisation are made and the means by which Access Seekers' views on the priorities to be assigned to Access requests are incorporated into this process.

¹⁶¹¹ Section 17.22(viii) states that "*Eircom shall publish the prioritisation process and the criteria used by it with respect to the prioritisation of product developments in relation to each other. Eircom shall objectively justify to Access Seekers any reprioritisation of a request that may occur from the time of the initial request until its launch*".

- A1.773 ComReg disagrees with Eircom's interpretation¹⁶¹² that there was negative bias in the view expressed by ComReg in paragraph 9.186 of the 2018 Further Consultation. The reference to Eircom's downstream arm in this paragraph was to ensure that the relative ranking of requests is relative to all Access requests, including Eircom's downstream arm, and not just those of other Access Seekers.
- A1.774 As summarised in paragraph A1.732 above, Eircom expressed the view that it does not declare the identity of the requestor on the basis of confidentiality and it does not believe that practice should be changed. For the avoidance of doubt, ComReg has not proposed an obligation that identity of requestors should be declared.

85 working days: confirmation of whether to provide the request

- A1.775 As noted in paragraph A1.740 above, Eircom did not state whether it agreed or disagreed with the suite of proposed obligations to be met within 85 working days¹⁶¹³.
- A1.776 In paragraphs A1.777 to A1.786 below, ComReg sets out the reasons why it considers a duration of 85 working days to be proportionate.

¹⁶¹² As summarised in paragraph A1.732 above.

¹⁶¹³ As set out in Section 14.3 (iv) of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation. Section 14.3 (iv) states that Eircom shall "*within eighty five (85) working days, unless otherwise agreed with ComReg, confirm in writing to the Access Seeker whether it agrees to provide the requested new or amended product, service or facility. Where the request is refused (or refused in part), Eircom shall comply with its obligations to give written reasons for its decision at the time of refusal. In the case of any divergence between Eircom's product proposal and what was originally requested, the relevant details such as each of the objective reasons for any such divergence shall be documented and provided by Eircom to the relevant Access Seeker(s) within eighty five (85) working days in a fair and reasonable manner. Should further analysis, by Eircom, during the RAP Product Development Process, give rise to new issues or concerns that bring into question the reasonableness of the Access request, then Eircom should fully explain (i.e. objectively justify) to the relevant Access Seeker(s) why a particular development, which it previously considered was reasonable and that it had previously agreed to develop, requires amendment or cannot progress to completion*".

A1.777 With reference to Eircom’s current internal RAP Product Development Process, [§< [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

A1.778 [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]].

A1.779 ComReg considers that although this decision making process is specific to the current Eircom RAP Product Development Process, it describes a decision point at which the initial analysis with respect to the request [§< [REDACTED]

[REDACTED]
[REDACTED]].

ComReg considers that it is likely that, at this decision point Eircom will have sufficient information in order to determine whether or not a request is reasonable and therefore whether the Access request should be met¹⁶¹⁷. ComReg notes, however, that should Eircom not have sufficient information at this decision point that it may request a derogation on the timeline to inform the Access Seeker as to whether the request is reasonable.

¹⁶¹⁴ [§< [REDACTED]
[REDACTED]].

¹⁶¹⁵ [§< [REDACTED]
[REDACTED]
[REDACTED]].

¹⁶¹⁶ [§< [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]].

¹⁶¹⁷ In the current Eircom Product Development process this equates to PDC Gate 1.

(a) [REDACTED]
[REDACTED]
[REDACTED]

(b) [REDACTED]
[REDACTED]

A1.783 [REDACTED]
[REDACTED]
[REDACTED]

A1.784 [REDACTED] [REDACTED] [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]]. In other words, in the Eircom Product Development Process it takes, on average, [\approx [REDACTED]] working days from the date of receipt of a request to Eircom being in a position to consider an Access request for PDC Gate 1 approval.

A1.785 In ComReg’s view, the initial analysis leading up to the assessment of an Access request for a PDC Gate 1 decision point equates to the activities that would be required in an assessment by Eircom as to whether or not a request is reasonable. ComReg is therefore of the view that in Eircom’s current RAP Product Development Process, Eircom is likely to be in a position to consider whether a request is reasonable when such an Access request is assessed for PDC Gate 1 approval.

¹⁶²¹ Working Days have been derived from multiplying the calendar days by 73% (monthly average 22 working days divided by monthly average 30 calendar days) [\approx [REDACTED]] [REDACTED]].

¹⁶²² As set out in section titled ‘Step 1 Request’ of the Eircom RAP Product Development Process Document (‘open eir RAP Wholesale Products Product Change Request Process’ V2.0, dated 31/07/2019), requests are reviewed by Eircom at weekly RAP Product Change Request Process (‘PCRPP’) meetings. To allow for a scenario where a complex request may require additional time to evaluate whether the request falls within the scope of Eircom’s regulatory obligations, ComReg considers that a period 15 working days from receipt of request is reasonable.

Ethernet in the First Mile ('EFM')¹⁶²⁵

Respondents' Views

- A1.788 Eircom stated that the definition of MI WHQA includes EFM, hence, in Eircom's view, ComReg proposes that Eircom be subject to an obligation to provide Access to EFM¹⁶²⁶.
- A1.789 It is Eircom's view, that this obligation is not appropriate and that it does not offer an EFM wholesale product. Eircom noted that other operators develop their own EFM services using unbundled copper which Eircom is obliged to make available in the Wholesale Physical Network Infrastructure Access ('**WPNIA**') market¹⁶²⁷.
- A1.790 Eircom noted that reference to EFM should be removed from the Decision Instrument.

Ethernet in the First Mile ('EFM')

ComReg's Assessment of Respondents' Views

- A1.791 In the 2018 Further Consultation¹⁶²⁸, ComReg considered that EFM services¹⁶²⁹, exhibit sufficiently similar characteristics to those of other MI retail LL services¹⁶³⁰ and thus, are likely to be in the same market as retail MI LLs provided over, for example, Ethernet. ComReg's view was also supported by observed pricing and marketing evidence related to EFM services.
- A1.792 In the 2018 Further Consultation, while ComReg noted that EFM is in the MI WHQA market, ComReg did not propose imposing a specific remedy requiring Eircom to provide an EFM product. Should an Access Seeker submit an access request for EFM, then Eircom is obliged to assess the request to determine if the request is reasonable. If Eircom determines that the request is reasonable, then Eircom should meet the access request.

¹⁶²⁵ EFM is a set of specifications that allow SPs to run Ethernet over multiple bonded copper pairs in the access segment to connect the "first mile" from the customer to the nearest node.

¹⁶²⁶ Eircom Submission, paragraph 66.

¹⁶²⁷ Now known as the Wholesale Local Access ('**WLA**') market.

¹⁶²⁸ Paragraph 3.5 of the 2018 Further Consultation.

¹⁶²⁹ EFM is a set of specifications that allow SPs to run Ethernet over multiple bonded copper pairs in the access segment to connect the "first mile" from the customer to the nearest node.

¹⁶³⁰ From the End User perspective EFM service has the same interface as an Ethernet based Leased Line.

A1.793 Hence, ComReg does not agree with Eircom's suggestion that reference to EFM should be removed from the Decision Instrument.

CEI Access

Respondents' Views

- A1.794 Four Respondents (ALTO, BT, Vodafone and Zayo) expressed views that Eircom should be required to provide access to Civil Engineering Infrastructure ('CEI') Access or formally link to the CEI Access remedy proposed as part of the WLA Consultation.
- A1.795 ALTO stated that in January 2017, Eircom removed access restrictions on its Duct and Pole products, but is not aware of any Access Seeker currently using Eircom's ducts and poles for their access network extension on a significant scale. ComReg also notes that in its WLA/WCA Consultation¹⁶³¹ (which followed the 2016 Consultation¹⁶³²), ComReg set out a set of proposals in relation to the access remedies in the WLA and WCA markets and in particular, enhanced CEI access remedies in the WLA market. ALTO stated that these remedies must be carried over and considered in the WHQA Market¹⁶³³.
- A1.796 In ALTO's opinion, ComReg need to include in the Access remedies an obligation for full and unfettered Access to Eircom's Duct and Pole network and that ComReg must include a full suite of Duct and Pole access regulation within the MI WHQA Markets or it should formally and actively link to such. In ALTO's opinion, this was an omission from this 2018 Further Consultation and Market Review¹⁶³⁴.

¹⁶³¹ Market Reviews Wholesale Local Access (WLA) provided at a Fixed Location, Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products, ComReg Reference 16/96, 11 November 2016.

¹⁶³² "Market Review - Wholesale High Quality Access at a Fixed Location, Consultation, [ComReg Document 16/69](#), 18 August 2016" (the '2016 Consultation').

¹⁶³³ ALTO Submission, page 3.

¹⁶³⁴ ALTO Submission, page 11.

- A1.797 BT stated that ComReg made the significant assumption in the 2016 Consultation that Duct and Pole access would be available from Eircom. BT stated that remedies or links to the Duct and Pole obligations are not added to this 2018 Further Consultation¹⁶³⁵.
- A1.798 BT suggested that ComReg includes a full suite of Duct and Pole access regulation within the WHQA market or it should formally link to the CEI remedies proposed as part of the WLA Consultation. In BT's opinion, ComReg needs to add to the Access remedies an obligation for full and unfettered Access to the Eircom Duct and Pole network including to the 'lead-in' Duct¹⁶³⁶ from the street footway chamber to the customer boundary wall – including access into the customer duct¹⁶³⁷.
- A1.799 Vodafone stated that in order to avoid any doubt as to the use of CEI remedies in the WHQA market, it believe the remedies should have been included in the 2018 Further Consultation and in particular in the Draft Decision Instrument.
- A1.800 Vodafone stated that the CEI remedy should also include a requirement for Eircom to provide Access to CEI from points of interconnect in Zone A MI WHQA Markets for the purposes of serving customers in Zone B MI WHQA Markets¹⁶³⁸.
- A1.801 Zayo stated that ComReg referred in several parts of the 2018 Further Consultation to the availability of duct and pole access without usage restrictions. Zayo stated that (in principle) this remedy is welcome and important in reducing the costs of building rival infrastructure¹⁶³⁹.

¹⁶³⁵ BT Submission Part 1, page 11.

¹⁶³⁶ The Duct from the Chamber on a Duct route, known as the Distribution Point ('DP') Chamber, to the End User premises is referred to as the 'lead-in' Duct.

¹⁶³⁷ BT Submission Part 1, page 11.

¹⁶³⁸ Vodafone Submission, page 13.

¹⁶³⁹ Zayo Submission, paragraph 5.1.6.

- A1.802 In Zayo's opinion, it is inappropriate that competition in one market (the WHQA market) is reliant on a regulatory remedy imposed in another market (i.e. the WLA Market). In addition, Zayo's view is that when the WLA market is reviewed next time, it would not be appropriate for ComReg to take into account the value of the Duct and Pole remedy to the WHQA market¹⁶⁴⁰.
- A1.803 Zayo stated that ComReg should undertake additional analysis of Eircom's incentives to deter further investment in rival infrastructure and should consider the imposition of a Duct and Pole Access remedy in Zone A WHQA Markets and Zone B WHQA Markets, to encourage further development of competition at the infrastructure level before determining that the Zone A WHQA market is fully competitive¹⁶⁴¹.
- A1.804 Zayo stated that if ComReg's analysis concludes that the Duct and Pole remedy is an effective remedy in the leased lines markets, then ComReg should impose that remedy in that market. In Zayo's opinion, the CEI remedy, which promotes upstream competition, will facilitate an increase in competitive infrastructure to serve downstream needs of operators to compete for retail customers.
- A1.805 In Zayo's opinion, it is appropriate that a Duct and Pole remedy is applied in a market that is prospectively competitive, and that other downstream remedies (e.g. access remedies outlined in 10.66 to 10.235 above) are removed. Zayo stated however that it would be important to retain transparency and non-discrimination remedies as regulatory accounting obligations would be important for the setting of duct and pole charges¹⁶⁴².

¹⁶⁴⁰ Zayo Submission, paragraph 5.1.7.

¹⁶⁴¹ Zayo Submission, paragraph 5.1.8.

CEI Access

ComReg's Assessment of Respondents' Views

- A1.806 ComReg notes that four Respondents (ALTO, BT, Vodafone and Zayo) provided feedback that ComReg should include as part of the Access remedies an obligation for Eircom to provide full and unfettered Access to the Eircom's Duct and Pole network and that ComReg must include a full suite of Duct and Pole access regulation within the WHQA market.
- A1.807 In its 2018 WLA/WCA Decision¹⁶⁴³, ComReg imposed CEI Access remedies¹⁶⁴⁴ which Eircom must implement by 18 May 2019 and 18 September 2019 to the standard of EoO and EoI respectively. ComReg clearly stated in the 2018 WLA/WCA Decision that such access to CEI is to be provided by Eircom without imposing any restrictions to the services which Access Seekers can provide using CEI Access, including for example, WHQA services¹⁶⁴⁵. For this reason, ComReg does not specify requirements governing CEI Access in the MI WHQA Markets.
- A1.808 CEI Access remedies reside in the WLA market and apply to the WLA market which is national. Hence, the CEI remedies can be used by Access Seekers to provide services, including MI WHQA services anywhere within the Eircom CEI footprint. ComReg's position is that fit-for-purpose CEI Access must be available before ComReg would review the remedies in the Zone B MI WHQA Markets. Hence, ComReg does not agree with Zayo's opinion (in paragraph A1.805 above) that other downstream remedies should be removed where a Duct and Pole remedy is available.

Fit-for-purpose Duct and Pole products

Respondents' Views

- A1.809 Four Respondents (ALTO, BT, Vodafone and Zayo) expressed views that the Eircom Duct and Pole products must be fit-for-purpose before any de-regulation take place in the MI WHQA Markets.

¹⁶⁴³ Market Review - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products, Response to Consultation and Decision, ComReg 18/94, Decision D10/18, 19 November 2018.

¹⁶⁴⁴ Including access to the 'lead-in' Duct from the street footway chamber to the End User's premises.

¹⁶⁴⁵ Paragraph 7.4 of the Wholesale Local Access Decision Instrument (Appendix 20) in the 2018 WLA/WCA Decision.

- A1.810 ALTO stated that ComReg should link any and all deregulation sunsets to the point in time that Eircom is deemed to have a fit-for-purpose Duct and Pole product¹⁶⁴⁶.
- A1.811 In ALTO's opinion, ComReg ignored the market realities of the 'lead-in' Duct¹⁶⁴⁷ problem of reaching End Users. ALTO noted that the 'lead-in' Duct is a significant and expensive issue for Industry¹⁶⁴⁸.
- A1.812 In ALTO's opinion, the current Eircom Duct and Pole offer is not fit-for-purpose. ALTO states that ComReg should link the deregulation of the MI WHQA Markets to the availability of reasonable access of fully viable duct and pole services from Eircom.
- A1.813 In ALTO's opinion, regulation will enable MI WHQA competition as the WLA based Duct and Pole products are proven and established¹⁶⁴⁹.
- A1.814 BT stated that the assumption that the Eircom and enet Duct and Pole products are fit-for-purpose and a source of competitive constraint is not appropriate¹⁶⁵⁰. BT noted that there was a problem of 'lead-in' Duct to End User's premises where first mover advantages are considerable. BT stated that Access to the 'lead-in' Duct is essential¹⁶⁵¹.
- A1.815 Vodafone stated that while CEI access is not a direct remedy, it does not consider the current version of Eircom's Duct and Pole products to be fit-for-purpose¹⁶⁵².

¹⁶⁴⁶ ALTO Submission, page3.

¹⁶⁴⁷ A 'lead-in' Duct is the Duct connection from the last Eircom chamber on its Access Network Duct route to the End User' premises.

¹⁶⁴⁸ ALTO Submission, page 2.

¹⁶⁴⁹ ALTO Submission, page 11.

¹⁶⁵⁰ BT Submission Part 1, pages 1-2.

¹⁶⁵¹ BT Submission Part 1, pages 11.

¹⁶⁵² Vodafone Submission, page 2.

- A1.816 Vodafone stated that the MI WHQA Markets should not be deregulated until a fit-for-purpose wholesale CEI product set is developed and launched by Eircom. Additionally, Vodafone stated that any proposed sunset clause should not commence until all required revisions to Eircom's wholesale product offerings are in place¹⁶⁵³.
- A1.817 Zayo stated that it has concerns regarding the usefulness of the current Eircom Duct and Pole access products. Zayo noted that while it does not have direct experience of the Eircom Duct and Pole product, it formed this view from its experienced staff from previous employers and also understands from other operators that they have significant concerns about the timing, processes and pricing of the current Eircom Duct and Pole access product¹⁶⁵⁴.
- A1.818 Zayo noted that it has direct experience of using Duct and Pole access in France. Zayo stated that it is in the process of engaging with Eircom to purchase the Duct and Pole access products and could commit resources to the improvement of that product, working with Eircom and other operators.
- A1.819 Zayo stated that it is important that the Duct and Pole access remedy provides an economically viable option for operators building rival infrastructure¹⁶⁵⁵.

Fit-for-purpose Duct and Pole products

ComReg's Assessment of Respondents' Views

- A1.820 ComReg notes that four Respondents (ALTO, BT, Vodafone and Zayo) expressed views that the Eircom Duct and Pole products must be fit-for-purpose before any de-regulation take place in the MI WHQA Markets.

¹⁶⁵³ Vodafone Submission, page 2.

¹⁶⁵⁴ Zayo Submission, paragraph 5.1.6.

¹⁶⁵⁵ Zayo Submission, paragraph 5.1.9.

- A1.821 In its 2018 WLA/WCA Decision¹⁶⁵⁶, ComReg imposed CEI remedies which Eircom must implement within six (6) and ten (10) months after the effective date of the WLA Decision, i.e. 18 May 2019 (to EoO standard) and 18 September 2019 (to EoI standard) respectively. The decision to remove regulation in the Zone A MI WHQA Markets is independent of CEI remedies mandated in the WLA Market, although ComReg has recognised the role that Duct and Pole access can play in supporting the provision of MI WHQA services. For this reason, ComReg disagrees with the Respondents' views that the sunset clause removing regulation in the Zone A MI WHQA Markets should not come into effect until fit-for-purpose Duct and Pole products are in place. In any event, regulatory obligations within the Zone A MI WHQA Markets are being withdrawn on a date after the timeframe within which the full CEI access obligations are effective (i.e. after 18 September 2019).
- A1.822 In its 2018 WLA/WCA Decision¹⁶⁵⁷, ComReg has already addressed ALTO's and BT's concerns regarding Access Seekers use of the 'lead-in' Duct to the End User's premises. In the WLA Decision, ComReg has mandated that:

“For the avoidance of doubt, Eircom is required to give Access to the final Chamber on a Duct route (known as the Distribution Point ('DP') Chamber) and the Duct from the DP Chamber to the End User premises (sometimes referred to as the 'lead-in' Duct), where there is a pre-existing Eircom Duct/Sub-Duct which is reasonably available.”¹⁶⁵⁸

¹⁶⁵⁶ Market Review - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products, Response to Consultation and Decision, ComReg 18/94, Decision D10/18, 19 November 2018.

¹⁶⁵⁷ Market Review - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products, Response to Consultation and Decision, ComReg 18/94, Decision D10/18, 19 November 2018, paragraphs 7.402 – 7.403.

¹⁶⁵⁸ Reasonably available means instances where the 'lead-in' Duct has sufficient capacity to allow the Access Seeker its Sub-Duct and/or cable.

Eircom is required to give Access to the final DP Chamber on a Duct route in instances where the End User owns the Duct/Sub-Duct (from the Eircom DP Chamber to the End User premises), where there is a pre-existing End User¹⁶⁵⁹ Duct/Sub-Duct which is reasonably available.”

A1.823 ComReg agree with Zayo’s view that an effective Duct and Pole access remedy provides an economically viable option for operators building rival infrastructure.

Specific Market Analysis observations

Respondents’ Views

A1.824 Eircom stated that given the serious deficiencies in ComReg’s analysis, both in terms of the definition of the relevant markets and the mapping exercise used to designate Small Areas (‘SAs’) as Zone A or Zone B, Eircom cannot agree to the obligations as proposed in the 2018 Further Consultation and Draft Decision Instrument¹⁶⁶⁰.

A1.825 Eircom stated that under the provisions of the Access Directive and the transposing Access Regulations, ComReg is only empowered to impose obligations that are objective, transparent, proportionate and non-discriminatory. In Eircom’s opinion, the obligations set out in the Draft Decision Instrument do not meet these criteria¹⁶⁶¹.

A1.826 Eircom stated that this 2018 Further Consultation “*go far beyond what is necessary or justified in the context of the WHQA market*” and noted that ComReg was proposing to deregulate this market in 2016. Eircom stated that ComReg is now proposing:

“...more stringent regulatory obligations than those that exist in any market to date without any objective justification for doing so by reference to the WHQA market”¹⁶⁶².

¹⁶⁵⁹ In the case of End User Duct/Sub-Duct (from the Eircom DP Chamber to the End User premises), the Access Seeker will obtain a wayleave from the End User to use this Duct/Sub-Duct.

¹⁶⁶⁰ Eircom Submission, page 4.

¹⁶⁶¹ Eircom Submission, page 4.

¹⁶⁶² Eircom Submission, page 4.

A1.827 Eircom disagreed with ComReg's proposals in the 2018 Further Consultation and noted that many of the proposals are seeking to address perceived issues in completely separate markets, which in Eircom's view are beyond the scope of this public consultation on the WHQA market and beyond the scope of ComReg's powers¹⁶⁶³.

Specific Market Analysis observations

ComReg's Assessment of Respondents' Views

A1.828 In Section 5 above, ComReg sets out its views in relation to the market definition of the relevant MI WHQA markets.

A1.829 ComReg does not agree with Eircom's opinion (in paragraph A1.825 above) that the obligations set out in the Draft Decision Instrument do not meet the criteria (i.e. obligations to be objective, transparent, proportionate and non-discriminatory) as set out under the provisions of the Access Directive and the transposing Access Regulations. In this Decision¹⁶⁶⁴, having assessed Eircom's Submission, ComReg has maintained its position that the obligations to be imposed in the Zone B MI WHQA Markets are objective, transparent, proportionate and non-discriminatory.

Practical application of Remedies in the Zone B MI WHQA Markets

Respondents' Views

A1.830 Three Respondents (ALTO, BT, and Vodafone) expressed views on Annex: 9 (Practical application of Remedies in the Zone B MI WHQA Market) in the 2018 Further Consultation.

A1.831 ALTO stated that it was unclear as to how the practical implications of ComReg's proposals would actually work in practice¹⁶⁶⁵.

A1.832 ALTO and BT agreed with ComReg's proposal of not stranding Zone B Small Areas ('SAs') from existing interconnect facilities^{1666 1667}. Both stated that Eircom should provide regulated connectivity from Zone B to the operator's Zone A WEIL locations.

¹⁶⁶³ Eircom Submission, page 4.

¹⁶⁶⁴ Section 10 and Annex A.1.10 of this Decision.

¹⁶⁶⁵ ALTO Submission, page 10.

¹⁶⁶⁶ ALTO Submission, page 15.

¹⁶⁶⁷ BT Submission Part 1, page 10.

- A1.833 ALTO and BT noted that Annex 9 (Practical application of Remedies in the Zone B MI WHQA Market) in the 2018 Further Consultation was complex and requested that ComReg provide industry participants with an opportunity to ask questions in a forum/meeting in order to check their understanding of the concept.
- A1.834 Vodafone stated that in Annex 9 (Practical Applications of Remedies in the Zone B MI WHQA Market) of the 2018 Further Consultation, ComReg identifies the circumstances where Eircom should be obliged to provide access circuits in Zone B MI WHQA Markets depending on the delineation of the Aggregation Node as being Trunk or Non-Trunk. Vodafone queried whether given the importance of this clarification, Annex 9 of the 2018 Further Consultation should also be included in the Decision Instrument or described in the access remedies Section of the Decision¹⁶⁶⁸.

Practical application of Remedies in the Zone B MI WHQA Markets

ComReg's Assessment of Respondents' Views

- A1.835 ComReg notes that three Respondents (ALTO, BT, and Vodafone) expressed views on Annex: 9 (Practical application of Remedies in the Zone B MI WHQA Market) in the 2018 Further Consultation.
- A1.836 ComReg considered ALTO's and BT's request that ComReg present to industry the Annex 9 concepts giving it the opportunity to ask questions in order to check its understanding of the concepts.
- A1.837 On 22 June 2018, ComReg published an information note¹⁶⁶⁹ on its website inviting industry to a workshop on the practical application of remedies in the Zone B MI WHQA Markets.
- A1.838 The workshop was held on 12 September 2018, at ComReg's premises. The workshop was an opportunity for industry representatives to ask questions in order to check their understanding of the concepts outlined in Annex 9 of the 2018 Further Consultation.

¹⁶⁶⁸ Vodafone Submission, page 13.

¹⁶⁶⁹ Information Notice, Wholesale High Quality Access ('WHQA') at a fixed location: Workshop on the practical application of remedies in the Zone B Modern Interface ('MI') WHQA market, ComReg 18/54, 22 June 2018.

- A1.839 Prior to the workshop, operators were invited to submit to ComReg written questions on the topic. Before the workshop, ComReg validated (as relevant) the questions submitted. All valid questions were anonymised and included on the workshop agenda.¹⁶⁷⁰ The workshop presentation was subsequently published on the ComReg website¹⁶⁷¹.
- A1.840 ComReg does not agree with Vodafone's view that Annex 9 of the 2018 Further Consultation should also be included in the Decision Instrument or described in the access remedies Section of Decision¹⁶⁷², given that the practical applications of remedies in the Zone B MI WHQA Markets is discursive text and gives guidance on how the various access remedies apply in practice. ComReg has decided to retain this text in an Annex which forms part of the overall Decision (refer to Annex 9 of this Decision).

¹⁶⁷⁰ Including 'BT Response and Questions to ComREg Publication Reference 18/08: Concerning High Quality Access at a Fixed Location – Workshop on the Practical Applications of Remedies in the Zone B MI WHQA Market; 3 August 2018 (**'BT Submission Part 4'**).

¹⁶⁷¹ Workshop on the Practical Application of Remedies in the Zone B Modern Interface ('MI') WHQA Market, Document Number 18/98, 21 November 2018.

¹⁶⁷² Vodafone Submission, page 13.

A.1.10.2 Non-Discrimination Remedies

A1.841 In the 2018 Further Consultation, ComReg set out its proposed non-discrimination remedies including, that Eircom:

- (a) applies equivalent conditions in equivalent circumstances to other Undertakings requesting, or being provided with Access (including Access to MI WHQA products, services and facilities¹⁶⁷³ in the Zone B MI WHQA Markets) or requesting or being provided with information in relation to such Access; and
- (b) provides access (including Access to MI WHQA products, services and facilities¹⁶⁷⁴ in the Zone B MI WHQA Markets) and information to all other Undertakings under the same conditions and of the same quality as Eircom provides to itself or to its subsidiaries, affiliates or partners.

A1.842 Five Respondents (ALTO, BT, Eircom, enet and Vodafone) expressed a view on ComReg's non-discrimination remedies¹⁶⁷⁵ in the Zone B MI WHQA Markets. Verizon and Zayo did not express any views.

A1.843 In this Section, Respondents' views and ComReg's assessment of Respondents' views with respect to each proposed non-discrimination remedy is described.

Proposed Non-Discrimination Remedies

Respondents' Views

A1.844 Eircom and enet agreed with ComReg's non-discrimination remedies for the Zone B MI WHQA Markets. Eircom agreed¹⁶⁷⁶ with ComReg's view in the 2018 Further Consultation that the EoO standard is appropriate for MI WHQA type products. Eircom's view is that appropriate KPIs and transparency can assist in monitoring compliance with non-discrimination obligations.

¹⁶⁷³ Including Related MI WHQA Elements.

¹⁶⁷⁴ Including Related MI WHQA Elements.

¹⁶⁷⁵ Paragraphs 10.247 to 10.257 of this Decision.

¹⁶⁷⁶ Eircom Submission, paragraph 101, "*Notwithstanding eir's position that the consultation is seriously flawed and the market should be deregulated*".

Proposed EoO Obligation

- A1.845 While Vodafone agreed¹⁶⁷⁷ with ComReg's analysis and preliminary conclusion on the non-discrimination obligations, Vodafone, along with ALTO and BT disagreed with ComReg's proposal to use of EoO as the standard of access for the Zone B MI WHQA Markets.
- A1.846 ALTO disagreed with ComReg's proposal to use EoO as the standard of access for the Zone B MI WHQA Markets¹⁶⁷⁸. ALTO stated that it expected at a minimum that EoI has been developed and deployed by Eircom¹⁶⁷⁹.
- A1.847 ALTO stated that Eircom's RGM has displayed that EoO regulation is simply not fit-for-purpose and encouraged ComReg to revisit its thinking on this critical subject¹⁶⁸⁰.
- A1.848 BT stated that "Eircom Managed Network Services division" should not have access to Eircom wholesale information unless that information is available to other operators and that no confidential wholesale information can pass downstream area within Eircom¹⁶⁸¹.
- A1.849 BT disagreed with ComReg concerning the use of EoO for Next Generation Networks¹⁶⁸² (NGN) services which BT state now supply Wholesale Ethernet Services.
- A1.850 BT stated that Eircom had the ability and knowledge to have designed NGN on the UG. BT stated that it cannot understand why ComReg continues "*with a discredited EoO system as shown by the poor experience of the RGM*"¹⁶⁸³. BT's view is that legacy non-discrimination regulation is not fit-for-purpose as proven by RGM¹⁶⁸⁴.

¹⁶⁷⁷ Vodafone Submission, page 11.

¹⁶⁷⁸ ALTO Submission, page 3.

¹⁶⁷⁹ ALTO Submission, page 15.

¹⁶⁸⁰ ALTO Submission, page 15.

¹⁶⁸¹ BT Submission Part 1, page 9.

¹⁶⁸² BT Submission Part 1, page 11, states that these are "*The term Next Generation indicates these are new networks and it's important to acknowledge they were developed in an environment of EOI*".

¹⁶⁸³ BT Submission Part 1, pages 11-12.

¹⁶⁸⁴ BT Submission Part 1, page 14.

- A1.851 BT's opinion is that EoI would drive Eircom downstream services to use the "same" upstream services as it offers to other operators, making it physically more difficult in practice to discriminate and easier to detect discrimination.
- A1.852 While Vodafone agreed¹⁶⁸⁵ with ComReg's analysis and preliminary conclusion on the non-discrimination obligations outlined in paragraphs 10.247 to 10.257 of this Decision, Vodafone expressed concern with ComReg's proposal to mandate EoO as the proposed non-discrimination standard of access for the Zone B MI WHQA Markets¹⁶⁸⁶. Vodafone noted that Zone A MI WHQA Markets and Zone B MI WHQA Markets are strongly interrelated and that Access Seekers must be assured that Eircom's downstream retail arm cannot gain an unfair advantage.
- A1.853 Vodafone expressed disappointment that ComReg did not propose an EoI obligation given the identified risks arising with respect to horizontal and vertical leveraging, the possibilities of information asymmetries and pricing.
- A1.854 Vodafone cited Eircom's RGM as justification to implement EoI. Vodafone noted that Eircom's NGN network and OSS are relatively new systems. Vodafone stated that apart from ensuring Eircom Retail have Access to the same facilities as a competing wholesale operator it is difficult to envisage this cost as an impediment to EoI. Vodafone's opinion is that ComReg did not appear to have assessed this cost in the context of a deregulated Zone A MI WHQA Markets and the impact of this on competition in the Zone B MI WHQA Markets.

[Maps of alternative infrastructure](#)

- A1.855 One Respondent (enet) expressed the view that, from a transparency point of view, ComReg consider facilitating the publication of maps of all alternative infrastructure, both in the Zone B MI WHQA Markets and Zone A MI WHQA Markets. enet stated that, Access Seekers, when seeking to obtain MI WHQA services from network providers, should have full knowledge of all possible networks over which such access could be available to them¹⁶⁸⁷.

¹⁶⁸⁵ Vodafone Submission, page 11.

¹⁶⁸⁶ Vodafone Submission, page 11.

¹⁶⁸⁷ enet Submission, page19.

Proposed Non-Discrimination Remedies

ComReg's Assessment of Respondents' Views

- A1.856 ComReg notes that five Respondents (ALTO, BT, Eircom, enet and Vodafone) expressed a view on ComReg's non-discrimination remedies¹⁶⁸⁸ for the Zone B MI WHQA Markets
- A1.857 ComReg notes that Eircom and enet agreed with ComReg's non-discrimination remedies for the Zone B MI WHQA Markets.

Proposed EoO Obligation

- A1.858 ComReg notes that ALTO, BT and Vodafone disagreed with ComReg's proposal that Eircom provide Access to MI WHQA products, services and facilities¹⁶⁸⁹ in the Zone B MI WHQA Markets to at least an EoO standard.
- A1.859 ComReg does not agree with ALTO's, BT's and Vodafone's views, summarised in paragraphs A1.845 to A1.854 above, that an EoI standard should be mandated for MI WHQA products, services and facilities¹⁶⁹⁰ in the Zone B MI WHQA Markets.
- A1.860 The MI WHQA NGN Ethernet service is the largest (by volume) MI WHQA RAP data product consumed by Industry. These services are 'layer 2' services, comprising of physical¹⁶⁹¹ and logical circuits¹⁶⁹². Access Seekers purchase wholesale MI WHQA NGN Ethernet 'layer 2' services and develop and launch their own 'layer 3' services for sale to their retail consumers.

¹⁶⁸⁸ Paragraphs 10.247 to 10.257 of this Decision.

¹⁶⁸⁹ Including Related MI WHQA Elements.

¹⁶⁹⁰ Including Related MI WHQA Elements.

¹⁶⁹¹ Access circuits known as WSEAs and Interconnection circuits known as WEILs.

¹⁶⁹² Logical circuit known as a Wholesale Ethernet Service ('WES').

- A1.861 [REDACTED], comprising of physical¹⁶⁹³ and logical circuits¹⁶⁹⁴. Hence, Eircom Retail does not purchase WEIL, WSEA or WES services i.e. layer 2 services.
- A1.862 In this Decision¹⁶⁹⁵, ComReg's position is that adopting an Eol standard would not be proportionate. In particular, the OSS and wholesale interfaces that are in place and used for the provision of Eircom's suite of existing MI WHQA products, services and facilities¹⁶⁹⁶ in the Zone B MI WHQA Markets have already been developed. These OSS and wholesale interfaces would likely require substantial investment in order to upgrade or replace them to meet an Eol standard. This would not be justifiable or proportionate in the circumstances of the Zone B MI WHQA Markets as it would likely involve costly systems re-development, the incremental benefits of which would not likely be substantial.
- A1.863 ComReg maintains its position that it would not be justifiable¹⁶⁹⁷ or proportionate to require Eircom to redesign/enhance its wholesale MI WHQA NGN Ethernet products so that Eircom's downstream arm may offer its retail customers its existing 'layer 3' services using the enhanced layer 2 services. Alternatively, it would not be justifiable or proportionate to require Eircom to redesign its wholesale MI WHQA NGN Ethernet products resulting in wholesale operators exclusively consuming Eircom Retail 'layer 3' services.

¹⁶⁹³ Eircom Retail physical circuit is known as a [REDACTED]] Source: *Eircom's NGN Ethernet Statement of Compliance June 2014*. This Eircom Retail physical circuit operates as both an access and interconnection circuit.

¹⁶⁹⁴ Six logical circuits types: [REDACTED]] Source: *Eircom's NGN Ethernet Statement of Compliance June 2014*.

¹⁶⁹⁵ See paragraph 10.255 of this Decision.

¹⁶⁹⁶ Including Related MI WHQA Elements.

¹⁶⁹⁷ Due to the substantial development costs and disruption to End Users (wholesale and /or retail).

- A1.864 ComReg's position is that even though Eircom's existing NGN network and related OSS were implemented in the last eight years, ComReg considers these to be of a legacy nature given the scale of the network and OSS investment required, to enable Eircom Retail consume WEIL/WSEA/WES circuits and continue to offer its customers 'layer 3' services, for example.
- A1.865 In this Decision¹⁶⁹⁸, ComReg's position is to impose a requirement on Eircom to publish a specific set of KPIs relevant to the MI HQA/WHQA market on its public website in accordance with the existing requirements as set out in the 2011 KPI Decision remedies. These KPIs will support the monitoring of non-discrimination obligations and, in so doing, provide assurances to Access Seekers regarding the levels of service provided by Eircom to its downstream arm relative to that provided to Access Seekers. It also facilitates ComReg in fulfilling its role in monitoring the markets.
- A1.866 ComReg's position is that the EoO standard can be adopted in the Zone B MI WHQA Markets without a significant additional cost burden being placed on Eircom, while at the same time addressing potential discriminatory concerns in a proportionate manner.

Maps of alternative infrastructure

- A1.867 ComReg notes that one Respondent (enet) expressed the view that ComReg should consider facilitating the publication of maps of all alternative infrastructures, both in the Zone B MI WHQA Markets and Zone A MI WHQA Markets.
- A1.868 ComReg notes enet's view that, Access Seekers, when seeking to obtain MI WHQA services from network providers, should have full knowledge of all possible networks over which such access could be available to them.
- A1.869 In the 2018 Further Consultation¹⁶⁹⁹, ComReg published an online map of Ireland showing the Zones A MI WHQA Markets and Zone B MI WHQA Markets.
- A1.870 This allowed Access Seekers to search the map based on address, Small Area ID and customer name, where the customer location has been identified on google maps.

¹⁶⁹⁸ Paragraph 8.136 of this Decision.

¹⁶⁹⁹ Appendix: 2 Map of Ireland, Zones A and B (https://siteviewer.comreg.ie/ComReg1808b_TO_BE_UPDATED_WHEN_THE_MAP_IS_READY).

- A1.871 ComReg has designated Eircom as having SMP in the Zone B MI WHQA Markets. Hence, Eircom is obliged to publish a MI WHQA Reference Offer for MI WHQA products, services and facilities¹⁷⁰⁰ available in the Zone B MI WHQA Markets.
- A1.872 Having considered enet's view, ComReg does not consider it appropriate for ComReg to publish the maps of all alternative infrastructure, both in the Zone B MI WHQA Markets and Zone A MI WHQA Markets. This information is the commercial property of the alternative network operators who opt to make this information available to Access Seekers who sign the relevant agreement to purchase their MI WHQA services.
- A1.873 Regulation 10(1) of the Broadband Cost Reduction Regulations sets out the functions of ComReg, acting as a Single Information Point ('SIP') as set out at Regulation 10(1)(c):
- “the functions of the single information point “...“ regarding access to information provided to the single information point by network operators and to facilitate access via a single information point to information regarding statutory permits for civil works required to develop elements of a high-speed electronic communications network including, where appropriate, exempted development provisions and the conditions and procedures applicable to granting a statutory permit.”*
- A1.874 The SIP¹⁷⁰¹ will facilitate access to relevant information regarding:
- (a) permits, licenses or consents for civil works required to develop elements of a high-speed electronic communications network; and
 - (b) the procedures applicable to granting permits, licenses or consents.
- A1.875 Information provided to ComReg which is within the scope of the SIP (i.e. regarding permits for civil works or information regarding civil works) may be made available subject to a request.

¹⁷⁰⁰ Including Related MI WHQA Elements

¹⁷⁰¹ <https://www.comreg.ie/industry/electronic-communications/single-information-point-bcrr/single-information-point-sip/>.

A.1.10.3 Transparency Remedies

A1.876 Six Respondents (ALTO, BT, Eircom, enet, Verizon and Vodafone) expressed views on ComReg's proposal regarding transparency¹⁷⁰².

A1.877 Four Respondents (ALTO, BT, enet and Vodafone) broadly agreed with ComReg's proposal^{1703 1704 1705 1706}. While Eircom agreed with the principle of transparency, it disagreed with certain aspects of ComReg's proposal¹⁷⁰⁷.

A1.878 Respondents' views on this proposed remedy are classified into the following themes:

- (a) Obligation to publish and maintain LLRO and LLRO Price list for the products in scope (summarised in paragraphs A1.879 to A1.886 below);
- (b) Obligation to publish changes to the LLRO and wholesale prices, in advance of their coming into effect, and to notify ComReg in advance of publication (summarised in paragraphs A1.896 to A1.898 below);
- (c) Obligation to publish KPIs (summarised in paragraphs A1.901 to A1.923 below);
- (d) Requirements governing sharing of confidential and/or commercial information through a non-disclosure agreement (summarised in paragraph A1.925 below);
- (e) Requirements with respect to transparency of product development (summarised in paragraphs A1.927 to A1.937 below);
- (f) Requirement with respect to the provision of information concerning network roll out plans (summarised in paragraph A1.968 below);
- (g) Notification of changes to Data Contract (summarised in paragraphs A1.970 to A1.973 below); and
- (h) Information as to whether or not a customer's premise falls in the relevant Zones (summarised in paragraphs A1.977 to A1.978 below).

¹⁷⁰² See paragraphs 10.258 to 10.368 of this Decision.

¹⁷⁰³ ALTO Submission, page 15.

¹⁷⁰⁴ BT Submission Part 1, page 14.

¹⁷⁰⁵ enet Submission, page 19.

¹⁷⁰⁶ Vodafone Submission, page 11.

¹⁷⁰⁷ Eircom Submission, paragraphs 102-111.

Obligation to publish and maintain LLRO and LLRO Price list for the products in scope

Respondents' Views

- A1.879 Three Respondents (ALTO, Verizon and Vodafone) expressed views regarding the clarity, and ease of use of the LLRO documentation.
- A1.880 ALTO and Verizon expressed concerns about the clarity and ease of use of the LLRO documentation. These Respondents were of the view that given the more segmented nature of the market under the 2018 Further Consultation, the documentation needs to be as accessible and practical as possible in order for it to be most effective and for Access Seekers to make full use of the proposed regulatory regime^{1708 1709}.
- A1.881 ALTO and Verizon cited an example where Eircom had issued long and complex documents, which in their opinion, serve only to dissuade or confuse competitors. This example concerned Eircom's Ethernet pricing document which these Respondents noted is over 160 pages long^{1710 1711 1712}.
- A1.882 ALTO and Verizon requested ComReg to consider how it could control the above through its proposed obligations (under transparency or non-discrimination conditions). Verizon suggested, for example, that ComReg set out requirements for the format of the LLRO, and/or a requirement for Eircom to consult on the format of the pricing and other information with Access Seekers^{1713 1714}.

¹⁷⁰⁸ ALTO Submission, page 19.

¹⁷⁰⁹ Verizon Submission, paragraph 18.

¹⁷¹⁰ ComReg notes that the Eircom document "eircom Network Price List, (formerly the eircom RIO Network Price List)", Version 12.0, dated 1 July 2019 (available at [https://www.openeir.ie/Reference Offers/](https://www.openeir.ie/Reference%20Offers/) and in effect at the time of publishing this Decision) is 206 pages long.

¹⁷¹¹ ALTO Submission, page 19.

¹⁷¹² Verizon Submission, paragraph 19.

¹⁷¹³ ALTO Submission, page 17.

¹⁷¹⁴ Verizon Submission, paragraph 19.

- A1.883 Verizon further recommended that ComReg consider best practice such as that adopted by KPN in the Netherlands, which in its view produces concise user-friendly pricing documentation¹⁷¹⁵.
- A1.884 Vodafone suggested that Eircom should be obliged to publish all current prices in a document or spreadsheet separate from the historic records of price changes¹⁷¹⁶.
- A1.885 In the context of the practicalities around the proposals for the MI WHQA Markets and the proposed identification of separate Zone A and B geographic markets, Verizon considered that there would be a need for separate billing elements for relevant components (e.g. physical and virtual elements) split out for both the local access and backhaul elements¹⁷¹⁷. ALTO also expressed the same view as Verizon in this regard¹⁷¹⁸.
- A1.886 ALTO and Verizon sought clarification if the above is what ComReg intended with ComReg's proposed transparency obligation regarding the unbundling of the Leased Lines Reference Offer (LLRO) at Section 10.3 of the Draft Decision Instrument¹⁷¹⁹. If it is not, then these Respondents requested ComReg to clarify its position^{1720 1721}.

¹⁷¹⁵ Verizon Submission, paragraph 19. Verizon also attached a publicly available example of a KPN pricing document in Annex 1 of its Submission.

¹⁷¹⁶ Vodafone Submission, page 11.

¹⁷¹⁷ Verizon Submission, paragraphs 10 and 17.

¹⁷¹⁸ ALTO Submission, page 17.

¹⁷¹⁹ Section 10.3 of the Draft Decision Instrument sets out that the LLRO shall be sufficiently unbundled so as to ensure that Undertakings availing of Access (including Access to those products, services and facilities described in Sections 7 and/or 8 of the Draft Decision Instrument) are not required to pay for products, services or facilities which are not necessary for the Access requested.

¹⁷²⁰ ALTO Submission, page 17.

¹⁷²¹ Verizon Submission, paragraph 17.

Obligation to publish and maintain LLRO and LLRO Price list for the products in scope

ComReg's Assessment of Respondents' Views

- A1.887 ComReg has considered the views expressed by Verizon and ALTO¹⁷²² with respect to concerns about the clarity and ease of use of the LLRO documentation, in particular in relation to pricing information.
- A1.888 ComReg has also considered the views expressed by Vodafone¹⁷²³ that Eircom should be obliged to publish all current prices in a document or spreadsheet which is separate from the historic records of price changes.
- A1.889 As part of the above consideration, ComReg has assessed the clarity and ease of use of information presented in Eircom's LLRO Price List¹⁷²⁴. From this assessment, ComReg considers that the clarity and ease of use of information presented can, in ComReg's opinion, be improved, as described in paragraph A1.890 to A1.891 below.
- A1.890 ComReg considers that while the historical information relating to the effective 'to' and 'from' dates for the application of charges still needs to be made available to Access Seekers, the current inclusion of this information in the various tables in the LLRO Price List document detracts from the clarity and ease of use of such tables. In ComReg's opinion, such historical information would be more appropriately published in a separate LLRO document(s) from that of the LLRO Price List.
- A1.891 ComReg has therefore decided that, in accordance with Regulation 9(4) of the Access Regulations, an obligation will be imposed on Eircom to state its currently effective and historical charges in separate LLRO documents. ComReg considers that this obligation is justified so that effective and historical prices are clearly presented to Access Seekers. ComReg considers this obligation to be proportionate as it is a disaggregation of existing information rather than an activity that will require development or be resource intensive.

¹⁷²² As summarised in paragraph A1.880 to A1.883 above.

¹⁷²³ As summarised in paragraph A1.884 above.

¹⁷²⁴ Eircom document 'eircom Network Price List (formerly the eircom RIO Network Price List)' Version 12.0, dated 1 July 2019.

- A1.892 ComReg has also considered the views expressed by ALTO and Verizon¹⁷²⁵ that, in the context of the practicalities around the proposals for the MI WHQA Markets, there is a need for separate billing elements for relevant components (e.g. physical and virtual elements split out for both the local access and backhaul elements) and whether this is what ComReg intended with Section 10.3 of the Draft Decision Instrument¹⁷²⁶.
- A1.893 Section 10.3 of the Draft Decision Instrument proposed that the LLRO shall be sufficiently unbundled so as to ensure that Undertakings availing of Access (including Access to those products, services and facilities described in Sections 7 and/or 8 of the Draft Decision Instrument) are not required to pay for products, services or facilities which are not necessary for the Access requested.
- A1.894 Section 10.3 of the Draft Decision Instrument applies generally to the LLRO. While not specific to the unbundling of components in Zone A MI WHQA Markets and Zone B MI WHQA Markets that are necessary for the supply of regulated products to Access Seekers, it does apply to unbundling such as the following:
- (a) WEILs used to handover traffic (i.e. logical services outlined in A1.894 (b) and (c) below) to Access Seekers where that traffic originates from the Zone B MI WHQA Markets;
 - (b) Trunk Nodes: Logical services from WSEAs in the Zone B MI WHQA Markets to connected premises parent Trunk Nodes ('Same Node');
 - (c) Non-Trunk Nodes: Logical services allowing connection from WSEAs in the Zone B MI WHQA Markets to:
 - (iii) Connected premises parent Non-Trunk Nodes ('**Same Node**');
 - (iv) Aggregation Node located at either of the corresponding Provider Edge Nodes within an Aggregation Region¹⁷²⁷ ('**Same Region**');
 - (v) Edge Node Handoff at Access Seekers premises within an Aggregation Region ('**ENH Same Region**').
 - (d) WSEAs in the Zone B MI WHQA Markets.

¹⁷²⁵ As summarised in paragraph A1.885 above.

¹⁷²⁶ Section 10.3 of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation, is the Section of the Draft Decision Instrument relating to the LB TI WHQA Market. ComReg notes however that ALTO and Verizon provided this feedback under the Section of their Submissions that addressed Question 7 of the 2018 Further Consultation, which relates to the Zone B MI WHQA Markets.

¹⁷²⁷ 'Aggregation Region' means a group of Aggregation areas where each Aggregation Node is directly connected to a pair of Provider Edge ('PE') Nodes.

A1.895 ComReg's position is that the products set out in paragraph A1.894 above reuse existing Regulatory Access Products and are required to be unbundled in the LLRO.

Obligation to publish changes to the LLRO and wholesale prices, in advance of their coming into effect, and to notify ComReg in advance of publication

Respondents' Views

A1.896 One Respondent (Eircom) expressed views regarding the proposed obligation to publish changes to the LLRO and wholesale prices, in advance of their coming into effect, and to notify ComReg in advance of publication.

A1.897 Eircom noted that ComReg proposed to maintain the advance notification periods for product and price changes to Industry at 3 months. Eircom considered this appropriate given the increasingly competitive nature of the Irish market-place¹⁷²⁸.

A1.898 Eircom also expressed the view that there is a balance to be found between promoting transparency for Access Seekers regarding services provided on the Eircom network and disclosing commercially sensitive information to direct competitors of Eircom. Eircom considered that it would be appropriate for ComReg to similarly lower the advance notification periods in the separate WLA / WCA market.

Obligation to publish changes to the LLRO and wholesale prices, in advance of their coming into effect, and to notify ComReg in advance of publication

ComReg's Assessment of Respondents' Views

A1.899 As summarised in paragraphs A1.896 and A1.898 above, while Eircom was in agreement with the proposed obligations with respect to advance notification periods for changes to the LLRO it considered that it would be appropriate for ComReg to similarly lower the notice periods in the WLA / WCA market.

¹⁷²⁸ Eircom Submission, paragraph 102.

A1.900 ComReg notes that Eircom expressed such views in its Submission to the WLAWCA Consultation. During the assessment of Respondents' views for the WLAWCA Decision¹⁷²⁹, ComReg has assessed these views and did not agree that notice periods should be reduced for the WLA and WCA markets¹⁷³⁰.

Obligation to publish KPIs

Respondents' Views

A1.901 Four Respondents (ALTO, BT, Eircom and Vodafone) expressed views regarding the proposed obligation to publish KPIs.

A1.902 ALTO and BT requested ComReg to review and revise the entire suite of KPIs, as their opinion is that a review of KPIs is overdue¹⁷³¹.

A1.903 BT stated that it did not understand the actual input definitions and how the standard, non-standard and project split works in practice to allow performance to be compared. Hence, BT considered that a complete KPI review is needed¹⁷³². BT further expressed the view that a review of KPIs, definitions and reporting is required to ensure that these are still correct and up to date.

A1.904 Vodafone agreed with ComReg's proposals to include KPIs for comparing order, delivery and assurance performance provided to Access Seekers to that provided to Eircom's downstream business in Zone A MI WHQA Markets and Zone B MI WHQA Markets¹⁷³³.

¹⁷²⁹ Market Review - Wholesale Local Access (WLA) provided at a Fixed Location and Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products, Response to Consultation and Decision, ComReg 18/94, Decision D10/18, 19 November 2018.

¹⁷³⁰ As discussed in paragraphs 7.1186 to 7.1190 of the WLAWCA Decision.

¹⁷³¹ ALTO Submission, page 15.

¹⁷³² BT Submission Part 1, page 14.

¹⁷³³ Vodafone Submission, page 12.

- A1.905 Eircom noted that the Draft Decision Instrument of the 2018 Further Consultation sets out that KPIs should be broken out into Zone A and Zone B¹⁷³⁴. In Eircom's opinion, there is no justification for the publication of KPIs for Zone A in which ComReg has proposed that no operator has SMP and hence no operator can be subject to *ex ante* regulatory obligations. Eircom stated that it cannot accept that it should be subject to SMP obligations in a market where it does not have SMP¹⁷³⁵.
- A1.906 Eircom stated that the KPI proposal as currently set out cannot be reported using their current methods and systems as the co-ordinates of the End User sites are not recorded. Eircom proposed that they could report based on serving Exchange which in principle could be defined as either in Zone A or Zone B. Eircom noted that, if in the future, eircodes are widely adopted by Industry and used for all ordering Eircom could review how it reports these KPIs¹⁷³⁶.
- A1.907 Eircom stated that development would be required to generate the new reports to capture and classify the serving Exchange into the appropriate Zone to enable the KPI reports to be generated. Eircom estimated that this development would take 6 months following the end of the quarter in which the Decision is published. However, Eircom noted that it was not prepared to undertake any development in circumstances where Eircom believes the mapping exercise used to determine the Zones is flawed¹⁷³⁷.

Obligation to publish KPIs

ComReg's Assessment of Respondents' Views

- A1.908 As noted in paragraphs A1.901 to A1.903 above, ALTO and BT expressed the view that a complete review of KPIs is required. ComReg assesses this view in paragraphs A1.909 to A1.923 below.

¹⁷³⁴ Eircom Submission, paragraph 103.

¹⁷³⁵ Paragraph 10.17 of the 2018 Further Consultation, "*In Section 5 of this 2018 Further Consultation, ComReg set out its preliminary view that no SP is likely to hold SMP in the Zone A MI WHQA Markets. In view of this preliminary finding, ComReg is obliged to remove existing SMP based regulation in this market*".

¹⁷³⁶ Eircom Submission, paragraph 104.

¹⁷³⁷ Eircom Submission, paragraph 105.

- A1.909 ComReg disagrees with the view expressed by BT that the KPI definitions in the 2018 Further Consultation are unclear and therefore warrant a complete review of KPIs. ComReg considers that the KPI definitions clearly describe the specification of the KPIs to be reported on. ComReg has, however, further considered the content of the tables set out in Sections 17.12 and 17.13 of the Draft Decision Instrument and has decided that amendments be made to these tables to correct some typographical errors and updates to the template KPI tables (refer to tables 5 to 9 in the Decision Instrument of this Decision). The requirements with respect to KPI definitions and associated tables are more particularly set out in Section 10 and 17 of Annex 8 of this Decision.
- A1.910 ComReg has also considered BT's concerns with respect to the clarity of how orders are designated as 'standard', 'non-standard' or 'project'¹⁷³⁸. ComReg notes that the matter of the definitions of order designations as 'standard', 'non-standard' or 'project' has formed part of SLA discussions between Eircom and BT¹⁷³⁹. ComReg considers that the definitions of these order designations are more appropriately agreed via SLA discussions, rather than for example imposed a specific obligation on Eircom on how such definitions should be provided.
- A1.911 While ComReg agrees that clear definitions of these designations is required to ensure transparency of the KPIs, ComReg's position is that the KPI definitions included in Sections 17.12 of the Draft Decision Instrument clearly set out how such designations should be reported on and that the definitions of such designations are more appropriately included in Eircom's LLRO rather than the Decision Instrument. ComReg does not therefore agree that the concerns raised by BT with respect order designations warrant a complete review of KPIs.

¹⁷³⁸ As part of order validation, Eircom provide confirmation, or otherwise, that an order is deliverable by it within the standards set down in the relevant SLA. The designation of orders as 'standard', 'non-standard' and 'project' determines which SLA criteria needs to be met. Eircom has defined 'standard', 'non-standard' and 'project' order designations in Section 2.1 of Eircom document 'Service Level Agreement for Wholesale Symmetrical Ethernet Access (WSEA)', Version 3.0, dated 17 December 2018 and Section 2.1 of Eircom document 'Service Level Agreement for Wholesale Ethernet Interconnect Link (WEIL)', dated 17 December 2018 (both documents are available at https://www.openeir.ie/Products/Data/Next_Generation_Ethernet/).

¹⁷³⁹ As discussed during the Leased Lines/Partial Private Circuit industry forums, such as the forum meeting that took place on 11 March 2018.

- A1.912 ComReg notes Vodafone's support¹⁷⁴⁰ to include KPIs for comparing order, delivery and assurance performance provided to Access Seekers to that provided to Eircom's downstream business.
- A1.913 ComReg notes Eircom's view that there is no justification for the publication of KPIs for services provided in the Zone A MI WHQA Markets.
- A1.914 Having considered Eircom's views (paragraph A1.905 above), ComReg has amended the obligation on Eircom to publish KPIs relating to MI WHQA Interconnection in Zone A MI WHQA Markets. The amended obligation require Eircom to publish KPIs relating to regulated MI WHQA Interconnection only in Zone A MI WHQA Markets¹⁷⁴¹ to improve transparency with respect to regulated MI WHQA Interconnection product performance (in Zone A MI WHQA Markets) so that Access Seekers can compare critical aspects of MI WHQA Interconnection products and services with the wholesale and retail equivalents (e.g. MSAs, WDM Interconnection) in the Zone B MI WHQA Markets. Absent KPIs relating to regulated MI WHQA Interconnection in Zone A MI WHQA Markets, it would not be possible for ComReg to monitor Eircom's compliance with its non-discrimination obligation with respect to supply, designation and repair of regulated MI WHQA Interconnection services. For the avoidance of doubt, no KPIs will be published in respect of Eircom's retail performance in Zone A MI WHQA Markets.
- A1.915 ComReg notes that Eircom agreed with ComReg's view that the EoO standard is appropriate for MI WHQA type products, services and facilities and stated that appropriate KPIs and transparency can assist in monitoring compliance with non-discrimination obligations¹⁷⁴².
- A1.916 KPIs were defined as a measure(s) of the standard(s) of MI WHQA provided by Eircom to Access Seekers and by Eircom to itself through self-supply. More generally, it is ComReg's position that KPIs should provide a summary guide to the relative standards of common or equivalent inputs consumed by Access Seekers through Eircom's wholesale products and by Eircom itself through self-supply.

¹⁷⁴⁰ As summarised in paragraph A1.904 above.

¹⁷⁴¹ Which interconnection supports the provision of products, services and facilities terminating in the Zone B MI WHQA Markets.

¹⁷⁴² Eircom Submission, paragraph 101.

- A1.917 ComReg considers that even the perception of superiority in relation to Eircom retail products when considered against its wholesale products, in relevant markets, may potentially undermine competition. ComReg, therefore, requires Eircom to publish KPIs which are intended to provide objective measures of the most important qualitative aspects of the wholesale products and services provided by Eircom. These KPIs tables are set out in Section 17 of the Decision Instrument as described in Annex 8 of this Decision.
- A1.918 In the 2018 Further Consultation¹⁷⁴³, ComReg set out its view that Exchange Areas¹⁷⁴⁴ are considered to be too large in comparison to Small Areas ('SAs') as an appropriate choice of geographical unit for its assessment of the geographic scope of the MI WHQA Markets. As set out in Section 5.7 above, it is now ComReg's position that WPZs are the appropriate geographical unit for defining the boundaries of the Zone A and Zone B MI WHQA Markets¹⁷⁴⁵. Similarly, ComReg considers such differences in size, in addition to a lack of correlation between Exchange Areas and Small Areas also make Exchange Area's unsuitable for the required KPI reports to be based on. ComReg therefore considers that reports based on Exchange Areas would not provide Access Seekers with the required level of transparency to effectively utilise KPIs. ComReg therefore disagrees with Eircom's suggestion to base the KPI reports on the serving Exchange, which in principle could be defined as either in Zone A MI WHQA Markets or Zone B MI WHQA Markets.

¹⁷⁴³ Paragraphs 4.141 to 4.150 of the 2018 Further Consultation.

¹⁷⁴⁴ An 'Exchange Area' is the geographic area served by a particular Eircom Exchange. Each location in the State falls within one Exchange Area only.

¹⁷⁴⁵ Note that this Decision uses WPZ as the geographic unit which are based on SAs.

- A1.919 ComReg does not agree with Eircom's view that the KPI proposal as currently set out cannot be reported on using their current methods and systems as the co-ordinates of the End User sites are not recorded. ComReg's position is that all the wholesale terminating segment for all MI WHQA products either sold on a wholesale basis or sold to its downstream business had at one point the need to resolve details relating to the customer's service location. This was required in order to identify the cable distance over the access network service which was required to connect the customer site to the serving Eircom Exchange, and the name and location of the Eircom Exchange site. This was required as an essential input to meet the obligation of cost orientation, in addressing external wholesale demands or in the context of the Margin Squeeze Test obligations when providing service to its downstream business. Therefore this position, in conjunction with the ability of Eircom to identify each customer service location and the WPZ within which the location exists, will afford it the ability to determine if the terminating segment is serving a customer in either Zone A MI WHQA Markets or Zone B MI WHQA Markets.
- A1.920 ComReg understands that just as Eircom's suggestion to report on KPIs based on Exchange areas would require development¹⁷⁴⁶, some development will also be required by Eircom in order to report on the KPIs proposed in the 2018 Further Consultation.
- A1.921 Aligned with the elapsed time provided to Eircom for the development of the full set of KPIs set out in ComReg decision D05/11 (the '**KPI Decision**'¹⁷⁴⁷), ComReg has decided that, unless otherwise agreed with ComReg, a period of 12 months, from the effective date of this Decision is a proportionate period of time for Eircom to perform the necessary developments to allow for the KPIs required as part of this Decision to be reported upon and published to Access Seekers.

¹⁷⁴⁶ As summarised in paragraph A1.907 above.

¹⁷⁴⁷ ComReg document 'Response to Consultation and Decision on the Introduction of Key Performance Indicators for Regulated Markets', ComReg Document Number 11/45, Decision Number D05/11, dated 29 June 2011.

- A1.922 In order to ensure that Access Seekers continue to be provided with a view of the performance of Eircom's self-supply to its downstream arm compared to wholesale inputs offered and supplied in the WHQA Markets, ComReg has decided that Eircom shall continue to make available relevant KPIs¹⁷⁴⁸ set out in the KPI Decision until such time as the KPIs imposed as a result of this Decision are made available to Access Seekers.
- A1.923 As noted in paragraph A1.907 above, Eircom stated that it was not prepared to undertake any development whatsoever in circumstances where it believes the mapping exercise used to determine the zones is flawed and cannot be relied upon. ComReg's assessment of Eircom's views with respect to the methodology to determine the boundaries of the Zone A MI WHQA Markets and Zone B MI WHQA Markets is set out in geographic market definition section above. As per this assessment, it is ComReg's position that the use of WPZs as the geographical unit for defining the boundaries of the MI WHQA Markets is appropriate, as is ComReg's criteria¹⁷⁴⁹ for designation of such WPZs as being within one of the relevant associated markets.
- A1.924 Based on the analysis set out in the 2018 Further Consultation, ComReg's further analysis set out in paragraphs A1.908 to A1.924 above and its assessment of Respondents' views, ComReg's position is that an obligation for Eircom to make publicly available the KPIs set out in Section 17 of the Decision Instrument (Annex 8) will be imposed.

Requirements governing sharing of confidential and/or commercial information through a non-disclosure agreement

Respondents' Views

- A1.925 No Respondents expressed views with respect to requirements governing sharing of confidential and/ or commercial information through a non-disclosure agreement.

¹⁷⁴⁸ KPIs applicable to the LB TI WHQA and MI WHQA markets in table 6, table 7, table 8 and table 9 of ComReg Decision D05/15.

¹⁷⁴⁹ As set out in Sections 5.7 and A.1.5.4 above.

Requirements governing sharing of confidential and/or commercial information through a non-disclosure agreement

ComReg's Assessment of Respondents' Views

A1.926 ComReg has decided to amend the specific wording of the obligation set out in the 2018 Further Consultation¹⁷⁵⁰ with respect to requirements governing sharing of confidential and/or commercial information through a non-disclosure agreement. Having amended the requirements governing sharing of confidential and/or commercial information through a non-disclosure agreement in the WLA/WCA Decision, ComReg considers that it would be beneficial for Eircom to have a common process with respect to these requirements for the WLA, WCA and Zone B MI WHQA Markets. In addition, ComReg considers that the amended requirements are less burdensome than the requirements set out in the 2018 Further Consultation¹⁷⁵¹. The amended wording is reflected in paragraphs 10.333 to 10.335 above and is more particularly set out in Section 17 of the Decision Instrument contained in Annex 8 of this Decision.

Requirements with respect to transparency of product development

Respondents' Views

- A1.927 Three Respondents (ALTO, BT and Eircom) expressed views regarding the proposed obligations with respect to transparency of product development.
- A1.928 ALTO and BT agreed with ComReg proposals with respect to transparency of product development, noting that ComReg's proposals¹⁷⁵² around development prioritisation are both desirable and welcome^{1753 1754}.

¹⁷⁵⁰ As set out in Sections 17.16 to 17.18 of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation.

¹⁷⁵¹ As set out in Sections 17.16 to 17.18 of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation.

¹⁷⁵² As set out in paragraphs 9.290-9.921 of the 2018 Further Consultation.

¹⁷⁵³ ALTO Submission, page 15.

¹⁷⁵⁴ BT Submission Part 1, page 14.

- A1.929 BT expressed the view that the lack of ability to influence product development prioritisation continues to cause serious concern. BT was of the view that requests from it to Eircom for transparency and influence in the prioritisation of developments has not been successful with what BT described as 'incoherent responses' being provided by Eircom to its key concerns. In addition, BT was of the view that it would be helpful for it to clearly understand where its requests actually reside (by priority) in Eircom's stack of product developments.
- A1.930 BT also welcomed what it considered to be the modernisation of the Transparency remedies, which in its view are essential to support the non-discrimination obligation. BT stated that it specifically welcomed and agreed with ComReg's proposals in paragraphs 9.290¹⁷⁵⁵ and 9.921¹⁷⁵⁶ of the 2018 Further Consultation.
- A1.931 Eircom did not object in principle to an obligation of transparency in respect of product development, however, it objected to the manner by which ComReg approached the specification of the obligation¹⁷⁵⁷.
- A1.932 Eircom noted that what it described as its highly transparent and structured product development process which in its view facilitates Access Seekers to engage with it through product development workshops and through bilateral engagement. Eircom stated that all its RAP developments can be tracked through Open eir's online portal and Eircom encourages Access Seekers submitting Access requests to provide sufficient and clear information including material relevant to prioritisation¹⁷⁵⁸.

¹⁷⁵⁵ In paragraph 9.290 of the 2018 Further Consultation ComReg set out its preliminary view that Eircom should publish the process and criteria used by Eircom in deciding on the prioritisation of product developments.

¹⁷⁵⁶ In paragraph 9.921 of the 2018 Further Consultation ComReg set out its preliminary view that Access Seekers need to be able to plan for the introduction of new products, services or facilities and therefore need information, with a reasonable degree of certainty, regarding the characteristics, timing and the availability of developed products, services or facilities.

¹⁷⁵⁷ Eircom Submission, paragraph 106.

¹⁷⁵⁸ Eircom Submission, paragraph 106.

- A1.933 Eircom objected to what it considered to be ComReg limiting its product development process as currently developed and locking down the process by hard coding it in regulatory obligations. Eircom stated that detailed specification by ComReg is unnecessary and unjustified as it wishes to continue to develop a transparent process in the future (i.e. before the next Market review). Eircom's opinion is that what it considers to be ComReg's regulatory intervention to impose obligations in circumstances where there is no issue is disproportionate and hence Eircom did not accept ComReg's proposals¹⁷⁵⁹.
- A1.934 Eircom expressed the view that the wording of Section 17.21 (v)¹⁷⁶⁰ of the Draft Decision Instrument needs to be amended to align with Section 14.3 (iii)¹⁷⁶¹ of the Draft Decision Instrument, which in Eircom's view makes it clear that the Access Seeker is to offer a view on the priority of its request relative to other requests that have already been submitted by that Access Seeker¹⁷⁶²;
- A1.935 Eircom expressed the following views on Section 17.22 (iv) of the Draft Decision Instrument¹⁷⁶³:
- (a) The proposed obligation on priority is fundamentally different to the prioritisation model operated by Eircom.

¹⁷⁵⁹ Eircom Submission, paragraph 107.

¹⁷⁶⁰ Section 17.21(v) of the Draft Decision Instrument states that "*Eircom must identify the proposed date by which Access Seekers can notify Eircom of the degree of priority to be given to each particular development, and communicate that date to Access Seekers*".

¹⁷⁶¹ Section 14.3(iii) states that "*within thirty (30) working days of receipt of request, confirm whether the requesting Access Seeker has provided Eircom with sufficient information to process the request (unless otherwise agreed between Eircom and the Access Seeker), including the Access Seeker's view on the priority of the request relative to other requests pertaining to the Zone B MI WHQA Markets that have already been submitted by that Access Seeker. During this thirty (30) day period Eircom may seek any clarifications that it may reasonably require from the Access Seeker regarding the request. Eircom or the Access Seeker may, for any particular request, seek agreement from ComReg that the thirty (30) working day period be extended*".

¹⁷⁶² Eircom Submission, paragraph 109.

¹⁷⁶³ Section 17.22 (iv) of the Draft Decision Instrument states, inter alia, that "*Eircom shall, in addition, within eighty five (85) working days, identify the degree of priority relative to all other developments, including Access requests and amendments proposed by Eircom, of regulated products, services or facilities in the Relevant Market that it proposes to assign to each proposed development*".

- (b) The Eircom prioritisation model is applied for the assignment of potential bottleneck resources for IT development (at the gates before entering the assessment stage and subsequently the development stage). The Eircom prioritisation model is applied to all RAP developments that are ready to be considered when an IT gating decision is to be made.
- (c) All of the product developments under consideration at that time of the above IT gating decisions are ranked relative to each other irrespective of which relevant market they are in. Eircom expressed the view that it does not ring-fence RAP development resources for each relevant market and does not believe there is merit in forcing it to do so, nor does it believe that ComReg has any legal basis to do this.
- (d) Eircom considered it questionable whether product development obligations can be imposed in this manner. Rather, in Eircom's view,
“the subject should be approached through a separate exercise that applies to all RAP developments as is currently being discussed through the RGM review”.
- (e) Eircom expressed the view that the proposed obligation in Section 17.22(iv)¹⁷⁶⁴ of the Draft Decision Instrument is of no value, for the reasons outlined above, and should be dropped.

¹⁷⁶⁴ Section 17.22(iv) of the Draft Decision Instrument set out that *“within eighty five (85) working days, unless otherwise agreed with ComReg, Eircom shall confirm in writing to Access Seekers whether it agrees to provide the requested new or amended product, service or facility. Where the request is refused, Eircom shall comply with its obligations to give written reasons for its decision at the time of refusal. In addition, Eircom shall advise all other Access Seekers when the request has been refused and give written reasons for its decision to refuse to meet the request, at the time of refusal, to all other Access Seekers. If Eircom does not intend to fully meet the requirement(s) (i.e., where, for example, Eircom agrees to the development, but some elements of the requirement are not being met) Eircom should make Access Seekers aware of this within eighty five (85) working days. The relevant details, such as the objective reasons for any divergence from the original request, shall also be documented and provided by Eircom to Access Seekers within eighty five (85) working days. Eircom shall, in addition, within eighty five (85) working days, identify the degree of priority relative to all other developments, including Access requests and amendments proposed by Eircom, of regulated products, services or facilities in the Relevant Market that it proposes to assign to each proposed development”*

- A1.936 Eircom expressed the view that Section 17.22(vii)¹⁷⁶⁵ of the Draft Decision Instrument appears to duplicate Section 17.22(iv)¹⁷⁶⁶ and hence should be deleted¹⁷⁶⁷;
- A1.937 Eircom expressed the view¹⁷⁶⁸ that the proposed obligation in Section 17.22(ix)¹⁷⁶⁹ of the Draft Decision Instrument appears to be a duplicate of the proposed obligation in Section 17.21¹⁷⁷⁰.

¹⁷⁶⁵ Section 17.22(vii) of the Draft Decision Instrument in the 2018 Further Consultation set out that “Eircom shall provide and keep updated on its publicly available website a Product Development Roadmap listing all of the accepted access requests including the priority given by Eircom to the development of each request relative to other developments of regulated products, services or facilities within the Zone B MI WHQA Markets. Eircom shall update its Product Development Roadmap with the priority given by it to a request within 85 working days of receipt of such a request”.

¹⁷⁶⁶ Section 17.22(iv) of the Draft Decision Instrument in the 2018 Further Consultation stated, inter alia, that “Eircom shall, in addition, within eighty five (85) working days, identify the degree of priority relative to all other developments, including Access requests and amendments proposed by Eircom, of regulated products, services or facilities in the Relevant Market that it proposes to assign to each proposed development”.

¹⁷⁶⁷ Eircom Submission, paragraph 110.

¹⁷⁶⁸ Eircom Submission, paragraph 111.

¹⁷⁶⁹ Section 17.22(ix) of the Draft Decision Instrument in the 2018 Further Consultation set out that “Eircom shall provide and keep updated on its publicly available website a Product Development Roadmap that includes a method for tracking the progress of developments against the Milestones and associated target dates to develop and launch each proposed product, process or service”.

¹⁷⁷⁰ Section 17.21 of the Draft Decision Instrument in the 2018 Further Consultation set out that “For each proposed development, Eircom shall, at the earliest possible time, but in any event not later than fifteen (15) working days after the receipt of an access request for the development of a product, service or facility in a regulated market, provide and keep updated on its publicly available website a Product Development Roadmap listing all of the accepted access requests with the following details for each proposed development:

- a unique identifier for each access request;
- a description of each access request including a copy of, or links to, all documents relevant to each request;
- the milestones and associated target dates to develop and launch each proposed product, process or service. Eircom shall inform Access Seekers of any changes to such target dates at the earliest point in time after the need for such changes are identified by Eircom;
- a method for tracking the progress of developments against those dates; and
- Eircom must identify the proposed date by which Access Seekers can notify Eircom of the degree of priority to be given to each particular development, and communicate that date to Access Seekers”.

Requirements with respect to transparency of product development

ComReg's Assessment of Respondents' Views

- A1.938 As summarised in paragraphs A1.931 to A1.933 above, while not objecting in principle to an obligation of transparency in respect of product development more generally, Eircom considered that ComReg was seeking to limit Eircom's development of its product development process by making its current process a regulatory obligation. In addition, Eircom expressed the view that ComReg was intervening in circumstances where there is no issue, which is therefore disproportionate, hence Eircom did not accept ComReg's proposals.
- A1.939 ComReg disagrees that the proposed obligations with respect to transparency of product development are disproportionate.
- A1.940 In the 2018 Further Consultation, ComReg's preliminary view was that a greater degree of transparency is required with respect to the product development process currently followed by Eircom. ComReg considers that the views expressed by BT and ALTO (summarised in paragraphs A1.928 to A1.930 above) supports ComReg's view.
- A1.941 In addition, as set out in paragraph A1.746 and A1.747 above, the Cartesian Report raised concerns with respect to wide differences in the elapsed times of product developments. In ComReg's view, providing transparency on the progression of all RAP developments can help provide Access Seekers with a view as to whether developments of equal complexity are being treated equally by Eircom.
- A1.942 ComReg is also aware of difficulties with respect to transparency prioritisation of product development. For example:
- (a) certain criteria used by Eircom in its prioritisation model for assessing the prioritisation of RAP requests continues to be a cause of concern for Access Seekers¹⁷⁷¹;

¹⁷⁷¹ As noted in an email from ComReg to Eircom sent 31 August 2018, during a presentation by Eircom regarding changes to its prioritisation model that took place on 26 June 2018 operators raised concerns in relation to the lack of clarity with respect to what Eircom refer to as 'financial impact' being included as a criterion by which RAP developments are assessed and the appropriateness of such a criterion.

- (b) the views expressed by BT as summarised in paragraph A1.929 above with respect to transparency and the lack of ability to influence prioritisation continues to cause serious concern;
- (c) at a LL/PPC Forum¹⁷⁷², BT raised concerns with respect to tracking the exact priority of each RAP development¹⁷⁷³ and requested that Eircom include a column in its Product Change Request Log ('**PCRL**')¹⁷⁷⁴ that would provide the priority that have been assigned to all RAP IDs in Under Review and In Development status¹⁷⁷⁵. ComReg notes that Eircom declined this request^{1776 1777}; and
- (d) the information that has been shared by Eircom with Access Seekers on its assessment of prioritisation has only provided a view of the priority of the subset of requests assessed at specific PDC gates relative to each other rather than relative to all developments within the relevant market or across markets¹⁷⁷⁸.

A1.943 For the reasons above and those set out in the 2018 Further Consultation, ComReg's position is that *ex ante* regulatory obligations with respect to transparency of product development are required in the Zone B MI WHQA Markets.

¹⁷⁷² Up until November 2018 ComReg had facilitated a range of industry forums - to facilitate discussions between operators and Eircom's wholesale arm on the development and enhancement of the wholesale RAP set in relevant markets for use by Access Seekers as wholesale inputs to the downstream services they provide. One such forum was the Leased Line/Partial Private Circuit Forum ('**LL/PPC Forum**').

¹⁷⁷³ Minutes of LL PPC Forum that took place on 17 January 2018.

¹⁷⁷⁴ The PCRL is an Eircom document that tracks the progress of developments and requests relating to new or amended regulated products, services or facilities against a unique RAP ID assigned to such developments and requests by Eircom.

¹⁷⁷⁵ The key stages of the RAP Product Development Process are described in Eircom document 'open eir RAP Wholesale Products Product Change Request Process' V2.0, dated 31/07/2019.

¹⁷⁷⁶ Minutes of LL PPC Forum that took place on 14 March 2018.

¹⁷⁷⁷ The key stages of the RAP Product Development Process are described in Eircom document 'open eir RAP Wholesale Products Product Change Request Process' V2.0, dated 31/07/2019.

¹⁷⁷⁸ As an example at the 24 January 2018 Eircom Product Development Workshop, Eircom shared information with Access Seekers for the following subset of RAP developments, these RAP developments were transitioning from Concept to Under Review phase: RAP ID 487 had a priority ranking of 1, RAP ID 492 had a priority ranking of 2 and RAP ID 465 had a priority ranking of 3. In 2018, Eircom shared a similar level of information at its Product Development Workshops that took place 21 February 2018 and 21 March 2018.

- A1.944 ComReg considers that the obligations being imposed are the minimum necessary to address the difficulties set out in paragraphs A1.942 to A1.943 above and those that may arise in the absence of *ex ante* regulation. ComReg assesses the Respondents' views with respect to the proposed obligations in paragraphs A1.945 to A1.960 below.
- A1.945 ComReg disagrees with the view expressed by Eircom with respect to what it considers to be ComReg seeking to limit the development of its product development process¹⁷⁷⁹. In ComReg's view, the proposed obligations set out requirements for the publications of information that would be generic to the project management of developments in any product development process. ComReg also notes that all of the timelines specified in the proposed obligations are maximum timelines and that Eircom may share information with Access Seekers earlier than the timelines specified via its current product development process or as that process may evolve.
- A1.946 As summarised in paragraph A1.934 above, Eircom was of the view that the wording of Section 17.21(v) of the Draft Decision Instrument needs to be amended to align with Section 14.3(iii) of the Draft Decision Instrument.
- A1.947 Section 17.21(v) of the Draft Decision Instrument states the following:
- “Eircom must identify the proposed date by which Access Seekers can notify Eircom of the degree of priority to be given to each particular development, and communicate that date to Access Seekers.”*
- A1.948 Section 14.3(iii) of the Draft Decision Instrument states the following:
- “within thirty (30) working days of receipt of request, confirm whether the requesting Access Seeker has provided Eircom with sufficient information to process the request (unless otherwise agreed between Eircom and the Access Seeker), including the Access Seeker's view on the priority of the request relative to other requests pertaining to the Zone B MI WHQA Markets that have already been submitted by that Access Seeker. During this thirty (30) day period Eircom may seek any clarifications that it may reasonably require from the Access Seeker regarding the request. Eircom or the Access Seeker may, for any particular request, seek agreement from ComReg that the thirty (30) working day period be extended”;*

¹⁷⁷⁹ As summarised in paragraph A1.933 above.

- A1.949 ComReg disagrees that the above Sections need to be amended. The proposed transparency requirement set out in Section 17.21(v) of the Draft Decision Instrument is for a proposed date to be identified by Eircom to Access Seekers, with this being the date according to which Access Seekers can set out their views to Eircom with respect to the priority of the request.
- A1.950 As outlined in paragraph A1.948 above, Eircom needs to confirm whether the Access Seeker that has made the request has provided its views on the priority of the request at or before 30 working days¹⁷⁸⁰. In performing its assessment of the priority to be assigned to the request, Eircom will need to take into account this view along with other Access Seekers' views on the priority of the request. ComReg considers that the proposed date by which Access Seekers can provide such views will be influenced, inter alia, by Eircom's product development process and the complexity of the request but will need to be in advance of the 85 working day timeline for Eircom to identify the degree of priority relative to all other developments that it proposes to assign to the request¹⁷⁸¹.
- A1.951 As summarised in paragraph A1.935 above, Eircom expressed views with respect to aspects of the proposed obligation Section 17.22 (iv) of the Draft Decision Instrument. ComReg considers these views in paragraphs A1.952 to A1.956 below.
- A1.952 As set out in paragraphs A1.777 to A1.786 above ComReg considers that 85 workings days is a proportionate period of time for Eircom to perform an assessment as to whether PDC Gate 1 should be approved. ComReg therefore considers that the feedback from Eircom that a prioritisation assessment is performed when Access requests are considered at IT gating¹⁷⁸² decisions supports ComReg's view that 85 workings days, from receipt of a request, is proportionate for the elapsed time for Eircom to propose the priority to be assigned to a request. ComReg therefore disagrees with Eircom's view that the proposed obligation on priority is fundamentally different to the prioritisation model that it currently operates. ComReg notes however that the proposed obligation on priority is likely to be required independent of Eircom's current or any future RAP Product Development Process.

¹⁷⁸⁰ As set out in Section 14.3(iii) of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation.

¹⁷⁸¹ As set out in Section 17.22(iv) of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation.

¹⁷⁸² As summarised in paragraph A1.935(a).

- A1.953 As summarised in paragraph A1.935(c) above, Eircom described that all of the product developments under consideration at the time of the above IT gating decisions are ranked relative to each other irrespective of which relevant market they are in. In this regard, Eircom expressed the view that it does not ring-fence RAP development resources for each relevant market and questioned the merit and legal basis for an obligation to be imposed that would require Eircom to perform such ring fencing.
- A1.954 As noted in paragraph A1.942 above, the information that Eircom has shared with Access Seekers with respect to priority has been limited to the subset of developments assessed at specific PDC gates relative to each other rather than relative to all developments within the relevant market or across markets. In addition, ComReg also notes that a request from BT for Eircom to provide the priority ranking that have been assigned to all requests in Under Review and In Development status was declined by Eircom¹⁷⁸³.
- A1.955 For the avoidance of doubt, ComReg has not proposed that Eircom should ring-fence RAP development resources for each relevant market. ComReg notes however that meeting reasonable requests for Access in regulated markets is a regulatory obligation, required to remedy the potential competition problem(s) in such markets. Therefore, ComReg expects that Access requests, arising in different regulated markets, would be treated with the appropriate level of priority.
- A1.956 ComReg considers that the obligations being imposed with respect to transparency of product development, including that Eircom identifies the proposed degree of priority relative to all other requests in the Zone B MI WHQA Markets, are the minimum set of obligations for transparency of product development which are necessary for this market.

¹⁷⁸³ As summarised in paragraph A1.942(c) above.

- A1.957 ComReg has considered the view expressed by Eircom that the subject of transparency of product development should be approached through a separate exercise, such as discussions on RGM. ComReg considers that Access Seekers need to have certainty that they will be provided, in a timely manner, with the information necessary to allow them to clearly understand the changes or new developments proposed and be able to input into the decisions regarding prioritisation of particular developments. ComReg's position is that *ex ante* regulatory obligations with respect to transparency of product development are required in the Zone B MI WHQA Markets to provide such certainty.
- A1.958 ComReg has considered the view expressed by Eircom that Section 17.22(vii) of the Draft Decision Instrument appears to duplicate Section 17.22(iv) and hence should be deleted¹⁷⁸⁴.
- A1.959 ComReg disagrees that these obligations are duplicates. Section 17.22(iv) sets out what information is to be provided to Access Seekers, including that Eircom, at 85 working days, should identify the degree of priority relative to all other developments in the Zone B MI WHQA Markets that it proposes to assign to each proposed development in this market. Section 17.22(vii) sets out how, at a high level, the information relating to priority is to be provided, i.e. through a Product Development Roadmap.
- A1.960 ComReg has considered the view expressed by Eircom that the proposed obligation in Section 17.22(ix) of the Draft Decision Instrument appears to be a duplicate of the proposed obligation in Section 17.21 and has decided that the obligations in these Sections will be reworded for greater clarity. The wording of the obligations to be imposed are more particularly set out in the Decision Instrument in Annex 8, Section 17 of this Decision.

Amendments to proposed obligations

- A1.961 ComReg has further considered the proposed wording of the obligation set out in Section 17.22(iii) of the Draft Decision Instrument¹⁷⁸⁵ which states that:

not later than thirty (30) working days, unless otherwise agreed with ComReg, after receipt of the access request, Eircom shall agree with the Access Seeker an accurate description of the requirement(s) and shall publish a description of the requested product or service on its publicly available website;

¹⁷⁸⁴ As summarised in paragraph A1.936.

¹⁷⁸⁵ Contained in Appendix 4 of the 2018 Further Consultation.

- A1.962 ComReg considers that it is proportionate that the wording of the above requirement be amended to remove the explicit reference to Eircom agreeing with the Access Seeker an accurate description of the requirement. ComReg considers that during the thirty (30) working days period for Eircom to confirm whether or not the Access Seeker has provided it with sufficient information to process the request,¹⁷⁸⁶ Eircom will have obtained sufficient information and have engaged with the Access Seeker in such a manner that will allow it to produce an accurate description of the requirement which will be agreeable to the Access Seeker. ComReg considers that it is proportionate to provide Eircom with additional time, following this 30 day period, for Eircom to document and publish an accurate description of the request. The wording of this requirement shall therefore be amended to state that Eircom shall publish an accurate description of the requested product, service or facility on its publicly available wholesale website within forty (40) working days (thereby providing a further 10 working days).
- A1.963 ComReg has also considered further the proposed wording of the obligation set out in Section 17.22(iv)¹⁷⁸⁷ of the Draft Decision Instrument¹⁷⁸⁸ with respect to the identification to Access Seekers of the degree of priority that Eircom propose to assign to requests.

¹⁷⁸⁶ Including the Access Seeker's view on the priority of the request relative to other requests already submitted by the Access Seeker pertaining to the Relevant Market.

¹⁷⁸⁷ Section 17.22(iv) of the Draft Decision Instrument, contained in Appendix 4 of the 2018 Further Consultation states that within eighty five (85) working days, unless otherwise agreed with ComReg, Eircom shall confirm in writing to Access Seekers whether it agrees to provide the requested new or amended product, service or facility. Where the request is refused, Eircom shall comply with its obligations to give written reasons for its decision at the time of refusal. In addition, Eircom shall advise all other Access Seekers when the request has been refused and give written reasons for its decision to refuse to meet the request, at the time of refusal, to all other Access Seekers. If Eircom does not intend to fully meet the requirement(s) (i.e., where, for example, Eircom agrees to the development, but some elements of the requirement are not being met) Eircom should make Access Seekers aware of this within eighty five (85) working days. The relevant details, such as the objective reasons for any divergence from the original request, shall also be documented and provided by Eircom to Access Seekers within eighty five (85) working days. Eircom shall, in addition, within eighty five (85) working days, identify the degree of priority relative to all other developments, including Access requests and amendments proposed by Eircom, of regulated products, services or facilities in the Relevant Market that it proposes to assign to each proposed development;

¹⁷⁸⁸ Contained in Appendix 4 of the 2018 Further Consultation.

- A1.964 ComReg considers that Eircom should have an appropriate mechanism that manages and allows requests to be made for changes to the prioritisation of Access requests after the initial priority has been set. However, it is important that there is an appropriate degree of transparency regarding prioritisation, changes to it and the reasons for such changes. Should changes in prioritisation be required, Eircom should include objective justification for the changes made in its Product Development Roadmap.
- A1.965 As discussed in paragraphs A1.940 to A1.943 above ComReg is aware of difficulties with respect to transparency prioritisation of product development. Having considered the matter further, ComReg's position is that it is also necessary that Access Seekers are made aware of the initial priority assigned to an Access request or if a change of prioritisation has occurred to a request. ComReg's position is that the transparency requirement, as summarised in Section 17.22(iv) of the Draft Decision Instrument¹⁷⁸⁹, is amended accordingly so that Eircom advises all Access Seekers of the initial priority assigned by Eircom to an Access request and advises all Access Seekers of a reprioritisation of such a request. In ComReg's view, this obligation is proportionate, as Eircom will be updating its Product Development Roadmap with such information.
- A1.966 ComReg has further considered the obligation set out in Section 17.22(x) of the Draft Decision Instrument that: "*Eircom shall provide any other information as may reasonably be required by ComReg for the purposes of ensuring transparency*". ComReg's position is that this was intended as a reflection of ComReg's powers to direct the provision of information in appropriate cases rather than a standalone obligation. ComReg position is that this is not required to be included in the Decision Instrument of this Decision and does not intend to impose such an obligation at this time but will monitor the position and, if appropriate, may issue directions or further specify Eircom's transparency obligations in this regard.
- A1.967 The wording of the obligations to be imposed as a result of the amendments described in paragraphs A1.961 to A1.968 above are reflected in the obligations summarised in paragraphs 10.340 to 10.342 above more particularly set out in the Decision Instrument in Annex 8, Section 17 of this Decision.

¹⁷⁸⁹ Contained in Appendix 4 of the 2018 Further Consultation.

Requirement with respect to the provision of information concerning network roll out plans

Respondents' Views

A1.968 No Respondents' provided views with respect to the provision of information concerning network roll out plans.

Requirement with respect to the provision of information concerning network roll out plans

ComReg's Assessment of Respondents' Views

A1.969 Based on the analysis set out in the 2018 Further Consultation¹⁷⁹⁰ ComReg's position is that obligations proposed with respect to the provision of information concerning network roll out plans shall be imposed on Eircom.

Notification of changes to Data Contract

Respondents' Views

A1.970 Two Respondents (ALTO and BT) expressed the view that ComReg should impose a 'Notification of changes to Data Contract' remedy in the WHQA Market. The remedy would oblige Eircom to adhere to Eircom's committed timescale¹⁷⁹¹ for notification of changes to Eircom's data contract.

A1.971 ALTO and BT stated that the industry is highly automated with continuous updates being made by Eircom to its order handling system. While both ALTO¹⁷⁹² and BT¹⁷⁹³ welcome improvements and work to ensure they can align with these continuous updates there is an issue which is problematic for the Industry when there are late notifications of changes to the Data Contracts.

¹⁷⁹⁰ Paragraphs 9.302 and 9.303 of the 2018 Further Consultation.

¹⁷⁹¹ Open eir Unified Gateway Interface Guidelines, Version 2.1, January 2016.

Section 3.3 (page 10): Open eir will notify industry of changes to the Data Contract 12 weeks prior to the development of new functionality. Exceptionally Open eir will provide a minimum of 6 months notice of changes to the Data Contract, which are not backward compatible.

https://www.openeir.ie/uploadedFiles/Content/Customer_Service/Small_Content_Items/UG%20Interface%20Guidelines%20v2_1.pdf

¹⁷⁹² ALTO Submission, page 13.

¹⁷⁹³ BT Submission Part 1, page 12.

- A1.972 BT's opinion is that Eircom is often late against its own committed timescales in providing the "Data Contract" i.e. the specification of technical changes. This lateness reduces the time for BT developers and other operators to update their systems. It puts Industry at risk of not being ready for the go live date for the updates. BT states that most updates are timely, however, according to BT there have been instances of late notification of the data contract changes.
- A1.973 BT stated that the Eircom committed timescale for notification of changes to Eircom's data contract should now be coded into a remedy.

Notification of changes to Data Contract

ComReg's Assessment of Respondents' Views

- A1.974 ComReg notes ALTO's and BT's views on notification of changes to Eircom's UG Data Contract.
- A1.975 ComReg has already assessed this issue in A1.642 to A1.650 above in ComReg's assessment of the Respondents' views with respect to the obligation that Eircom to provide Access to Eircom's OSS.
- A1.976 As detailed in paragraphs A1.644 to A1.652 above, ComReg's position is that Eircom has an obligation¹⁷⁹⁴ to notify Access Seekers of changes to the Eircom OSS (including UG Data Contract), three (3) months prior to the deployment of new functionality, which is backward compatible. For this reason, ComReg disagrees with ALTO and BT's views (as outlined in paragraphs A1.970 to A1.973 above) that Eircom committed timescales for notification of changes to Eircom's data contract should now be imposed as an obligation.

¹⁷⁹⁴ Paragraph 10.301(a) of this Decision: "(a) Eircom shall (unless otherwise agreed by ComReg) publish, on its publicly available website - at least three months in advance - any proposed changes to the LLRO and any proposed changes to Wholesale prices and the application of such prices for the purposes of notifying all interested parties of such changes."

Information as to whether or not a customer's premise falls in the relevant Zones

Respondents' Views

A1.977 Verizon raised a concern as to whether it will only be Eircom that will identify or hold the information as to whether or not a customer's premise falls in the relevant Zone A or Zone B areas and therefore whether or not a regulated offer is available. Verizon stated that it assumes ComReg expects this kind of market power is addressed through the non-discrimination obligations regarding information and urged clarity or strengthened conditions or guidance from ComReg on this point. Verizon stated further that it is vital that Eircom is subject to pro-active transparency requirements, which enable other providers to quickly and easily establish the regulatory status for any premise where Access is sought¹⁷⁹⁵.

A1.978 [§< [REDACTED]
[REDACTED]
[REDACTED]]¹⁷⁹⁶.

Information as to whether or not a customer's premise falls in the relevant Zones

ComReg's Assessment of Respondents' Views

A1.979 With respect to the Respondents' views summarised in paragraphs A1.977 to A1.978 above, ComReg is not intending as part of this Market Review to impose an obligation on Eircom to maintain and publish a list of regulated addresses.

A1.980 As per Annex 2 of the 2018 Further Consultation, a map of Ireland showing the Zones A MI WHQA Markets and is available to view

¹⁷⁹⁵ Verizon Submission, paragraph 16.

¹⁷⁹⁶ Page 21 of enet's confidential Submission.

- A1.981 Moreover, a list of Small Areas that delineate every Small Area by Zone A or Zone B will be available in whatever format an SP wishes to have it in¹⁷⁹⁷. However, for ease of use, the map detailed in Annex 6 below allows users to check if a particular building is in the Zone A MI WHQA Markets or Zone B MI WHQA Markets. This allows users to search the map based on address, Small Area ID and customer name.
- A1.982 In addition, ComReg has also published information¹⁷⁹⁸ that provides a mapping of Small Areas to designation in either Zone A or Zone B MI WHQA Markets.
- A1.983 This information will allow¹⁷⁹⁹ Access Seekers to ascertain if a particular premises is located in either the Zone A or Zone B MI WHQA Markets.

¹⁷⁹⁷ For example, .xls, .csv, etc.

¹⁷⁹⁸ ComReg document 'Request for Clarification on the WHQA 2018 Further Consultation List of Small Areas, Criteria 1, 2a, 2b', ComReg reference 18/28a, published 13 April 2018.

¹⁷⁹⁹ As referred to in paragraphs A1.980 to A1.981 above.

A.1.10.4 Price Control and Cost Accounting Remedies and Accounting Separation Remedies

Overview

- A1.984 In the 2018 Further Consultation¹⁸⁰⁰ ComReg proposed price control and cost accounting obligations and accounting separation obligations in relation to the Zone B MI WHQA Markets. In this Decision ComReg maintains this position.
- A1.985 The Zone B MI WHQA price control and cost accounting remedies and accounting separation remedies to be imposed in this Decision are described in Section 10.9 and Section 10.10, respectively. The price control remedies are summarised in paragraphs 10.447 to 10.448. The accounting separation remedies are summarised in paragraphs 10.456 to 10.458.
- A1.986 In reaching its decision on the imposition of these obligations, ComReg has considered the views of Respondents to the 2018 Further Consultation. These views are summarised in paragraphs A1.991 to A1.997 below and ComReg's assessment of the Respondents' views is set out in paragraphs A1.998 to A1.1008.
- A1.987 All 7 Respondents to the 2018 Further Consultation expressed views on the proposed price control and cost accounting remedies as set out in the 2018 Further Consultation for the Zone B MI WHQA Markets (namely ALTO, BT, Eircom, enet, Verizon and Vodafone).
- A1.988 Eircom were of the view that a cost orientation might be appropriate in the event that ComReg could justify that there is an operator with SMP in the Zone B MI WHQA Markets. Eircom agreed with ComReg's proposal to maintain current prices pending the completion by Eircom of the update of a new price schedule, in line with its obligations. Eircom also welcomed ComReg's proposal to withdraw the obligations in respect of the MST.
- A1.989 BT, ALTO, Verizon, Vodafone and enet agreed with the cost orientation obligation in the Zone B MI WHQA Markets. However, BT was concerned that Eircom's returns in this market are above the regulated returns. Verizon also agreed with imposing cost orientation but submitted that the existing prices are generally higher than the equivalents in other European countries.

¹⁸⁰⁰ Paragraphs 9.389 to 9.398 of the 2018 Further Consultation.

A1.990 In relation to the withdrawal of the MST obligation, BT, ALTO and Vodafone disagreed with the removal of this obligation on the basis that for multi-site contracts, cost orientation obligations could be made redundant, including by below cost selling. These operators disagreed with ComReg's proposal to rely on *ex post* competition law for MI WHQA services in Zone A.

Respondents' Views

A1.991 Eircom were of the view that cost orientation might be appropriate in the event that ComReg could justify that there is an operator with SMP in the Zone B MI WHQA Markets. Eircom agreed with ComReg's proposal to maintain current prices pending the completion by Eircom of the update of a new price schedule, in line with its obligations¹⁸⁰¹. Eircom also welcomed ComReg's proposal to withdraw the obligations in respect of the MST,¹⁸⁰² but noted that the rationale ComReg provided differed between the 2016 Consultation and the 2018 Further Consultation.

¹⁸⁰¹ Eircom Submission, page 40.

¹⁸⁰² Eircom Submission, page 39.

A1.992 BT, ALTO, Verizon, Vodafone and enet agreed with the cost orientation obligation in the Zone B MI WHQA Markets. BT, ALTO and Vodafone explicitly agreed that the BU-LRAIC Plus cost model is the appropriate methodology to use. However, BT was concerned that Eircom's returns in this market are above the regulated rate and submitted that ComReg needs to impose a remedy that the returns on capital are aligned with the regulated WACC.¹⁸⁰³ Verizon also agreed with imposing cost orientation but submitted that the existing prices are generally higher – and with significant fluctuation – than the equivalents in other European countries and supported this view with a comparison of price trends for high-speed Ethernet services among selected countries, including Ireland.¹⁸⁰⁴ enet submitted that the proposed price control and cost accounting obligations for Zone B should extend to Zone A, given that it believes there are no alternative networks within easy reach and therefore Eircom remains the SMP operator.¹⁸⁰⁵ Finally, Zayo was concerned with the economic space between duct/pole and leased lines tariffs, in that it suggested that BU-LRAIC Plus based tariffs could preclude competition, given Eircom's economies of scale and scope.¹⁸⁰⁶

¹⁸⁰³ BT April Submission, page 14.

¹⁸⁰⁴ Verizon Submission, page 6.

¹⁸⁰⁵ enet Submission, page 19.

¹⁸⁰⁶ Zayo Submission, paragraph 5.1.9.

- A1.993 The withdrawal of the MST obligation was one relevant theme common to BT,¹⁸⁰⁷ ALTO¹⁸⁰⁸ and Vodafone. These operators disagreed with the removal of this obligation on the basis that for multi-site contracts, cost orientation obligations – it was argued – could be made redundant, including by below cost selling in Zone A. These operators noted that ComReg’s experience in regulating broadband bundles (inclusive of unregulated services) could be applied in this context. Vodafone disagreed with ComReg’s proposal to rely on *ex post* competition law for MI WHQA services in Zone A, stating that these *ex post* controls were not sufficiently timely to be effective.¹⁸⁰⁹ Vodafone suggested that ComReg needed to impose internal bid and price control structures to contain aggressive Eircom retail sales and proposed in this regard that ComReg requires Eircom to put in place a modified margin squeeze test for bids straddling both Zones A and B. At a minimum such a test should ensure replicability of the regulated services in Zone B and of any other wholesale and retail cost inputs in this zone. BT and ALTO, on the other hand, considered accounting separation remedies were also not sufficiently timely to be effective to prevent a margin squeeze.
- A1.994 BT raised two other issues of note. Firstly, BT was concerned that existing interconnection options provided by Eircom were limited to electronic aggregation.¹⁸¹⁰ BT described the availability of fibre cable aggregation for interconnection with Open Reach in the UK market. It argued that this alternative is provided at a lower cost than the interconnection facility provided by Eircom. It also argued it avoids the cost of own aggregation in the interconnected operator’s network (BT in this case). BT’s view is that with the proposed deregulation of the WHQA market for MI LL terminating products in Zone A and the recognition of a more extensive range of trunk routes in the core network, the opportunity for operators to extend networks is compromised by the existing (electronic) interconnection offered by Eircom. For BT the interconnection options currently available discourages investment by alternative operators.

¹⁸⁰⁷ BT April Submission, page 14.

¹⁸⁰⁸ ALTO Submission, page 16.

¹⁸⁰⁹ Vodafone Submission, page 12.

¹⁸¹⁰ BT August Submission, page 5.

- A1.995 The second issue raised by BT concerns the recovery of the investments it has made in Edge-Node Handover (ENH) nodes.¹⁸¹¹ BT noted it has made considerable investments in ENH Interconnection, designed to address large scale interconnection capacities. BT argued that due to the degree of deregulation within the WHQA market, ENH investments will be undermined. This is because Eircom will no longer be obliged to provide MI terminating segments within Zone A. Eircom will only be obliged to provide connectivity for terminating segments within Zone B, inside the ENH node region. BT stated that it estimated that it could be forced to re-plan over half of its Zone B End User links.
- A1.996 With regards to ComReg's proposal to continue to apply the existing Accounting Separation obligations, only Eircom, BT, ALTO and Vodafone made specific submissions. Eircom sought confirmation¹⁸¹² on the proposals made by ComReg relative to the HCA Separated Accounts or in the Additional Financial Statements and noted that any Additional Financial Information (AFI) seeking sub-geographic reporting of revenues or costs would not be proportionate. Eircom also requested the removal of the AFI for Wholesale Ethernet Interconnect Links based on materiality.
- A1.997 BT and ALTO agreed with the imposition of the accounting separation obligations. However, as noted above, these Respondents considered accounting separation remedies were not sufficiently timely or effective to prevent margin squeeze. BT and ALTO also submitted that ComReg should include a Current Cost Accounting (CCA) obligation within the suite of accounting separation obligations.¹⁸¹³ Vodafone submitted that the existing accounting separation obligations needed to be strengthened.¹⁸¹⁴

¹⁸¹¹ BT August Submission, page 3.

¹⁸¹² Eircom Submission, page 38.

¹⁸¹³ BT April Submission, page 14 and ALTO Submission, page 16.

¹⁸¹⁴ Vodafone Submission, page 12.

ComReg's assessment of Respondents' views

- A1.998 ComReg's notes the broad agreement among Respondents for the imposition of a price control obligation of cost orientation in Zone B of the MI WHQA Markets (including the qualified agreement of Eircom). BT proposed that ComReg need to impose a remedy that the returns on capital are aligned with the regulated WACC. ComReg notes that BU-LRAIC Plus cost model is set to ensure recovery of the regulated rate WACC of 8.18% (ComReg's 2014 WACC Decision).¹⁸¹⁵ ComReg is currently consulting on the WACC rate¹⁸¹⁶ and reserves the right to require prices to be updated depending on the outcome of any decision ComReg may take on the WACC rate as a result of that consultation process.
- A1.999 With respect to the price benchmarks presented by Verizon, which it believes demonstrate the need to ensure charge controls are appropriately set, ComReg notes that it has considered using benchmarks as a form of price control. This approach is discussed in paragraphs 10.385 to 10.387 of this Decision. While the evidence produced by Verizon is informative, ComReg does not consider that benchmarking is an appropriate approach to set prices in Zone B for MI WHQA products, services and associated facilities, given that it has already completed a BU-LRAIC Plus cost model, which it believes to be representative of appropriate and efficient costs incurred by Eircom.¹⁸¹⁷
- A1.1000 With regards to the comment submitted by enet that price control and cost accounting obligations should extend to Zone A, ComReg disagrees with this position. As result of the analysis set out in Section 6, ComReg found no Undertaking to have SMP in the Zone A MI WHQA Markets hence price control and cost accounting remedies are no warranted in these markets.

¹⁸¹⁵ ComReg Document 14/136 Decision D15/14: Cost of Capital ('**2014 WACC Decision**').

¹⁸¹⁶ ComReg Consultation Document 19/54: Review of Weighted Average Cost of Capital (WACC).

¹⁸¹⁷ ComReg is of the view that this is consistent with the judgment of Cooke J. in Vodafone Ireland Limited v Commission for Communications Regulation [2013] IEHC 382.

- A1.1001 With respect to the concern expressed by Zayo, that BU-LRAIC Plus based tariffs, could preclude competition, ComReg is of the view the BU-LRAIC Plus is the appropriate methodology to setting a “build/buy” price signal for a hypothetical, forward-looking efficient operator. This is based on assessment set out in paragraphs 10.404 to 10.438 above. In addition to this, testing replicability in the manner described by Zayo would require ComReg to continue to impose MST obligations (or a modified version) in this market. However, as noted in paragraph 10.442, ComReg has decided to withdraw these obligations.
- A1.1002 As noted above, the withdrawal of the MST obligation was one relevant theme common to BT, ALTO and Vodafone. In this Decision ComReg has maintained the position set out in the 2018 Further Consultation and decided to withdraw the MST obligation. In paragraphs 10.442 to 10.444, ComReg has justified this decision. In this regard, ComReg notes that the leased lines retail market is currently deregulated and this Decision is removing obligations with respect to terminating segments in the Zone A MI WHQA Markets. Hence, where bids or contracts rely on services in the Zone A MI WHQA Markets, access providers – subject to *ex post* competition law – have the freedom to seek optimal pricing strategies. In this context, given the likely predominance of Zone A services in these type of contracts, any modified MST test – such as the one proposed by Vodafone – would have limited reach. ComReg would also note that unlike broadband, where the unregulated components (TV content) are reasonably defined and observable, the set of costs which are normally associated with services bundled with leased lines (e.g. disaster recovery, managed network solutions) are not directly observable by ComReg. As noted in paragraph 10.444 ComReg is of the view that the combination of *ex post* competition law assurances in Zone A and cost orientation and non-discrimination obligations in Zone B is the proportionate approach to mitigate the risks expressed by operators. In particular, Eircom is obliged to provide products, services and associated facilities on cost-oriented prices on a non-discriminatory basis to both wholesale purchasers and its downstream business. ComReg also notes in this regard that Eircom’s obligations in Zone B MI WHQA Markets are further specified, with the imposition of a Statement of Compliance (‘SoC’) in this Decision. Notwithstanding this, ComReg has further considered ways of limiting the risk of inappropriate pricing behaviour and to that effect is requiring, as part of this Decision, Eircom to provide as part of its accounting separation obligations a report detailing annual revenues and volumes realised from wholesale MI terminating segments in Zone B (as described in paragraph) so that ComReg retains the capacity to monitor the quantum of MI revenues in each market zone.

A1.1003 With respect to the availability of alternative interconnection options, which was outlined by BT, ComReg's view is that electronic aggregation of traffic from multiple wholesale services allows for economies of scale and scope (e.g. traffic management) in the transmission of traffic over the Eircom NGN. In addition, ComReg notes the list of revised interconnection solutions outlined in this Decision, e.g. co-location sharing, extends the range of interconnection options to be made available to Access Seekers, and can provide further cost economies. However, ComReg does not oppose that alternative providers seek additional forms of interconnection and they can do so by submitting a reasonable access request to Eircom under existing protocols. ComReg would also note that the current charges for interconnection services offered by Eircom are and will continue to be subject to cost orientation obligations under the terms and duration specified in this Decision. These interconnect services comprise of Customer-Sited, In-Building and In-Span variants. Through leveraging of colocation facilities and in combination with the remedies relating to CEI such as duct/pole and fibre access obligations, set out in ComReg's Decision,¹⁸¹⁸ BT and other operators can avail of alternative forms of interconnection. ComReg also refutes the observation submitted by BT that WEILs charges are largely consist of common costs. In particular, ComReg clarifies that the existing and proposed prices for the interconnect links (WEILs) are based on BU-LRAIC Plus cost models. These models are set to recover primarily the capital and operating costs associated with both the port (which are bandwidth driven) and the fibre cable (distance-based) with an appropriate allowance for common costs.

¹⁸¹⁸ ComReg's Decision D11/18 "Pricing of wholesale broadband services, Wholesale Local Access (WLA) market and the Wholesale Central Access (WCA) markets".

- A1.1004 With respect to the concerns expressed by BT relating to the recovery of investments in Edge Node Handover ('**ENH**'), ComReg notes that it will continue to mandate access to ENH facilities for terminating segments MI products within Zone B, which are served by non-trunk Aggregation nodes. BT or any other operator is not precluded from negotiating commercial terms with Eircom for connectivity from the point where terminating segment obligations cease to apply to a location in the network where ENH interconnection facilities are present. The ENH tariffs are largely based on the recovery of costs associated with electronics. These tend to have asset lives of less than ten years and therefore given that some operators have been using these facilities for a number of years a significant share of the costs have already been recovered. In addition to this, other mitigating factors apply. Firstly, the proposed changes in the Decision will impact on leased line traffic but ENH interconnection facilities are not specific to leased line products. They can be used for a number of services, not least voice and broadband. Secondly, Eircom is implementing a change to its broadband offering whereby operators with ENH facilities collocated with certain PE node locations serving two NGN regions will avail of Same Region handover discounts for Bitstream traffic originating from both NGN regions, which allow an increased use of these investments. It is expected that this facility and resulting discount, based on Same Region prices, will also apply to the WHQA MI terminating segments in the Zone B MI WHQA Markets.
- A1.1005 With respect to the comments made in relation to the Accounting Separation and in particular on the confirmation that Eircom was seeking in relation to the changes to the HCA Separated Accounts, ComReg notes that the changes it is allowing, and which are summarised in paragraphs 10.456 to 10.458, are being decided with a view to ensure proportionality given the de-regulation of large segments of the WHQA market, which this Decision is enacting. On the basis of this principle, and for the avoidance of any doubt, ComReg is not seeking a sub-geographic allocation of costs. ComReg are requiring in this Decision that Eircom provide an AFI report containing a disaggregation of wholesale revenues for the regulated Zone B MI WHQA Markets. In ComReg's view such a requirement is proportionate and feasible:

- (a) Eircom has the OSS capability to derive distance-based charges associated with the physical access link (WSEA Physical), which require that Eircom determine the customer site location and serving Eircom Exchange. This capability was developed in the context of meeting Eircom's cost orientation obligation (when providing services to access seekers) and margin squeeze test obligations (when providing equivalent services to its downstream business). This capability is also used currently in Eircom's HCA accounts for the purpose of calculating intra-business unit charges¹⁸¹⁹;
- (b) The identification of customer service locations allows Eircom to determine the corresponding WPZ and therefore to determine if the terminating segment is serving a customer in Zone A or in Zone B within the WHQA market;
- (c) The revenues realised from the WSEA Physical component of all Zone B MI terminating segments can then be calculated based on the existing access cable length and bandwidth supplied and on the consequent relevant wholesale tariffs;
- (d) For the calculation of the revenues associated with transmission over the core network up to a handoff point (WSEA Logical), Eircom has the capability to determine the associated Aggregation Node (be it local or via remote connectivity) connected to the customer serving Exchange. The identification of the Aggregation node allows it to establish the node as being a trunk or a non-trunk node, based on the market analysis classification;
- (e) In instances where the serving Aggregation Node is classified as trunk the revenues for the regulated WSEA Logical services associated with terminating segments in Zone B are based on the regulated Same Node tariffs for the service bandwidth selected and the applicable regional density classification;

¹⁸¹⁹ For example, Eircom's OSS Radical System

- (f) Where the serving Aggregation Node is classified as non-trunk node, the revenues for the WSEA Logical services associated with terminating segments in Zone B include the revenues associated with logical connectivity either within the same Aggregation Node or the Aggregation Node collocated with associated PE node, depending on where the access seeker has an interconnection handoff point. This facility approximates to the existing Same Region WSEA logical option, or Same Node WSEA logical if handoff occurs at the serving Aggregation Node. Hence, where the serving Aggregation Node is classified as a non-trunk node, the revenues for the WSEA Logical services associated with terminating segments in Zone B are based on the regulated Same Region for bandwidth and class of service selected and the applicable regional density classification, or Same Node if as noted handoff occurs at the Aggregation Node;
- (g) In those instances where logical access is being provided at a non-trunk node but the access seeker interconnects with an Edge Node in the same region, Eircom is required to provide additional logical connectivity from the PE Node to the Edge node at the applicable regulated tariff for Same Region Edge Node Handoff;
- (h) In summary, four inputs are required for the calculation of the wholesale regulated revenues associated with MI LL terminating segments in Zone B:
 - (i) WSEA Physical Tariff;
 - (ii) WSEA Logical Tariff (Same Node);
 - (iii) WSEA Logical Tariff (Same Region);
 - (iv) WSEA Logical Tariff (Edge Node Handover).

A1.1006 In relation to the removal of the AFI report for Wholesale Ethernet Interconnect Links (**WEILs**), ComReg notes Eircom will continue to be subject to access obligations and price controls, irrespective of being provided in Zone A or Zone B. ComReg believes this is important for the development of competition in both zones and therefore disagrees that this AFI report obligation should be removed.

A1.1007 BT and ALTO considered accounting separation remedies were not sufficiently timely or effective to prevent margin squeeze and Vodafone submitted that the existing accounting separation obligations need to be strengthened. ComReg's position in relation to the withdrawal of the MST is outlined above, including ComReg's approach to address these concerns.

A1.1008 In relation to BT and ALTO's submissions that ComReg should include a Current Cost Accounting ('CCA') obligation within the suite of accounting separation obligations, ComReg is of the view that this is not proportionate. ComReg is of the view that the current set of published HCA accounts strikes the right balance between allowing industry a view of the regulated returns of Eircom in WHQA Markets (as reconciled to its statutory financial statements) and not disclosing information which may put Eircom at an unfair competitive disadvantage. Such balance is of more relevance now that a significant de-regulation of WHQA markets is undertaken as part of this Decision. Hence, ComReg's view is that an expansion of the accounting separation reporting suite to include CCA accounts is not proportionate. Furthermore, ComReg's view is that the advantages of having CCA (i.e. updated costs) in the separated accounts are already considered, due to ComReg's choice of a BU-LRIC+ cost methodology, which, as described in paragraphs 10.418 to 10.425, is based on current and updated costs.

A.1.10.5 Requirement to provide a Statement of Compliance

A1.1009 Five Respondents (ALTO, BT, Eircom, Verizon and Vodafone) expressed a view on ComReg's proposal requiring Eircom to provide a SoC to ComReg with respect to all of its regulatory obligations as imposed in the Zone B MI WHQA Markets¹⁸²⁰.

Statement of Compliance Obligations

Respondents' Views

A1.1010 Four Respondents (ALTO, BT, Verizon and Vodafone) broadly agreed with ComReg's proposal^{1821 1822 1823 1824}. Eircom disagreed with ComReg's proposal requiring Eircom to provide a SoC to ComReg with respect to all of its regulatory obligations as imposed in the Zone B MI WHQA Markets¹⁸²⁵.

A1.1011 ComReg has grouped Respondents' Submissions and related issues using the following themes:

- (a) Transparency – Publication of the SoC (see paragraphs A1.1012 to A1.1017 below);
- (b) Potential impact on Eircom of the proposed SoC obligation (see paragraphs A1.1018 to A1.1024 below);
- (c) SoC Signatory (see paragraph A1.1025 below);
- (d) SoC and risk assessment on investment decisions (see paragraphs A1.1026 to A1.1027 below);
- (e) SoC and Eircom RGM (see paragraphs A1.1028 to A1.1032 below);
- (f) SoC and Compliance (see paragraph A1.1033 below);
- (g) ComReg's vires with respect to the imposition of the SoC obligation in the WHQA market (see paragraph A1.1034 below); and

¹⁸²⁰ Paragraphs 10.465 to 10.474 of this Decision.

¹⁸²¹ ALTO Submission, page 16.

¹⁸²² BT Submission Part 1, page 14-15.

¹⁸²³ Verizon Submission, page 8.

¹⁸²⁴ Vodafone Submission, page 12.

¹⁸²⁵ Eircom Submission, paragraphs 102-111.

(h) Other issues raised by Respondents (see paragraph A1.1035 below).

Transparency – Publication of the SoC

- A1.1012 ALTO stated that ComReg should specify simplified SoCs and publish same in order to ensure greater visibility of Eircom’s behaviour and encourage transparent dealings¹⁸²⁶.
- A1.1013 BT stated that ComReg should specify the clarity¹⁸²⁷ required of SoCs and to publish same in order for BT to assess whether the SoCs are correct¹⁸²⁸.
- A1.1014 Verizon stated that Access Seekers require as much transparency as possible and simple “yes/no” statements of compliance do not meet these needs. ComReg should aim for maximum transparency and granularity in the SoC¹⁸²⁹.
- A1.1015 Eircom did not agree that the SoCs should be published having regard to ComReg’s justification for publication as outlined in the 2018 Further Consultation¹⁸³⁰. Eircom stated that evidence of equivalence is addressed through the publication of KPIs and the proposal to publish the SoC amounts, in Eircom’s opinion, to over-regulation¹⁸³¹.

¹⁸²⁶ ALTO Submission, page 16.

¹⁸²⁷ BT Submission Part 1, page 15, “*For example there should be a set of simple answers per product that it is compliant i.e. YES or NO. The presentations of RGM reports by Eircom have chosen to provide information on process and training which are important and welcome; however they don’t actually address the direct compliance of the services. Thus, they are not very useful*”.

¹⁸²⁸ BT Submission Part 1, page 14-15.

¹⁸²⁹ Verizon Submission, paragraph 33.

¹⁸³⁰ Paragraph 9.442 of the 2018 Further Consultation, “*that the provision of the SoC to Access Seekers gives greater visibility to Access Seekers of the processes Eircom has put in place to ensure it complies with its regulatory obligations in the Zone B MI WHQA Markets. This has the potential to improve Access Seekers confidence that they are receiving the same wholesale product or service that Eircom is supplying to its downstream arm, for example, and this is beneficial to providing regulatory certainty, competition and ultimately to End Users*”.

¹⁸³¹ Eircom Submission, paragraph 129.

A1.1016 Eircom stated that ComReg's proposal to publish the SoC is invasive and publication could unintentionally reveal commercially sensitive information on Eircom's operational processes potentially exposing Eircom to a loss of intellectual property, malicious attack or security breaches of the network and information systems as well as risking a loss of competitive intellectual property advantage¹⁸³².

A1.1017 Eircom disagreed with the proposed obligation to publish the SoC given that it receives no feedback from ComReg on whether the SoC is acceptable. Eircom's view is that ComReg should sign off the SoC, particularly if the obligation is imposed that an Eircom director(s) is to sign the SoC. Eircom stated that ComReg cannot reserve its rights to take action at a later stage in relation to SoCs that have been submitted to ComReg for review. In Eircom's opinion the absence of a review process by ComReg together with the proposal to publish SoCs will lead to Eircom being open to "trial by industry"¹⁸³³.

Potential impact on Eircom of the proposed SoC obligation

A1.1018 Eircom stated that ComReg's proposals in respect of the SoC does not appear to be consistent with recital 28 of the Authorisation Directive which states

*"Subjecting service providers to reporting and information obligations can be cumbersome, both for the Undertaking and for the national regulatory authority concerned. Such obligations should therefore be proportionate, objectively justified and limited to what is strictly necessary. It is not necessary to require systematic and regular proof of compliance with all conditions under the general authorisation or attached to rights of use"*¹⁸³⁴.

A1.1019 Eircom noted that ComReg's proposed SoC obligation would be required to cover:

- (a) Pre-provisioning, provisioning and service assurance for MI WHQA products services and facilities in the Zone B MI WHQA Markets;
- (b) Product development including product enhancements, and pre product development screening of Access requests;
- (c) Product prioritisation and investment decisions;

¹⁸³² Eircom Submission, paragraph 130.

¹⁸³³ Eircom Submission, paragraph 131.

¹⁸³⁴ Eircom Submission, paragraph 120.

- (d) Access to shared resources including IT and product development resources;
- (e) The management of information, both Structured information and Unstructured information, in conformance with regulatory requirements;
- (f) The preparation and submission of bids in response to a commercial or government request for a proposal or tender; and
- (g) Other categories as reasonably required by ComReg¹⁸³⁵.

A1.1020 Eircom stated that ComReg has not highlighted any issue in the MI WHQA Markets that would justify ComReg's proposal.

A1.1021 Eircom stated that ComReg's proposals to expand the SoC beyond the form specified in ComReg D03/13 are an unreasonable burden and disproportionate. Hence, Eircom disagreed with ComReg's SoC proposal.

A1.1022 Eircom stated that the SoC process is front loaded, which increases the workload on the resources involved in product development. In Eircom's opinion, the creation of SoCs together with additional tasks and controls will delay/impede product development. Eircom noted that both retail and wholesale HQA markets are more competitive than 2008 which indicate that there is no major regulatory issue that needs to be addressed¹⁸³⁶.

A1.1023 Eircom stated that ComReg's proposed SoC obligation will be highly resource intensive due to a need to demonstrate compliance with all regulatory obligations as well as defining all the additional controls that ensure such compliance.

A1.1024 Eircom disagreed with ComReg's statement that "it should not be unduly burdensome on Eircom to provide the required SoC"¹⁸³⁷. In order to meet the obligations Eircom stated that it will have to employ additional resources to complete the additional auditing and publication obligations¹⁸³⁸.

¹⁸³⁵ Eircom Submission, paragraph 121.

¹⁸³⁶ Eircom Submission, paragraph 132.

¹⁸³⁷ Eircom Submission, paragraph 127.

¹⁸³⁸ Eircom Submission, paragraph 127.

SoC Signatory

A1.1025 Eircom stated that there are challenges regarding the availability of Directors to sign off the SoC on a timely basis, hence Eircom believes that the current SoC process is a better approach¹⁸³⁹.

SoC and risk assessment on investment decisions

A1.1026 Eircom noted that ComReg proposed that the SoC include an obligation on Eircom to undertake risk assessments on investment decisions. Eircom stated that the potential scope of what should be considered is not clear. Eircom stated that if it is a question of how Eircom allocates its capital resources, then Eircom believe ComReg is over-stepping its powers¹⁸⁴⁰.

A1.1027 Eircom noted that at present a SoC (in other markets) contains a comparison of the product development, pre-order/order, provisioning and service assurance process for wholesale customers versus downstream business. Eircom stated that the provision of information regarding the use of shared resources etc. is not something that is directly comparable¹⁸⁴¹.

SoC and Eircom RGM

A1.1028 Verizon stated that at the time of writing/Submission, they are waiting to see what the next steps will be in the RGM project¹⁸⁴².

A1.1029 Verizon stated while the SoC documents may seem reasonable, they must be considered alongside the serious compliance issues identified in the RGM project. For example, one of the recommendations from the two reports as part of the RGM project was for an independent compliance Board within Eircom. Verizon stated that if this recommendation were to be implemented, then there should be a role for such a Board in the sign-off process of the Statements of Compliance¹⁸⁴³.

¹⁸³⁹ Eircom Submission, paragraph 128.

¹⁸⁴⁰ Eircom Submission, paragraph 125.

¹⁸⁴¹ Eircom Submission, paragraph 126.

¹⁸⁴² Verizon Submission, paragraph 26.

¹⁸⁴³ Verizon Submission, paragraph 30.

A1.1030 Verizon noted there is a risk that, by trying to pre-empt the outcome of the RGM project through SMP conditions in discrete markets (such as MI WHQA), ComReg is creating a patchwork of inconsistent remedies that do not address the larger issues within Eircom's governance at all levels and all markets¹⁸⁴⁴.

A1.1031 Verizon stated it is concerned that there may be a softening or watering down of compliance documents in anticipation of the RGM project remedies¹⁸⁴⁵.

A1.1032 Vodafone stated that ComReg is relying on the SoC process to ensure compliance which in Vodafone's opinion is optimistic in terms of its effectiveness given the history of Eircom's RGM¹⁸⁴⁶.

SoC and Compliance

A1.1033 ALTO and BT stated that ComReg should provide granular details on how it intends to enforce, review and penalise compliance breaches for SoCs that are found to be inaccurate/incorrect^{1847 1848}.

ComReg's vires with respect to the imposition of the SoC obligation in the WHQA market

A1.1034 Eircom stated that "...expanding the SoC obligation beyond the form specified in D03/13..." is not something ComReg has the power to impose in the context of a market review of WHQA and it is not something that Eircom will agree to.

Other issues raised by Respondents

A1.1035 Vodafone stated that the cost of managing the proposed SoC model (over a period of years) might be avoided by an upfront investment in an IT solution to provide MI WHQA on an EoI basis¹⁸⁴⁹.

¹⁸⁴⁴ Verizon Submission, paragraph 31.

¹⁸⁴⁵ Verizon Submission, paragraph 32.

¹⁸⁴⁶ Vodafone Submission, page 11.

¹⁸⁴⁷ ALTO Submission, page 17.

¹⁸⁴⁸ BT Submission Part 1, page 15.

¹⁸⁴⁹ Vodafone Submission, page 11.

Statement of Compliance Obligations

ComReg's Assessment of Respondents' Views

A1.1036 ComReg notes that five Respondents (ALTO, BT, Eircom, Verizon and Vodafone) expressed a view on ComReg's SoC proposal.

A1.1037 ComReg notes that four Respondents (ALTO, BT, Verizon and Vodafone) broadly agreed with ComReg's proposal^{1850 1851 1852 1853}, while Eircom disagreed with ComReg's proposal requiring Eircom to provide a SoC to ComReg with respect to all of its regulatory obligations as imposed in the Zone B MI WHQA Markets¹⁸⁵⁴.

A1.1038 ComReg has grouped and assessed Respondents' Submissions and related issues using the following themes:

- (a) Transparency – Publication of the SoC (see paragraphs A1.1039 to A1.1055);
- (b) Potential impact on Eircom of the proposed SoC obligation (see paragraphs A1.1056 to A1.1063);
- (c) SoC Signatory (see paragraph A1.1062 to A1.1066);
- (d) SoC and risk assessment on investment decisions (see paragraphs A1.1067 to A1.1074);
- (e) SoC and Eircom RGM (see paragraphs A1.1075 to A1.1077);
- (f) SoC and Compliance (see paragraphs A1.1078 to A1.1080);
- (g) ComReg's vires with respect to the imposition of the SoC obligation in the WHQA market (see paragraph A1.1081); and
- (h) Other issues raised by Respondents (see paragraphs A1.1082 to A1.1083).

¹⁸⁵⁰ ALTO Submission, page 16.

¹⁸⁵¹ BT Submission Part 1, page 14-15.

¹⁸⁵² Verizon Submission, page 8.

¹⁸⁵³ Vodafone Submission, page 12.

¹⁸⁵⁴ Eircom Submission, paragraphs 102-111.

Transparency – Publication of the SoC

- A1.1039 ComReg notes that ALTO, BT and Verizon agreed that the SoC should be published. However, while ALTO and BT stated that ComReg should specify simplified SoCs and publish same in order to ensure greater visibility of Eircom's behaviour and encourage transparent dealings^{1855 1856}, Verizon had an opposing view. Verizon stated that simple "yes/no" statements of compliance is not appropriate and that there should be maximum transparency and granularity in the SoC¹⁸⁵⁷.
- A1.1040 ComReg's position is that its specification of the SoC (discussed in paragraphs 10.465 to 10.474 above) is appropriately balanced so that Access Seekers, on reviewing the published SoC, can gain a greater understanding of the extent to which Eircom is managing compliance with its regulatory obligations in the WHQA Market.
- A1.1041 ComReg notes that the requirement to publish the SoC as imposed on Eircom recognises the importance to and impact of good regulatory governance to the development of competition. The SoC is required to be published with a view to increasing OAOs confidence in Eircom's regulatory governance structure and processes. ComReg would also note that formally investigating Eircom's compliance with its regulatory obligations with a view to determining whether or not Eircom is non-compliant with an obligation, including with respect to the SoC obligation, is a matter exclusively for ComReg.
- A1.1042 ComReg does not agree with Eircom's views, expressed in paragraph above A1.1063 that publication of the SoC will result in commercially sensitive information being revealed. ComReg's position is that should Eircom have concerns that the publication of particular material in a SoC then Eircom can assert the confidentiality of such material providing reasons. All such assertions will be considered by ComReg. ComReg notes that the publication of any material should include a review as to its confidentiality. ComReg's approach to the treatment of confidential information is set out in its published Confidentiality Guidelines¹⁸⁵⁸.

¹⁸⁵⁵ ALTO Submission, page 16.

¹⁸⁵⁶ BT Submission Part 1, page 14-15.

¹⁸⁵⁷ Verizon Submission, paragraph 33.

¹⁸⁵⁸ Guidelines on the Treatment of Confidential Information, Response to Consultation, ComReg Document 05/24, March 2005 ('**Confidentiality Guidelines**').

- A1.1043 Similarly, with respect to Eircom's concern regarding the loss of competitive intellectual property advantage, if Eircom considers that publication of a SoC would reveal information which would result in it losing competitive advantage in an unregulated market then this would be considered under ComReg's Confidentiality Guidelines.
- A1.1044 ComReg notes, however, that only information relevant to Eircom's governance of its compliance with its regulatory obligations is required to be included in the SoC, such as information relating to the development and implementation of regulated services. Therefore, ComReg does not consider that the publication of a SoC will pose a risk to Eircom's networks or information systems or is likely to raise any intellectual property related issues.
- A1.1045 ComReg does not accept Eircom's claim that in the absence of a ComReg approval process the publication of the SoC will lead to Eircom being open to "*trial by industry*". OAOs are reliant on the availability of Eircom's RAP services in order to compete in downstream markets. The publication of the SoC potentially provides OAOs with an understanding of the extent of Eircom's internal governance arrangements with respect to the supply of RAP products and services, and this has the potential to be beneficial to competition.
- A1.1046 ComReg does not accept Eircom's claim that approval of the SoC by ComReg is either necessary or appropriate as the obligation requires Eircom to demonstrate how it remains in compliance with its regulatory obligations. The particular regulatory governance processes by which Eircom maintains compliance are a matter for Eircom. In this Decision, ComReg has not required Eircom to implement a specific form of regulatory governance hence the need for ComReg's approval does not arise.
- A1.1047 ComReg does not agree with Eircom that as KPIs provide evidence of equivalence, the publication of Statements of Compliance amounts to over-regulation. Access Seekers have raised concerns regarding Eircom's compliance with its regulatory obligations more generally, notwithstanding the fact KPIs relating to the MI WHQA Markets are published by Eircom. It should be noted that the KPIs published only cover a sub-set of the SMP obligations relating to provision and repair activities.
- A1.1048 The effect of such concerns is to erode Access Seekers' confidence in the provision of MI WHQA services and their consequential ability to compete in downstream markets, particularly having regard to Eircom's compliance with its SMP obligations.

- A1.1049 Such concerns can significantly limit the development of competition as Access Seekers' uptake of MI WHQA products or services¹⁸⁵⁹ in the Zone B MI WHQA Markets may be negatively impacted if they consider that Eircom's governance of its compliance with its regulatory obligations is ineffective.
- A1.1050 ComReg considers that the SoC and KPIs have two different but complementary functions. Published KPIs provide Access Seekers with assurance regarding the comparative performance of Eircom's supply to its downstream business when compared with the performance of the same products and services provided by Eircom to Access Seekers. The SoC provides Access Seekers with a broad range of information relating to Eircom's governance and oversight of its compliance with all of its regulatory obligations.
- A1.1051 ComReg's position is that appropriate transparency relating to the extent and nature of Eircom's regulatory governance in areas such as the development of regulated products, for example, in addition to the comparative performance of regulated products post launch, is necessary in order to ensure that Access Seekers can plan to operate commercially with confidence.
- A1.1052 ComReg's position is that confirmation via the SoC that the development and supply of regulated products takes place in a non-discriminatory and transparent way supports innovation and fosters competition. It is important, therefore, that it is clear to Access Seekers that Eircom is appropriately managing regulatory risk with respect to, inter alia, the development and supply of regulated products and services.
- A1.1053 ComReg does not agree that the publication of the SoC is over regulation. The complexities associated with the operation of a fixed telecom's incumbent are such that the implementation and operation by Eircom of an effective and robust internal regulatory governance structure is essential if Eircom is to comply with its regulatory obligations. Should Eircom not comply with its regulatory obligations then these obligations are rendered ineffective.
- A1.1054 The imposition of proportionate and potentially effective regulatory obligations by ComReg, after a review process, is important for the development of competition. However Access Seekers primarily depend on the successful implementation of those obligations by Eircom.

¹⁸⁵⁹ Including Related MI WHQA Elements.

A1.1055 It is ComReg's position that the publication of a SoC helps to remove uncertainty and potentially alleviate Access Seekers' concerns regarding Eircom's compliance with its regulatory obligations by allowing Access Seekers to observe how Eircom maintains compliance with its regulatory obligations. Understanding, and having confidence in, how Eircom complies with its regulatory obligations contributes significantly to Access Seekers confidence and willingness to invest and compete in the WHQA Market.

Potential impact on Eircom of the proposed SoC obligation.

A1.1056 ComReg does not agree with Eircom's view that the SoC obligations proposed in the 2018 Further Consultation are inconsistent with recital 28 of the Authorisation Directive¹⁸⁶⁰. For the reasons explained in paragraphs A1.1057 to A1.1061 below, ComReg considers that the proposed SoC obligations are proportionate, objectively justified and limited to what is necessary. For the avoidance of doubt, ComReg notes that the statement in Recital 28 of the Authorisation Directive regarding requirements for "systematic and regular proof of compliance" relates to the general authorisation for the provision of an electronic communications network/electronic communications service under the Authorisation Directive and to rights of use for radio frequencies/numbers under the Authorisation Directive. It is not applicable in the separate context of the imposition of SMP obligations under the Access Directive and Access Regulations, which is the background to this Decision.

A1.1057 ComReg expects that Eircom would be able to ensure compliance with its regulatory obligations as they pertain to a particular MI WHQA product or service¹⁸⁶¹ in the Zone B MI WHQA Markets, at the point that the product is made available to Access Seekers. Therefore, ComReg considers that it is not unreasonable for Eircom to be able to demonstrate to ComReg how it will remain in compliance with its regulatory obligations post the launch of a new or amended MI WHQA product or service¹⁸⁶² in the Zone B MI WHQA Markets when it provides notification to ComReg.

¹⁸⁶⁰ Directive 2002/20/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, as amended by Directive 2009/140/EC (the "Authorisation Directive").

¹⁸⁶¹ Including Related MI WHQA Elements.

¹⁸⁶² Including Related MI WHQA Elements.

- A1.1058 ComReg does not agree that the work required to be carried out by Eircom in order for the SoC to be provided to ComReg prior to notification of a new, or amended, product or service to ComReg will greatly impede product development and stifle innovation. ComReg considers that it is necessary during the product development process that Eircom considers potential risks of non-compliance which may arise after the new or amended product is developed and launched.
- A1.1059 Therefore at the appropriate point during the development of the product Eircom should carry out a risk analysis of, inter alia, the product processes and systems in order to determine where risks of non-compliance may arise and consider the controls that could be put in place post launch in order to mitigate the risks identified.
- A1.1060 ComReg's position is that it is essential that new or amended regulated wholesale products are fully compliant with Eircom's regulatory obligations. It is reasonable, therefore, that MI WHQA products and services¹⁸⁶³ in the Zone B MI WHQA Markets would be developed by Eircom in a manner that is compliant with its regulatory obligations.
- A1.1061 ComReg's position is that a risk analysis, and the associated development of controls, would need to be conducted by Eircom during the product development process in order to ensure Eircom remains in compliance with its regulatory obligations when new or amended regulated wholesale products are launched and thereafter. Therefore, the additional step of preparing a SoC during the product development process is reasonable and not over burdensome.

SoC Signatory

- A1.1062 ComReg considers that assurances regarding the processes Eircom has in place to ensure compliance with its regulatory obligations are beneficial to competition. Access Seekers are likely to have greater confidence that they can compete with Eircom without the potential competitive disadvantages that arise from Eircom's non-compliance.
- A1.1063 Therefore ComReg considers that the signatory needs to be a person within Eircom who is sufficiently independent from day to day operational activity and decision making in relation to the development and supply of wholesale regulated products and services, in order to be able to objectively assess the structures and processes Eircom has put in place in order for it to remain in compliance with its regulatory obligations.

¹⁸⁶³ Including Related MI WHQA Elements.

- A1.1064 The proposed SoC obligation requires the signatory to be a member or members of the Board of Directors which provides Eircom with greater regulatory certainty. ComReg notes that under the Companies Act 2014 Company Directors have specific obligations with which they must comply relating to securing compliance with relevant obligations, defined in the Companies Act 2014,
- A1.1065 While the obligations referred to in the Companies Act 2014 do not include regulatory obligations, ComReg considers that it is relevant and instructive that the Companies Act 2014 requires Directors to prepare a compliance statement. This compliance statement confirms, *inter alia*, that, in the Directors' opinion, arrangements are designed and put in place that secure material compliance with the company's relevant obligations.
- A1.1066 ComReg also considers that the signatory should hold a position of appropriate authority and responsibility within Eircom, such that Eircom can provide assurances to ComReg that regulatory governance and, in particular, the SoC obligations, is afforded the necessary oversight and attention by Eircom. ComReg also considers that a SoC signatory of appropriate authority will improve the credibility of the SoC when published and made available to Access Seekers.

[SoC and risk assessment on investment decisions](#)

- A1.1067 ComReg notes that Eircom is not clear on the scope of what should be considered when Undertaking risk assessments on investment decisions (discussed in paragraph A1.1026).
- A1.1068 For the avoidance of doubt, the proposed SoC obligation makes reference to "investment decisions" exclusively and solely in the context of investment decisions which potentially impact on Eircom's compliance with its regulatory obligations in the WHQA Market. ComReg notes that Eircom has obligations with respect to meeting reasonable requests for Access and there are conditions attached to the Access obligations with respect to reasonableness, fairness and timeliness.
- A1.1069 In order to compete in downstream markets, Access Seekers rely on the availability of fit-for-purpose regulated access products and services. Access Seekers also rely on Eircom's obligation to meet reasonable access requests for new and amended regulated access products and services in a timely manner.

- A1.1070 In order to develop and evolve regulated access products and services, Eircom needs to ensure that it will invest in staff with the required skillsets and appropriate levels of expertise and that the systems and technology which support regulated access products and services are maintained and/or upgraded as required in order to ensure that RAP products and services are provided to the required standard.
- A1.1071 Therefore, ComReg considers that Eircom needs on-going investment in, inter alia, systems and expertise, to ensure the timely development and delivery of fit-for-purpose regulated access products and services. It is essential that such products and services are provided by Eircom to a standard that allows Access Seekers to compete effectively using RAP products and services as inputs in order to be able to offer competitive services to End Users in downstream market, for example.
- A1.1072 Some investment decisions may be relevant to Eircom's capacity to develop fit for purpose RAP products and services in a timely manner including RAP developments which arise, for example, from a reasonable Access request by an OAO. ComReg considers that the processes employed in order to make RAP related investment decisions, and other investment decisions that have direct relevance to Eircom's compliance with its regulatory obligations, should be subject to a risk analysis as part of Eircom's governance of its compliance with its regulatory obligations in the WHQA Market.
- A1.1073 For example, Eircom has an obligation not to discriminate. Risks of non-compliance with this obligation, and Eircom's other obligations, should be considered when Eircom prepares investment plans such as upgrades to systems or plans for additional resources for the development of RAP services.
- A1.1074 ComReg's position is that transparency for Access Seekers on the process by which Eircom governs the management of risks of non-compliance with its regulatory obligations arising from investment decisions is necessary. Such transparency will increase certainty for Access Seekers regarding the delivery and performance of products and services. In particular, further transparency will help create confidence, thereby encouraging competition and investment by Access Seekers.

[SoC and Eircom RGM](#)

- A1.1075 ComReg notes Verizon's comments (paragraphs A1.1028 to A1.1031 above) concerning Eircom RGM. An update on the Eircom RGM is included in Annex A.1.10.6.
- A1.1076 ComReg was not prejudging the review of Eircom's RGM. The SoC obligation is independent of the review of Eircom's RGM.

A1.1077 ComReg considers that the signatory needs to be a person within Eircom who is sufficiently independent from day to day operational activity and decision making in relation to the development and supply of wholesale regulated products and services, in order to be able to objectively assess Eircom's compliance with its regulatory obligations.

SoC and Compliance

A1.1078 ComReg does not agree with ALTO's and BT's views that ComReg should provide granular details on how it intends to enforce, review and penalise compliance breaches and SoCs that are found to be inaccurate/incorrect¹⁸⁶⁴
¹⁸⁶⁵.

A1.1079 The ComReg compliance team receives complaints from within the industry and monitor trends in complaints from the general public made via ComReg's consumer team and ComReg's website. It is the compliance team's function to investigate these complaints and trends, and make an assessment to determine their validity, and level of impact on the market. In addition, the ComReg compliance team undertakes own initiative investigations to monitor the general conformance to obligations falling within ComReg's remit, including compliance breaches related to inaccurate/incorrect SoCs.

A1.1080 Where appropriate, the outcome of these compliance investigations will be published in the list of ComReg's enforcement actions.

ComReg's vires with respect to the imposition of the SoC obligation in the WHQA market

A1.1081 ComReg does not agree with Eircom that it does not have the power to impose this obligation under the current regulatory framework, or in the context of a market review of the WHQA Market. For the avoidance of doubt ComReg has the vires to impose the SoC obligation pursuant to Regulation 9, 10, 11, 12 and 13 of the Access Regulations.

Other issues raised by Respondents

A1.1082 ComReg does not agree with Vodafone's view that the cost of managing the proposed SoC model (over a period of years) might be avoided by an upfront investment in an IT solution to provide MI WHQA on an Eol basis¹⁸⁶⁶.

¹⁸⁶⁴ ALTO Submission, page 17.

¹⁸⁶⁵ BT Submission Part 1, page 15.

¹⁸⁶⁶ Vodafone Submission, page 11.

A1.1083 ComReg has assessed that it is not reasonable or proportionate to require Eircom to provide Access to MI WHQA products and services¹⁸⁶⁷ on an EoI basis (discussed in paragraph A1.858 to A1.866 above).

¹⁸⁶⁷ Including Related MI WHQA Elements.

A.1.10.6 Summary and Assessment of Respondents' Views on Eircom's Regulatory Governance Model

A1.1084 ComReg notes that since December 2013 Eircom voluntarily implemented a RGM for the governance and oversight of its compliance with its regulatory obligations. In December 2018 ComReg reached a Settlement Agreement¹⁸⁶⁸ with Eircom, in respect of certain compliance litigation which was before the High Court. Under the agreement between ComReg and Eircom, Eircom agreed a set of commitments which will result in the establishment and operation of an enhanced Regulatory Governance Model (RGM) in Eircom.

A1.1085 The RGM relies on Eircom's expertise and knowledge of its processes, systems and procedures to identify, manage and control the risks of non-compliance with its regulatory obligations. Previously Eircom used its voluntary RGM to develop and provide SoC to ComReg in markets where it had an obligation to do so. Eircom has also provided SoC voluntarily to ComReg in a number of other regulated markets¹⁸⁶⁹.

A1.1086 In order to meet its SoC obligation in the WCA / WLA Market Eircom¹⁸⁷⁰ has continued to use its RGM for governance and oversight of Eircom's other obligations in addition to its non-discrimination obligations, in particular, in relation to its transparency and pricing obligations.

A1.1087 Eircom has published the WLA / WCA Statement of Compliance¹⁸⁷¹ and in the Executive Summary of the published document Eircom state that the document:

¹⁸⁶⁸ Reference Information Note: Wholesale Compliance Litigation Update - Outcome of Cases 481 and 568 and related litigation. Dated 10th December 2018, ComReg Document number 18/110.

¹⁸⁶⁹ Including the current Leased Line Market.

¹⁸⁷⁰ Reference Section 13 of ComReg Document No. 18/94, ComReg Decision D10/18: Market Reviews: Wholesale Local Access and Wholesale Central Access, published 19 November 2018 ("ComReg Decision D10/18"). Available at: <https://www.comreg.ie/publication/3a-3b-market-analysis-decision/>

¹⁸⁷¹ Eircom's WLA / WCA Statement of Compliance is available on the open eir website at the following link: https://www.openeir.ie/Regulatory_Information/Regulatory_Policy_Statements/

“.....sets out the governance structure in place in eir to ensure compliance with all regulatory obligations and also outlines the underlying processes that are key to maintaining compliance with our obligations. Section Two-Methodology for the Provision of a Statement of Compliance: this Section outlines the standard process within eir to complete a business process compliance review and in particular the process and areas involved in the review the (sic) complete this Statement of Compliance.

A1.1088 Eircom have also stated to ComReg that it intends using its RGM structure, in particular staff operating in Eir’s Second Line of Defence (2LoD)¹⁸⁷², to prepare the SoC. Therefore ComReg considers that the structures are currently in place through the implementation of the Settlement Agreement in order to develop the SoC with respect to the Zone B MI WHQA Markets.

A1.1089 Furthermore, a key element of the RGM implemented by Eircom¹⁸⁷³ is the analysis, development, management and documentation of the risk and control framework. This includes the production of data and information some of which could be readily used when preparing a SoC. A significant portion of the information required for the SoC generated as part of the risk assessment processes is executed as part of the implementation of Eircom’s RGM.

A1.1090 The Settlement Agreement has resulted in Eircom committing to implement an enhanced RGM which has the potential to significantly improve Eircom’s governance of its compliance with its regulatory obligations. Notwithstanding this and for the avoidance of doubt ComReg will continue monitor Eircom’s compliance with its regulatory obligations including initiating investigations and opening compliance cases when it is appropriate to do so.

¹⁸⁷² Section 1 Section 5 of Eircom’s WLA / WCA SoC. The Second Line of Defence is part of Eircom’s RGM.

¹⁸⁷³ The Settlement Agreement required Eircom to implement the Undertakings (Annex 1 to the Settlement Agreement) which includes the implementation of a RGM by 30 June 2019.

A.1.11 Summary and Assessment of Respondents' Views on the Withdrawal of Obligations in the LB TI WHQA Market, HB TI WHQA Market and the Zone A MI WHQA Market

A1.1091 In Section 10 of the 2018 Further Consultation (and now Section 11 of this Decision) ComReg provided a summary of Respondents' views in response to the 2016 Consultation as well as ComReg's assessment of them.

A1.1092 In Question 9¹⁸⁷⁴ of the 2018 Further Consultation ComReg sought any further observations on the proposed approach to the withdrawal of obligations.

A1.1093 Of the Seven Submissions received, 5 Respondents (ALTO, BT, Eircom, enet and Vodafone) commented on ComReg's proposed approach in the 2018 Further Consultation to the withdrawal of obligations.

A1.1094 One Respondent (Vodafone), agreed with ComReg's preliminary views, while four Respondents (ALTO, BT, Eircom, and enet) disagreed with some or all aspects of ComReg's views.

A1.1095 Of the five Respondents who commented, two (ALTO and BT) provided detailed comments which are summarised below.

A1.1096 In a number of cases Respondents repeated views relating to issues which had been the subject of their responses on matters set out and discussed in earlier parts of this Decision (and have been addressed above).

A1.1097 ComReg summarises Respondents' views in Section A.1.11.1 below, before then going on to assess them in Section A.1.11.2.

A.1.11.1 Respondents' Views on the Withdrawal of Obligations

A1.1098 Respondents' views are summarised below.

¹⁸⁷⁴ Question 9 on page 408 of the 2018 Further Consultation asked "Do you agree with ComReg's approach on the withdrawal of all existing obligations in the HB TI WHQA Market and the Zone A MI WHQA Markets and withdrawal of the obligation to provide WLLs in the LB TI WHQA market?"

Preceding consultations provided adequate notice of withdrawal

A1.1099 Eircom disagreed that there should be any sunset period in any of the markets in which regulatory obligations were being withdrawn. Eircom argued that the publication of ComReg's preliminary views in the 2016 Consultation and 2018 Further Consultation has given alternative operators enough time to prepare for the changes in regulation. Eircom also commented on the length of time being taken by ComReg to complete its review of the WHQA markets.

Access to certain LB TI WHQA products should be maintained

A1.1100 ALTO and BT both agreed with ComReg's proposals for the withdrawal of obligations for Analogue LL.

A1.1101 Both Respondents commented on the proposed withdrawal of certain access obligations that have to date required Eircom to provide LB TI WHQA products such as Digital and Channelised E1 (2MB) Access LLs. They considered that ComReg should not withdraw such obligations and suggested that as ComReg has not sought data from SPs on these products, it was misinformed about them.

A longer Sunset period is required for the withdrawal of obligations in the HB TI WHQA Market

A1.1102 Two Respondents (ALTO and BT) commented on and disagreed with ComReg's proposal to withdraw obligations in the HB TI WHQA Market.

A1.1103 Both BT and ALTO argued that the 'Sunset Period', in which previous regulation remains in place for a limited period following de-regulation, should be extended to 2 years. Both Respondents considered this time was needed in order to ensure that existing contracts could expire and be renegotiated. This would mitigate the risk that customers could walk away from existing contracts without penalty due to a change in the deal.

A1.1104 ALTO also indicated that the withdrawal of obligations should be incremental and linked "to the deployment with volume of proven fit for purpose duct and pole services."

A1.1105 BT pointed to its previous comments where it considered that the HB TI WHQA Market should be split, from a geographic perspective into a "Zone A de-regulated area" and Zone B regulated area. In this context it stated a "no new supply" provision within the BT proposed Zone A area was acceptable.

A longer Sunset period is required for the withdrawal of obligations in the Zone A MI WHQA Market

A1.1106 2 Respondents (ALTO and BT) commented on the proposed withdrawal of obligations from the Zone A MI WHQA Market, with both such Respondents disagreeing with ComReg's proposals.

A1.1107 ALTO and BT re-iterated their views on the HB TI WHQA Market, including that a 2 year sunset period was required.

A.1.11.2 ComReg's Assessment of Respondents' Views on the Withdrawal of Obligations

Preceding consultations provided adequate notice of withdrawal

A1.1108 ComReg does not agree with Eircom's view that the preceding consultations should serve as adequate notice for the commencement of the notice period for the withdrawal of obligations as ComReg clearly has not yet made decision on its analysis of the Relevant WHQA Markets. To suggest otherwise would effectively mean that ComReg pre-determines outcomes at consultation stage without the need to give due regard to Respondents' views.

A1.1109 ComReg acknowledges the delays in conducting the market analysis, however, some such delays have been unavoidably associated with the provision of poor data by SPs (ultimately leading to the publication of the revised 2018 Further Consultation) as well as historic resourcing constraints. ComReg will endeavour to complete its market analyses within the appropriate timelines.

Access to certain LB TI WHQA products should be maintained

A1.1110 ComReg notes BT and ALTO's agreement with ComReg's proposals for the withdrawal of obligations for Analogue LL.

A1.1111 ComReg disagrees that its proposals for the removal of obligations relating to access to Digital and Channelised E1 LLs were misinformed. ComReg notes that it did, in fact, ask for data on Digital and Channelised E1 (2MB) Access Leased Lines products, with this being factored into its analysis.

A1.1112 Both ALTO and BT appear to have misinterpreted ComReg's proposal regarding the removal of Channelised E1 LL service. For clarity, this service presents circuits of bandwidths N x 64Kb/s at various customer premises¹⁸⁷⁵ and aggregates these on a 2Mb/s 'bearer' presented to the SP. Both Respondents appear to have conflated this LL service with that of Primary and Fractional Rate ISDN¹⁸⁷⁶ WLR (Wholesale Lines Rental) voice services.

A1.1113 The volume of E1 Channelised LLs in service at the end of 2018 was extremely low (less than 10). ComReg has validated the data it has gathered and compared supplier and purchaser data. Voice services have not been included in any count of LL circuits and any voice circuit data which was inadvertently provided by SPs, such as voice interconnection and ISDN were excluded. ComReg is fully confident that its calculations of the volumes of LL circuits, and particularly E1 Channelised circuits is accurate.

A longer Sunset period is required for the withdrawal of obligations in the HB TI WHQA Market

A1.1114 ComReg notes that once it considers that no SP has SMP in the HB TI WHQA Market it is required to ultimately remove regulation. ComReg must strike a balance between this requirement and the need to ensure a smooth transition to deregulation that does not result in undue disruption for SPs, and ultimately consumers. In the specific circumstances of this market, ComReg considers that a six month sunset period achieves this aim, and extending regulation to 2 years as suggested by ALTO and BT above would not be justified or proportionate and would be tantamount to continuing regulation.

A1.1115 A six month sunset period is a sufficient and reasonable period for the withdrawal of obligations in the HB TI WHQA Market, in particular, having regard to the extremely low number¹⁸⁷⁷ of such LLs supplied by Eircom to other SPs. This time period should afford SPs a reasonable period within which to manage any associated product changes/withdrawal with End Users, including the possibility of changing to alternative sources of supply, where available (ComReg notes that Eircom may, of course, continue, on a commercial basis, to provide HB TI WHQA services once the obligation has been withdrawn).

¹⁸⁷⁵ Such circuits are presented on X.21 or V.35 interfaces at the customer premises. These are International Telecommunication Union defined technical specifications.

¹⁸⁷⁶ Integrated Services Digital Network.

¹⁸⁷⁷ There were less than 100 retail HB TI LLs at the end of 2018.

- A1.1116 During the above six month sunset period, Eircom will not be required to provide access to new orders for HB TI WHQA LLs to Access Seekers (although it is free to do so on a commercial basis). It is to be required to maintain existing access at existing prices during this sunset period. Eircom is also not required to meet other obligations (for example, in relation to transparency, non-discrimination, margin squeeze etc.).
- A1.1117 ComReg notes ALTO's concerns on Duct and Pole access, but remains of the view that a sunset period of six months strikes an appropriate balance between the withdrawal of obligations and a smooth transition to a new regulatory environment. ComReg also notes that given the extremely low number of retail HB TI LLs, that the use of duct and pole access to potentially provide such services would not likely be economic to do so.
- A1.1118 With respect to BTs comments regarding a separate geographic markets ComReg in Section 5 ComReg has set out its reasoning as to why the HB TI WHQA Market is national in its geographic scope.

A longer Sunset period is required for the withdrawal of obligations in the Zone B MI WHQA Market

- A1.1119 With respect to ALTO's and BT's views on the withdrawal of obligations in the Zone A MI WHQA Market, ComReg refers to its reply to Respondents' views on the HB TI WHQA market above. A 12 month sunset period is considered by ComReg to be sufficient to afford SPs a reasonable period within which to manage any associated product changes/withdrawal with End Users, including the possibility of changing to alternative sources of supply, where available (ComReg notes that Eircom may, of course, continue to provide MII WHQA LL services once the obligation has been withdrawn).

A.1.11.3 ComReg's Position on the Withdrawal of Obligations from the Relevant WHQA Markets

- A1.1120 In Section 11 of this Decision, ComReg has set out its position on of certain obligations in the LB TI WHQA Markets (which continues to be regulated), as well as in the HB TI WHQA Market and Zone A MI WHQA Markets which are being de-regulated on foot of this Decision.
- A1.1121 Having considered Respondents' views to the 2018 Further Consultation (and the 2016 Consultation, as appropriate) ComReg's position is that the following sunset periods should apply.

- (a) **HB TI WHQA Market:** A sunset period of six months is appropriate. During this sunset period, Eircom will not be required to provide access to new orders for HB TI WHQA LLs (although it is free to do so on a commercial basis).
- (b) **LB TI WHQA Market:** A sunset period of six months is appropriate for certain of those obligations being withdrawn. During this sunset period, Eircom is not be required to provide access to new orders for WLLs (although it is free to do so on a commercial basis), namely:
 - (i) Analogue Leased Lines;
 - (ii) Digital Leased Lines; and
 - (iii) Channelised E1 (2MB) Access.
- (c) **Zone A MI WHQA Markets:** A sunset period of twelve months is appropriate. During the first three months of this sunset period, Eircom is required to provide access to new orders for MI WHQA LLs.

A1.1122 In all cases above, Eircom is required to maintain access at existing prices during the relevant sunset periods. Eircom is also not required, from the effective date of this decision, to meet other obligations (for example, in relation to transparency, non-discrimination, margin squeeze etc.).

A.1.12 Summary and Assessment of Respondents' Views on Regulatory Impact Assessment

A.1.12.1 Overview

A1.1123 In Section 11 of the 2018 Further Consultation (and now in Section 12 of this Decision) ComReg set out its proposed Regulatory Impact Assessment ('**RIA**'). In doing so ComReg summarised 2016 Respondents' views to the 2016 Consultation, assessed those views and outlined an updated preliminary position on its RIA of its approach to the regulation of the Relevant WHQA Markets. This included¹⁸⁷⁸:

- (a) An introduction to the RIA and an outline of ComReg's approach to the assessment;
- (b) A summary of the preliminary views on the RIA as set out in Section 10 of the 2016 Consultation;
- (c) A summary of 2016 Respondents views to the 2016 Consultation;

¹⁸⁷⁸ See Sections 11.1to 11.6 of the 2018 Further Consultation.

- (d) ComReg's Assessment of Respondents' views on Section 10 of the 2016 Consultation;
- (e) RIA for the Zone A MI WHQA Markets and of the Zone B MI WHQA Markets.
- (f) ComReg's overall preliminary conclusion on the RIA for the Relevant WHQA Markets.

A1.1124 Question 10¹⁸⁷⁹ of the 2018 Further Consultation sought any further observations on the RIA.

A1.1125 Of the seven Submissions received, 4 Respondents (ALTO, BT, Eircom, and enet) commented on the RIA in the 2018 Further Consultation. ComReg has summarised Respondents' views below.

A1.1126 In commenting on the RIA, in most cases Respondents repeated views relating to issues which had been the subject of their responses on matters set out and discussed in earlier parts of this Decision (and have been addressed above). For example, views were repeated on issues including market definition and the imposition/withdrawal of remedies.

A1.1127 This Section is discusses:

- (a) Respondents' views on the RIA for the LB TI WHQA Market and ComReg's assessment of them (discussed in Section A.1.12.2 below);
- (b) Respondents' views on the RIA for the HB TI WHQA Market and ComReg's assessment of them (discussed Section A.1.12.3 below);
- (c) Respondents' views on the RIA for the Zone A MI WHQA Markets and ComReg's assessment of them (discussed in Section A.1.12.4below);
- (d) Respondents' views on the RIA for the Zone B MI WHQA Markets and ComReg's assessment of them (discussed in Section A.1.12.5 below);
- (e) Respondents' views on ComReg's Preliminary Conclusions on the RIA for the Relevant WHQA Markets and ComReg's assessment of them (discussed in Section A.1.12.6 below); and
- (f) ComReg's overall conclusions on the RIA for the Relevant WHQA Markets (discussed in Section A.1.12.7 below).

¹⁸⁷⁹ Question 10 on page 439 of the 2018 Further Consultation asked "Do you agree with ComReg's preliminary conclusions on the Regulatory Impact Assessment for the MI WHQA Markets?"

A.1.12.2 RIA for the LB TI WHQA Market

Respondents' Views on the RIA for the LB TI WHQA Market

A1.1128 1 Respondent (ALTO) agreed with ComReg's assessment. ALTO also asked that regulatory obligations be "fit for purpose" and made reference to various ComReg Regulatory Governance Model ('RGM') reviews that were discussed in the context of the imposition of regulatory obligations. No other Respondent commented on the RIA for the LB TI WHQA Market.

ComReg's Assessment of Respondents' Views on the RIA for the LB TI WHQA Market

A1.1129 ComReg notes ALTO's agreement with the RIA for the LB TI WHQA Market. ALTO's concerns with respect to the RGM and associated obligations are considered in Section 8.

A1.1130 Regarding ALTO's and BT's concerns with RGM disclosures, Annex A.1.10.6 details the Settlement Agreement agreed by ComReg and Eircom in December 2018. This agreement, which was informed by ComReg's concerns regarding Eircom's RGM, requires Eircom to implement an enhanced RGM and also facilitates the establishment of an Independent Oversight Body ('IOB') to provide robust oversight of Eircom's governance. Notwithstanding the Settlement Agreement, which ComReg considers has the potential to significantly improve Eircom's regulatory governance, ComReg will continue to monitor Eircom's compliance with its regulatory obligations, including obligations relating to non-discrimination.

A.1.12.3 RIA for the HB TI WHQA Market

Respondents' Views on the RIA for the HB TI WHQA Market

A1.1131 2 Respondents (ALTO and BT) disagreed with ComReg's RIA for this market. No other Respondent provided any comments.

A1.1132 ALTO and BT submitted that ComReg appears to have failed to analyse the market in the light of the geographic changes to the MI WHQA Markets. They noted the potential of the HB TI Market to circumvent regulation in the Zone B MI WHQA Markets. They stated that ComReg had not considered the nature of multi-site contracts which take a minimum of six months to negotiate and require considerable investment from the SP. ALTO also contended that the sunset period of 3 months could potentially allow customers to walk away from their contracts without penalty in line with users' rights.

A1.1133 BT also had concerns about the risk to operators of contracts being re-opened “mid-term”.

A1.1134 As well as this, BT considered that the TI WHQA Market should be split geographically in the same way as the MI WHQA Markets had been split. BT said this would prevent Eircom from “gaming” the remedies by offering HB TI products instead of MI products in areas designated Zone B.

ComReg’s Assessment of Respondents’ Views on the RIA for the HB TI WHQA Market

A1.1135 ComReg notes ALTO’s and BT’s comments above.

A1.1136 Having regard to the analysis in Sections 5 and 6 of this Decision, ComReg considers that it has defined the HB TI WHQA Market and assessed competition within it appropriately.

A1.1137 With respect to the duration of the sunset period for the withdrawal of obligations in the HB TI WHQA Market, ComReg responded to this issue in Section 11 of this Decision. There are less than 100 HB TI WHQA LLs in existence, and having assessed existing competition and potential competition no SP has been identified as having SMP. ComReg is therefore obliged to remove regulatory obligations that have been imposed to date. ComReg has also provided for a sunset period of six months.

A1.1138 Given the overall size of this market, ComReg does not consider it one which is worth monopolising (or indeed “gaming”). Similarly, any customer disruption in such a small market should be minimal.

A.1.12.4 RIA for the Zone A MI WHQA Markets

Respondents’ Views on the RIA for the Zone A MI WHQA Market

A1.1139 2 Respondents (ALTO and enet) disagreed with the withdrawal of regulation in this market. No other SPs commented on the RIA for this market.

A1.1140 ALTO said that the deregulation of this market should be linked to the availability from Eircom of a fit for purpose passive infrastructure access product offering by Eircom. This comment refers to the effectiveness of Eircom’s duct and pole offering.

A1.1141 enet considered that ComReg did not properly account for the consumer harm which would arise from deregulation of Zone A MI WHQA Markets.

ComReg's Assessment of Respondents' Views on the RIA for the Zone A MI WHQA Market

- A1.1142 ComReg did not conduct a detailed RIA for this market in the 2018 Further Consultation as no Undertaking had been identified as having SMP in that market, ComReg's regulatory options in the Zone A MI WHQA Markets were limited to the timing of the withdrawal of existing regulation. As noted in Section 11 of this Decision, ComReg has decided that a 12 month sunset period for the withdrawal of such obligations is appropriate, with Eircom also required to continue to provide services for the first three months of this period..
- A1.1143 This will, amongst other things, allow Access Seekers sufficient time to seek alternative forms of supply in the Zone A MI WHQA Markets, if required, and thereby preserve continuity in the supply of retail/wholesale services (were Eircom to withdraw, or significantly alter, its terms and conditions of supply in the Zone A MI WHQA Markets following deregulation). To ultimately ensure the protection of consumer interests, ComReg also intends to continue to monitor the effectiveness of competition within the Zone A MI WHQA Markets, notwithstanding the removal of regulation. In this respect, ComReg reserves its right to re-examine competitive conditions within the Zone A MI WHQA Markets and, if appropriate, to intervene accordingly.
- A1.1144 Given regulatory obligations cannot be imposed in the now defined Zone A MI WHQA Markets (aside from the limited obligations regarding the sunset period), this RIA does not further consider regulatory options with respect to such markets.

A.1.12.5 RIA for the Zone B MI WHQA Markets

Respondents' Views on the RIA for the Zone B MI WHQA Market

A1.1145 ALTO and BT considered that ComReg was incorrect to consider a non-discrimination standard of Equivalence of Outputs¹⁸⁸⁰ ('**EOO**') to be applicable to the Zone B MI WHQA Markets. Both considered that Equivalence of Inputs ('**EOI**')¹⁸⁸¹ would be more applicable to the market.

A1.1146 BT also said that the non-discrimination remedy which would be placed on Eircom in this market had been revealed to have weaknesses by the RGM work.

ComReg's Assessment of Respondents' Views on the RIA for the Zone B MI WHQA Market

A1.1147 ComReg disagrees that an EOI standard would be more suitable in this market. The reasons for this are set out in Sections 7.1¹⁸⁸² and 10¹⁸⁸³ of this Decision. In summary, ComReg's position is that adopting an EOI standard would not be proportionate. In particular, the OSS and wholesale interfaces that are in place and used for the provision of Eircom's suite of existing MI WHQA products, services and associated facilities in the Zone B MI WHQA Markets have already been developed. These OSS and wholesale interfaces would likely require substantial investment in order to upgrade or replace them to meet an EOI standard. This would not be justifiable or proportionate in the circumstances of the Zone B MI WHQA Markets as it would likely involve costly systems re-development, the incremental benefits of which would not likely be substantial.

¹⁸⁸⁰ Equivalence of Outputs ('**EoO**') essentially refers to provision of products, services, facilities, and information by an SMP Undertaking to Access Seekers such that such products, services, facilities, and information is provided to Access Seekers in a manner which achieves the same standards in terms of functionality, price, terms and conditions, service and quality levels as the SMP Undertaking provides to itself, albeit potentially using different systems and processes.

¹⁸⁸¹ Equivalence of Inputs ('**Eoi**') essentially refers to provision of products, services, facilities, and information by an SMP Undertaking to Access Seekers such that such products, services, facilities, and information is provided to Access Seekers in a manner which achieves the same standards in terms of functionality, price, terms and conditions, service and quality levels as the SMP Undertaking provides to itself, and using the same systems and processes.

¹⁸⁸² See paragraphs 8.133 to 8.135 of this Decision.

¹⁸⁸³ See paragraphs 10.254 to 10.257 of this Decision.

A.1.12.6 Conclusions on the RIA for the Relevant WHQA Markets

Respondents' Views on ComReg's Preliminary Conclusions on the RIA for the Relevant WHQA Markets

A1.1148 1 Respondent (Eircom) disagreed with ComReg's overall preliminary conclusion to the RIA as set out in the 2018 Further Consultation, and made a number of comments in support of its view. No other Respondent commented on ComReg's preliminary conclusions.

A1.1149 Eircom raised a number of issues as outlined below.

Use of Small Areas ('SAs') for Market Assessment

A1.1150 Eircom did not think that ComReg had addressed the regulatory impact of the use of "extremely granular" Small Area geographic units as assessing the geographic scope of the MI WHQA Markets, ultimately leading to the identification of the Zone A and Zone B areas. Eircom predicted that the granularity of the geographical split would make the new regulatory obligations:

*"...extremely difficult (and costly) for Eir to implement, for ComReg to oversee, and for other customers and stakeholders to understand."*¹⁸⁸⁴

Lack of Quantitative Analysis

A1.1151 Eircom described ComReg's RIA as "*cursory in nature*" and considered that ComReg did not properly address the burden that would be placed on Eircom "*in terms of continued compliance costs*". Eircom also considered that the assessment lacked quantitative analysis.

Lack of consideration of other regulatory options

A1.1152 Eircom stated that ComReg referenced its consideration of other regulatory options which it did not, in fact, appear to have considered in the course of the RIA. Eircom considered that ComReg had not therefore given sufficient consideration to alternative options such as self-regulation and co-regulation. Eircom did not think that ComReg had given due consideration to the

*"...likely impact of ex-post competition law in achieving the same objectives."*¹⁸⁸⁵

¹⁸⁸⁴ Eircom's 2018 Submission, paragraph 146.

¹⁸⁸⁵ Eircom's 2018 Submission, paragraph 154.

A1.1153 By way of further example, Eircom queried why, in the context of the geographic market assessment, ComReg had not considered one alternative network as being suitable, instead of the two alternative networks.

A1.1154 Eircom also stated that ComReg had also failed to identify some of the possible negative consequences of regulation in its RIA. Eircom provided an example in which it stated promotion of legacy services might have negative consequences for the use of more advanced MI services.

A1.1155 Eircom finished its critique of ComReg's RIA with the general point that ComReg had failed to meet the requirements of a RIA. A RIA, they said, is supposed to identify the minimum possible regulatory burden on the regulated entity that will ensure effective competition. Eircom contended that ComReg had failed to achieve this, and moreover, had not aimed to identify regulatory measures that would achieve this aim.

ComReg's Assessment of Respondents' Views on ComReg's Preliminary Conclusions on the RIA for the Relevant WHQA Markets

A1.1156 At the outset it is worth noting, as pointed out in the 2018 Further Consultation¹⁸⁸⁶, the RIA needs to be read in conjunction with the entirety of the analysis and assessment set out throughout this Decision.

Use of SA's for Market Assessment

A1.1157 As discussed in Section 5¹⁸⁸⁷ of this Decision, ComReg has now decided to use Workplace Zones ('**WPZs**') rather than Small Areas ('**SAs**') as the unit of geographic analysis. However, as WPZs are derived from SAs¹⁸⁸⁸, the consideration of their use by ComReg below applies equally well to both geographical units.

¹⁸⁸⁶ See paragraph 11.10 of the 2018 Further Consultation.

¹⁸⁸⁷ See paragraphs 5.294 to 5.307 of this Decision.

¹⁸⁸⁸ See paragraph 5.320 of this Decision.

A1.1158 ComReg does not agree with Eircom that ComReg did not adequately consider the regulatory impact of using SAs to as an input to the determination of the geographic scope of the MI WHQA Markets. While the use of SAs is not discussed explicitly in the RIA set out in the 2018 Further Consultation, ComReg's reasoning in choosing SAs as the unit of geographical analysis was discussed at length in Section 4 of the 2018 Further Consultation.

A1.1159 When choosing the relevant geographic unit for the geographic market assessment, ComReg considered a number of other candidate geographic units including streets, Electoral Districts ('**ED(s)**'), Local Authority Administrative Areas ('**LAAA(s)**') and Counties. In setting out its then preliminary views, ComReg was obliged to take account of the Explanatory Note to the 2014 Recommendation¹⁸⁸⁹ in choosing units of an appropriate size, which notes that the units had to be:

"...small enough to avoid significant variations in competitive conditions within each unit but yet big enough to avoid a resource intensive and burdensome micro-analysis that could lead to a fragmentation of markets, (a) able to reflect the network structure of all relevant operators and (b) have clear and stable boundaries over time"

A1.1160 Although streets would be of sufficient granularity to provide the requisite detail, their boundaries can sometimes be ill-defined and difficult to map precisely as stable units. For instance, many roads and streets have alternative names, and some can be of varying lengths that mean that arriving at a stable boundary or applicable length can be difficult.¹⁸⁹⁰

A1.1161 Conversely, although, EDs, LAAs and County boundaries are relatively stable, they are, in ComReg's view, too large to appropriately assess the homogeneity (or otherwise) of competitive conditions between different geographic areas as there can be large differences in network coverage within them. Similarly, ComReg had these concerns in relation to the Eircom exchanges areas as being too large when it ruled these out in the 2018 Further Consultation as being an appropriate geographic unit..

A1.1162 In Section 5 of this Decision, ComReg has explained and justified its decision to move from SAs to WPZs instead.

¹⁸⁸⁹ See footnote 1.

¹⁸⁹⁰ See Section 2.4 of the 2018 TERA Report.

Lack of Quantitative Analysis

A1.1163 Regarding a lack of quantitative analysis, as noted in the 2016 Consultation and 2018 Further Consultation, in determining the impacts of the various regulatory options, current best practice recognises that full cost-benefit analysis would only arise where it would be proportionate or in exceptional cases where robust, detailed and independently verifiable data is available. ComReg does not believe that this is the case for its analysis. Throughout this Decision, and the preceding consultations, ComReg has sought, as far as is practical, to assess the benefits and costs of the regulatory approach now set out in this Decision (as well as those it has discounted).

Lack of consideration of other regulatory options

A1.1164 ComReg notes that the 2016 Consultation, the 2018 Further Consultation, and this Decision all explore, in detail, the suitability of different regulatory approaches for the Relevant WHQA Markets. As such, the overall analysis considers the likely and potential impacts of various regulatory options taking account of the specific characteristics of the Relevant WHQA Markets. Therefore, this RIA forms part of a broader regulatory impact assessment which extends throughout a number of Sections in the 2016 Consultation, the 2018 Further Consultation, and this Decision.

A1.1165 The 2016 Consultation, the 2018 Further Consultation, and this Decision thus incorporate a full and objective assessment of the various regulatory options available for the Relevant WHQA Markets. As part of that assessment, ComReg has undertaken detailed analysis of the specific structure and characteristics of the Relevant WHQA Markets and a graduated impact assessment of potential regulatory options for addressing each of the specific problems identified (however a formal cost benefit analysis is not necessary). This RIA should, therefore, be read in conjunction with the analysis in the 2016 Consultation, the 2018 Further Consultation, and this Decision as a whole.

A1.1166 Regarding the alternative remedies suggested by Eircom, such as self-regulation and/or co-regulation, ComReg would point out that its assessment of competition in the Relevant WHQA Markets was conducted in accordance with the Modified Greenfield Approach and that in the absence of the imposition of regulation, Eircom is likely to have SMP in the markets identified. Furthermore, in accordance with the Framework Regulations, ComReg is obliged to impose one or more regulatory obligations on an SMP Undertaking, with such obligations identified in Regulation 9 to 13 of the Access Regulations. The efficacy of the appropriate regulatory obligations were then considered in detail in the RIAs that accompanied the 2016 Consultation, the 2018 Further Consultation, and this Decision.

A1.1167 Furthermore, in relation to the efficacy of *ex post* competition law to address the identified competition problems, the WHQA market is one that is considered by the European Commission to be susceptible to *ex ante* regulation, and as such, it has already been identified as one where *ex post* competition law would not likely be sufficient to address the competition problems identified. As noted in the 2016 Consultation¹⁸⁹¹ Competition law applied on an *ex post* basis is often unsuitable in preventing certain competition problems such as excessive pricing, and this is evidenced by the scarcity of successful *ex post* excessive pricing cases within EU jurisprudence. An *ex post* approach to excessive pricing in markets such as the LB TI WHQA Market which is characterised by a lack of effective competition and high and non-transitory entry barriers, is not likely to offer adequate protection for consumers or promote effective competition. This is because addressing such issues through competition law approaches (if it is proven to the required competition law standard) would likely occur substantially after the occurrence of the competition problem itself, thereby contributing to significant uncertainty amongst downstream market participants in the interim and undermining the development of effective competition to the detriment of consumers.

A1.1168 ComReg does not agree that it had not properly assessed the possible negative impacts of regulation in the WHQA Markets. In this regard, ComReg would note that it engaged with Respondents and other stakeholders both throughout and after the publication of the 2016 Consultation and 2018 Further Consultation.

A.1.12.7 ComReg's Position on the Regulatory Impact Assessment

A1.1169 In Section 12 of this Decision, ComReg has set out its position on the likely effect of regulatory change in the Relevant WHQA Markets. In summary, ComReg is still of the view that the RIA accompanying the 2016 Consultation properly assesses the impact of the imposition of regulation in the LB TI WHQA market and its removal in the HB TI WHQA. ComReg considers that the regulatory obligations chosen are the least burdensome means of addressing the competition problems identified in Section 7.

¹⁸⁹¹ See paragraph 7.15, for example.

A1.1170 Similarly, ComReg is still of the view that the RIA accompanying the 2018 Further Consultation properly assesses the impact of the imposition of regulation in the Zone B MI WHQA Markets and its removal in the Zone A MI WHQA Markets. ComReg believes that the regulatory obligations chosen are the least burdensome means of addressing the competition problems identified in Section 9.

Annex 2 Retail LL providers

A.2.1 Overview

A2.1 ComReg has briefly outlined a description of the LL networks and LL services provided by 15 of the largest SPs across Ireland in Q4 2018, below. These SPs include Eircom, BT, Vodafone, Virgin Media, Verizon, Digiweb, Airspeed/enet, Colt, GTT, euNetworks, Magnet, Zayo, Host Ireland, AT&T and Fulnett. Of these 15, 13 provide retail LL services on their own networks, with AT&T and Fulnett providing retail LL services exclusively on an Off-net basis.

A.2.2 Eircom

A2.2 Eircom is currently the largest provider of retail LL services in Ireland. It owns and operates a ubiquitous Public Switched Telephone Network ('**PSTN**') and an Integrated Services Digital Network ('**ISDN**') (together called a 'narrowband network'). Eircom also operates and continues to deploy a Next Generation Access ('**NGA**') network which ultimately will likely replace Eircom's narrowband network in areas where it is economically viable for it to do so. These narrowband and NGA networks are used by Eircom to provide a range of services, including retail LLs, fixed phone and broadband services, to business and residential customers.

A2.3 In addition to historically providing traditional analogue and TDM technology based LL services, in 2010 Eircom launched retail and wholesale NGN Ethernet based LL services. Eircom owns and operates a national Next Generation fibre based ('**NGN**') and Wave Division Multiplexed ('**xWDM**') core and access LL network. In 2017 Eircom announced its intention to provide FTTH broadband access to 300,000 rural homes.

A.2.3 BT

A2.4 BT is the second largest provider of retail and wholesale services in Ireland. It owns and operates a national core DWDM network overlaid on fibre which it uses to connect-up its national Ethernet and TDM platforms. Its core network is based on a national duct network leased from Córas Iompair Éireann ('**CIÉ**') with fibre laid along the railway lines with transmission access points at towns located along the routes. It also owns and operates a metro access fibre network which covers business parks and data centres in major cities and some of the smaller towns.

- A2.5 As such, BT can access customer sites by either break out from the metro fibre network or directly from the core fibre network depending on the location of the customer site. In 2014 BT launched Ethernet in the First Mile (**'EFM'**) services from locations where it has unbundled Eircom's Exchanges.

A.2.4 Vodafone

- A2.6 Vodafone offers retail LL services as well as a range of other managed data services (e.g. managed Wide Area Network (**'WAN'**), Internet Protocol (**'IP'**) and Cloud telephone systems). Vodafone's entry into the LL market was initially facilitated through its acquisition of Interfusion in 2011 as well as the subsequent acquisition of Cable and Wireless and Complete Telecom in 2012. Vodafone is also a major purchaser of Wholesale LL services. These services enable Vodafone to offer retail LL services outside of its own network coverage footprint. ComReg notes that it is also feasible for Vodafone to leverage elements of its substantial fixed backhaul network used to service its national mobile network, in order to satisfy business demand for retail LL services. [§< [REDACTED]].

Virgin Media

- A2.7 Virgin Media operates a xWDM core network and a DOCSIS 3 Hybrid Fibre Cable (**'HFC'**) network which requires fibre connectivity to its "street nodes". It also has access to many point-to-point wireless high-sites (used for backhaul services). It has leveraged these assets to offer retail LL point-to-point services.

A.2.5 Verizon

- A2.8 Verizon operates TDM and Ethernet access networks as well as a Multiprotocol Label Switching (**'MPLS'**) and a fibre network in Dublin. In addition it provides retail LL services via leased dark fibre networks in various locations throughout Ireland. Verizon is also a major purchaser of wholesale LL services.

A.2.6 Airspeed / enet

- A2.9 Airspeed provides nationwide retail LL services by utilising fixed point-to-point microwave links ("**P2P Radio Links**") and Fixed Wireless Access Local Area (**'FWALA'**) radio links. It also owns and operates DWDM fibre core network between connected data centres within Dublin. Airspeed and Digiweb purchase wholesale LL services from multiple SPs to provide network backhaul from its regional points of presence (**'PoPs'**) in addition to using their own P2P wireless links for this purpose.

- A2.10 e-Nasc Eireann Teoranta ('enet'), enet Telecommunications Networks Ltd ('ETNL') and Airspeed are all wholly owned subsidiaries of the Irish Infrastructure Fund ('IIF'). They are treated as a single economic undertaking for the purposes of this market review. See paragraphs 3.37 to 3.44, for a description of the Metropolitan Area Networks ('MAN's') operated by enet and ETNL's infrastructure.

A.2.7 Digiweb / Viatel

- A2.11 Digiweb are one of the largest suppliers of wireless Ethernet technology based retail LL services. Digiweb provides retail LL services via its own national network of radio high sites and uses ESB's fibre core network as its national backhaul solution. Digiweb also utilises its fibre infrastructure in Dublin and a significant number of other major cities and towns where the MAN's are present. In addition, Digiweb provides EFM services from locations where it has unbundled Eircom Exchanges. Digiweb also purchases wholesale LL and dark fibre services from multiple SPs in various locations.
- A2.12 Digiweb's presence has grown significantly since the 2008 Decision. Digiweb supply retail LLs predominantly using wireless infrastructure and are one of the main suppliers of retail LLs using such technology, along with AirSpeed.

A.2.8 COLT

- A2.13 COLT provides a variety of retail LL TDM and Ethernet based services as well as dark fibre services. COLT owns and operates DWDM network in the Dublin metropolitan area.

A.2.9 GTT Communications and euNetworks

- A2.14 GTT and euNetworks provide Ethernet and xWDM based retail LL services over their fibre networks, predominantly in the Dublin area.

A.2.10 Magnet

- A2.15 Magnet offer Ethernet LL services, both through their own network and off-net.

A.2.11 Zayo

- A2.16 Zayo provide xWDM based LL services in the Dublin metropolitan area.

A.2.12 Host Ireland

- A2.17 Host Ireland provide Ethernet based retail LL services over its wireless network to end users in the greater Dublin metropolitan area.

A.2.13 AT&T and Fulnett

- A2.18 Neither AT&T nor Fulnett provide retail LL services over their own network. Both purchase wholesale WHQA services in order to provide retail LL services off-net to end users.

Annex 3 Leased Line Data Sources and Methodology used

A.3.1 Overview

- A3.1 This annex briefly sets out the issues encountered by ComReg in the collection of quantitative data from SPs relating to the Relevant Retail LL Markets and the Relevant WHQA Markets, covering the preparation of the 2016 Consultation, the 2018 Further Consultation and this Decision. More importantly, it also details the issues which arose in the treatment of this data and actions taken by ComReg to remediate these issues so that the data could be refined to reasonably accurate levels. This was to allow ComReg to derive, amongst other things, reasonably reliable information for its analysis of market shares, bandwidth usage, and geographic distribution and thereby, assist in its analysis of the WHQA markets.
- A3.2 This annex is structured into the following subsections:
- (a) Data quality issues, discussed in paragraphs A3.3 to A3.17 below;
 - (b) Methodology for calculating circuit market shares, discussed in paragraphs A3.18 to A3.22 below;
 - (c) Pricing and revenue market share information, discussed in paragraphs A3.23 to A3.24 below;
 - (d) 2008 Retail Market LL Data, discussed in paragraphs A3.25 to A3.27 below;
 - (e) Retail Market LL Database 2014-2017, discussed in paragraphs A3.28 to A3.49 below; and
 - (f) 2018 Retail Market LL Data, discussed in paragraphs A3.51 to A3.52.

A.3.2 Data Quality Issues

- A3.3 ComReg has, to varying degrees, experienced difficulties in the collection of LL data from SPs throughout the conduct of the entire LL market analysis process. ComReg noted in Appendix 3¹⁸⁹² of the 2016 Consultation that it had identified 25 issues concerning the data¹⁸⁹³ which was used in its supporting analysis. These were listed in Table A3.1 of that Appendix 3.
- A3.4 Also identified were some examples of poor quality data, the actions taken by ComReg to remedy them and the resulting outcomes. The issues were
- (a) Data Not Provided;
 - (b) Extraneous data provided;
 - (c) Discrepancies between years;
 - (d) Discrepancies between wholesale supplier and purchaser data;
 - (e) On-Net and Off-net circuits confused;
 - (f) Geographic Data (absent or poor quality);
 - (g) Circuit count unit (inconsistent);
 - (h) Revenue/rental data inconsistent;
 - (i) Incorrect Technology listed;
 - (j) Retail and Wholesale customers confused; and
 - (k) Absence of line length information.
- A3.5 The 25 categories of inadequate data provision ranged from incidents at the lower end of the scale, such as the absence of circuit bandwidths, which though apparently minor, caused significant delays in the conduct of the analysis given multiple repeated engagements were required with SPs to rectify such omissions. A more serious example was where [§< ■] confirmed that its entire data submission for 2013 was unreliable and its data set could not be retrospectively corrected as its relevant records had been overwritten.

¹⁸⁹² Appendix 3 of the 2016 Consultation, Leased Lines Data Issues and Treatment.

¹⁸⁹³ Data was then gathered via 3 SIRs which covered data for the periods 2009 to 2013, 2014 and 2015.

- A3.6 It should be noted that ComReg had expended considerable effort composing these SIRs and engaging with SPs in advance by circulating drafts for comment by industry and by directly meeting with SPs. In addition, ComReg streamlined and simplified its SIRs incrementally during the period of examination. For example, it removed line length and distance information elements and combined some sections as per the SIR for the time period H1 2016 data, issued 23 September 2016.
- A3.7 Having considered the 2016 Submissions to the 2016 Consultation, ComReg further streamlined its SIR seeking 2016 year end data ('**April 2017 SIR**').¹⁸⁹⁴ This SIR removed overlapping elements in the data request which previously required off-net retail and wholesale leased lines details and also separately, all purchased leased lines data. This latter data set also required information indicating the use of each purchased line (whether used for downstream retail or wholesale sales or alternately as network inputs to extend ANs and connect PoPs). Previously, this 'intersecting' data (off-net and purchased data) was used to check the integrity of individual SP off-net responses. ComReg decided that for cross-checking and verification purposes, it was sufficient that SPs' purchase data was compared to their supplier sales data.
- A3.8 However, importantly, the April 2017 SIR requested an additional type of information, namely the list of MI LL connected premises of each SP. ComReg's view was that this was a better measure of the relative market power of SPs as it addressed more specifically the economic bottleneck in local access for the provision of MI leased lines and would facilitate a more accurate reflection of any geographic considerations, should such further analysis be deemed necessary.

¹⁸⁹⁴ Issued 12 April 2017.

- A3.9 It also avoided the possible introduction of errors in measuring market shares using service level market share data due to differences in the manner in which SPs each recorded their circuitry information. This especially applied to Ethernet circuits and the logging of physical and logical circuits. Many SPs recorded all service instances as physical circuits, rather than more correctly counting these as logical circuits, while ignoring the physical access bearer. This was in contrast to both Eircom¹⁸⁹⁵ and BT¹⁸⁹⁶ which largely recorded all NGN Ethernet circuit specifically as logical and physical and accorded bandwidths and revenues to each.
- A3.10 ComReg noted these difficulties with data collection in the 2016 Consultation and further commented on these in the 2018 Further Consultation.¹⁸⁹⁷ It also noted the then prosecution of Vodafone¹⁸⁹⁸ for failures in its provision of information in accordance with its obligations. In addition, it noted the views of some SPs¹⁸⁹⁹ in their 2016 Submissions that the changes in the format of the SIRs compared to those associated with the 2008 review caused undue difficulties for SPs. The 2016 Respondents claimed that this resulted in their poor quality data responses and therefore, corresponding substandard analysis and results. ComReg rejected these claims and noted that it had undertaken an exhaustive process of engagement with SPs as outlined above.
- A3.11 ComReg also expressed confidence that the information obtained via the April 2017 SIR¹⁹⁰⁰ (which obtained 2016 year end data) and used in the 2018 Further Consultation¹⁹⁰¹ was accurate and robust. However, as noted below ComReg must now qualify this statement in certain important respects.

¹⁸⁹⁵ Eircom record NGN logical circuits as WSEA Logical/WES circuits and physical circuits as WSEA Physicals as described in its NG Ethernet product description found at www.openeir.ie.

¹⁸⁹⁶ BT records NG Ethernet logical and physical circuits as Etherflows and Etherways <https://www.btireland.com/content/dam/btireland/documents/general/Data-sheet-Wholesale-Ethernet-Connect.pdf>.

¹⁸⁹⁷ See 2018 Further Consultation, paragraphs 3.93 to 3.97.

¹⁸⁹⁸ As noted in paragraph 1.45 of the 2016 Consultation, ComReg also took non-compliance action against Vodafone for failing to provide the requested information. See "[ComReg v Vodafone: District Court Hearing on Failure to Provide Information to ComReg, ComReg Document 15/101](#)", dated 08 September 2015.

¹⁸⁹⁹ BT Ireland and Verizon.

¹⁹⁰⁰ SIR issued 12 April 2017 seeking data for Q4 2016.

¹⁹⁰¹ See paragraph 3.98 of the 2018 Further Consultation.

- A3.12 It should be noted that the 2018 Further Consultation was issued on 22 February 2018 prior to the receipt of data for year 2017. Comparison of this 2017 data to the previous year's data (Q4 2016) was not therefore possible. When the 2017 data was available to ComReg, having regard to comparisons with the previous year's data, ComReg discovered significant differences between the connected premises data for the years 2016 and 2017 as supplied by major SPs active in the HQA markets. Upon completing further investigation and repeated checking with SPs, ComReg discovered that the 2016 data had contained many duplicate records. One SP, [REDACTED] was found to have overstated its 2016 connected premises numbers by over 50%. It also subsequently provided 3 iterations of its 2017 data set, the final version over one month late after which the data was to have been provided.
- A3.13 The overall effect was that the 2016 connected premises data used for the published analysis in the 2018 Further Consultation contained errors given the incorrect provision of data. This issue has also been discussed in Annex 1, Section A.1.5 of this Decision in the context of the geographic market definition exercise and described in detail in the 2019 Tera Report, published in Annex 4 of this Decision.
- A3.14 The mapping data provided for the subsequent and most recent year 2018 (also discussed in Annex 1 and the 2019 Tera Report¹⁹⁰²) also highlighted errors in the mapping data provided by SPs for 2016 which had also been used in the analysis within the 2018 Further Consultation. This was where some network routes had been included by some SPs¹⁹⁰³ which incorrectly designated core routes of rented 3rd party dark fibre as "native" network i.e. network owned by or entirely under the control of the SP. Upon investigation, ComReg discovered that these routes were not available for local access connectivity for the provision of MI LL services and were restricted from such use contractually or due to capacity restrictions.
- A3.15 Such "routes" were confirmed to be rented dark fibre pairs used for connections between data centres and/or PoPs or mobile high-sites and, in many instances, passed through largely residential areas where there was no demand for HQA services. Thus these were eliminated from the final map used for local access and consideration of distances from ANs in the Tera Algorithm.

¹⁹⁰² See Section 2 the 2019 Tera Report.

¹⁹⁰³ [REDACTED].

- A3.16 Equally as important for the data collection process were the recurring errors contained in the data provided by many SPs. Many of the issues and examples listed in Appendix 3 of the 2016 Consultation were found to have recurred in the SPs' responses to the SIRs for the years 2017 and 2018. These included omissions of basic customer address information (from both connected premises and circuitry data), circuit bandwidths, technology designation errors, confusion between off and on-net circuits and inclusion of dark fibre sales as managed leased lines. Some SPs also did not appear to perform any basic internal audit or comparison between updated data they had provided to ComReg with the data they had provided in previous years (which would have also shown discrepancies). This was despite their 2018 responses to SIRs differing significantly in many important aspects from their 2017 SIR responses. Furthermore, several SPs requested copies of their previous years' SIR responses when requested to check against their 2018 SIR responses, thus suggesting a lack of familiarity with their own data.
- A3.17 These issues, with some examples included, are listed in Table 21 below, along with an explanation as to how ComReg has addressed these in the analysis in this Decision. Despite the problems encountered, ComReg is satisfied that due to the extensive rechecking of data and repeated engagements with SPs in providing revisions of their information, the data used in this final analysis is as accurate as is feasible. In ComReg's view, it has reached the point where any further data checking would result in minimal improvement in the accuracy of the data. It has also embarked on a project for the inclusion of leased lines data in its programme to regularise data collection in order to improve accuracy and reliability for the future.

Table 21: Data Collection issues and examples

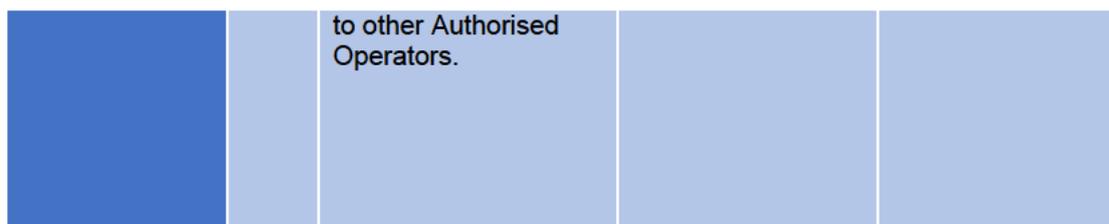
Issue	Ref.	Examples	Action taken	Result
Data not provided	1.1	Connected Premises address data not provided or did not correlate with list of leased lines service level data.	SPs contacted to supply information as requested.	Corrected address/location provided and confirmed.
	1.2	Customer premises addresses incomplete/not provided with LL data (for services market share data).	SPs contacted to supply information as requested.	Corrected address/location information confirmed.
	1.3	Circuit bandwidths not provided.	SPs contacted to supply information. Bandwidth assumed to be same as similar circuit in cohort.	Completed data supplied or assumptions made in a minority of instances e.g. 100 Mb/s assumed to be Ethernet, 45 Mb/s

				assumed to be TDM.
	1.4	Revenue information not provided - circuit rental/revenue not provided.	SPs contacted to supply information or confirm that information was not available/relevant due to sales strategy.	Revenue information supplied or issue clarified. E.g. LL access zero rated where sold as part of bundled offering.
Extraneous data provided	2.1	Broadband circuits included in LL lists.	Broadband circuits removed.	Data cleansed.
	2.2	Dark fibre leases included in LL lists.	Dark Fibre leases removed –checked against lists of infrastructure sales/leases.	Data cleansed.
	2.3	Voice circuits included: voice interconnection circuits included; Primary and Partial Rate Access, analogue PSTN & SIP Trunks included.	All “voice only” circuits removed.	Data cleansed.
Discrepancies between years	3.1	Connected premises data contradicted previous years’ information (duplicates had been included).	SPs contacted to provide corrected data including retrospective data for previous years.	Corrected data confirmed and updated 2016 (published analysis of 2018) rerun retrospectively.
	3.2	Volumes of leased lines significantly different to previous years	SPs contacted to verify data.	Data corrected.
	3.3	Network maps contradicted previous years’ mapping information provided.	SPs contacted to supply corrected/amended information e.g. removal of “sterilised” rented dark fibre backhaul routes from local access maps.	Corrected maps provided and confirmed and 2018 maps used retrospectively.
Discrepancies between wholesale supplier and purchaser data	4.1	Some purchasers reported widely differing off-net circuit purchase volumes to those reported as sold to it by its supplier. E.g. [redacted] reported 292 WHQA LLs purchased from [redacted] for the year 2016 which was found to be 24 lines.	Supplier/Purchaser data compared at individual circuit level and invoices checked where relevant. Supplier information generally accepted as being more reliable as this would be subject to greater internal scrutiny (sales	Corrected data and verified where feasible.

			<p>secured & posted revenue figures).</p> <p>There was a significant exception to this where [redacted] wholesale sales data for lines supplied to [redacted] did not match the copy invoices [redacted].</p> <p>SPs unable to explain/resolve this discrepancy despite repeated attempts by ComReg.</p>	
On-Net and off-Net circuits confused	5.1	Off-net LLs were included in on-net LL list and vice-versa. E.g. [redacted] included all off-net lines on on-net list of circuits.	Supplier/Purchase data compared. SP contacted in some cases.	Data reallocated to correct lists.
Geographic Data (absent or of poor quality)	6.1	Customer addresses absent/incomplete.	Corrected full postal address requested and end user customer name requested for service shares (this was not necessarily available for wholesale LLs).	This allowed Tera/Geocible to achieve accurate geocoding for circa 70% of LL for service shares and over 85% for connected premises.
	6.2	X, Y geo coordinates of customer premises not used/ not available.	Corrected full postal address requested and end user customer name requested for service shares (this was not necessarily available for wholesale LLs). The counting of physical ends though adjusted to measure corresponding logical circuits to measure bandwidth usage where this was available was	This allowed Tera/Geocible to achieve accurate geocoding for circa 70% of LL for service shares and over 85% for connected premises.
	6.3	Eircode information not used.		
	6.4	Local exchange/PoP Exchange information not provided.		
	6.5	Incorrect local exchange/PoP information provided e.g. Premises in Cork shown as connected to Dublin Node for SP with Cork PoP.		

			method used to calculate Service Shares for Ethernet circuits.	
Circuit count unit issues	7.1	Inconsistent approach to recording of circuit information by SPs particularly in regard to Ethernet logical and physical circuits. The counting of physical ends was adopted as the primary method to calculate Service Shares.	The counting of physical end (though adjusted to measure corresponding logical circuits, where available/relevant, to gauge bandwidth consumption) to calculate service shares for Ethernet circuits.	Data cleansed and treated appropriately.
	7.2	Dark Fibre sales included in active circuit count. E.g. [3< [REDACTED]] Listed incidents where dark fibre customers provided with [3< [REDACTED]] [REDACTED]] as on-net LLs.	Supplier/Purchase data compared. SP contacted in some cases.	Data removed from active LL circuit counts.
	7.3	Technology designation of large bandwidth circuits swapped from year to year between Ethernet and xWDM by some SPs caused relatively large percentage swing of total xWDM volumes between years (however, xWDM volumes were low).	Product Market definition was for MI, included both technologies. It also demonstrated that SPs did not perceive technologies as separate.	MI market share trends were consistent and well established and did not impact on overall counts.
Revenue/rental data inconsistent	8.1	Extremely large revenue/rental associated with particular circuits.	SPs contacted to confirm information. Compared to supplier information for off-net lines.	Outliers removed from analyses for bandwidth breaks
	8.2	No revenue or inconsistent revenue attributed to some LL circuits.	SPs contacted to confirm information. Some revenues attributed to layer 3 or non-access services and therefore zero rated.	Outliers removed from analyses for bandwidth breaks Average pricing allocated on per Mb/s basis for some large network providers.

			Some SPs confirmed that local access could be provided FOC for bundled services.	
	8.3	Revenue attributed to groups of circuits in complex retail and wholesale commercial or arrangements or bundles e.g. Network outsourcing.	SPs contacted to confirm details of commercial arrangements for access portion of services and revenue distributed on pro-rata bandwidth basis.	
	8.4	Full revenue for international circuits attributed to national or local access portion of circuits.	SPs contacted to confirm sales value of access portion. Or Value of average of national cohort of similar circuits applied.	Revenue value for some international circuits adjusted for local ends.
	8.5	Revenue for "Commercial B-end" (circuits where commercial arrangement is owned by business unit outside Ireland) was not known or readily available to SP.	SPs contacted to confirm sales value of access portion. Or Value of average of national cohort of similar circuits applied.	Data adjusted accordingly.
Incorrect Technology listed	9.1	Inconsistent technology allocated to some circuits by SPs i.e. circuits with Ethernet product description and bandwidths (10, 100Mb/s) were listed as TDM circuits. Similarly, some circuits with TDM bandwidth (e.g. 34Mb/s) were listed as Ethernet.	Circuits reallocated to correct technology	Data corrected accordingly.
Retail and Wholesale customers confused	10.1	Many SPs had customer's circuits listed on wholesale rather than retail list and vice-versa e.g. [redacted] was listed as a wholesale customer in several instances. Wholesale circuit lists should only have included circuits sold	Customer lines reallocated to correct list.	Data cleansed accordingly.



A.3.3 Methodology for Calculating Circuit Market Shares

- A3.18 Appendix 3 of the 2016 Consultation also outlined the 3 methods adopted by ComReg in measuring service level market shares, namely:
- Method 1, based on a count of LL product dependent combination of logical and physical MI circuits;
 - Method 2, based on a count of only physical circuits; and
 - Method 3, based on a manual count of physical circuit connections including each end of those identified as “double-ended” leased lines.
- A3.19 Method 3 allowed the identification¹⁹⁰⁴ of those ends inside or outside of an identified set of business parks¹⁹⁰⁵ (but not any further geographic detail or differentiation), which required splitting of ‘double-ended’ circuits.
- A3.20 Many SPs recorded all service instances as physical circuits rather than more correctly counting these as logical circuits, while ignoring the physical access bearer. This was because it reflected the information held in their provisioning and billing systems and was in contrast to both Eircom¹⁹⁰⁶ and BT¹⁹⁰⁷ which largely recorded their respective NGN Ethernet products specifically as logical and physical circuits and accorded bandwidths and revenues to each. It should be noted that the Ethernet physical circuits were generally 1 Gb/s or 10 Gb/s access bearers and did not reflect the actual bandwidths made available to, and consumed by, End Users.

¹⁹⁰⁴ This was a labour intensive manual process which required the visual inspection of over ten thousand records on a line by line basis.

¹⁹⁰⁵ Listed in Appendix 5 of 2016 Consultation.

¹⁹⁰⁶ Eircom record NGN logical circuits as WSEA Logical/WES circuits and physical circuits as WSEA Physicals as described in its NG Ethernet product description found at www.openeir.ie.

¹⁹⁰⁷ BT records NG Ethernet logical and physical circuits as Etherflows and Etherways <https://www.btireland.com/content/dam/btireland/documents/general/Data-sheet-Wholesale-Ethernet-Connect.pdf>.

- A3.21 Method 1 was therefore adopted by ComReg as the best methodology for measuring bandwidth consumption. This is best highlighted by the requirements of a national financial institution which fulfils its telecommunications / I.T. demand at its local branches with 10Mb/s logical circuits, but each branch is serviced by a 1Gb/s (1,000 Mb/s) physical access bearer. If the physical access bearer bandwidth was used to calculate its branch network demand, this would exaggerate its usage 100 fold.
- A3.22 The 2016 Consultation also contained a report¹⁹⁰⁸ prepared by ComReg's consultants, Tera Consulting ('**2016**¹⁹⁰⁹ **Tera Report**'). Tera was engaged by ComReg to provide assistance to it with its data analysis and to review the methodology adopted by ComReg. It compared ComReg's approach to data analysis of the LL markets to that of the French and U.K. NRAs, ARCEP and Ofcom. This confirmed that the approach taken by ComReg in using physical access service shares¹⁹¹⁰ to calculate market shares was consistent with that of both these NRA's. Tera also explained the nuanced approach of each to their respective geographical analyses and possible approaches that ComReg could adopt, although it noted the poor quality of SPs' geographic data, which made any detailed geographical assessment of the data very challenging.

¹⁹⁰⁸ Document No.16/69c, Appendix 6 of Consultation 16/69.

¹⁹⁰⁹ 2016 is appended to its title here to distinguish it from the '**2018 Tera Report**' (published as part of the 2018 Further Consultation) and the '**2019 Tera Report**', published with this Decision.

¹⁹¹⁰ Although this was finessed by using logical circuits to gauge bandwidth consumption.

A.3.4 Pricing and Revenue Market Share Information

- A3.23 It should be noted that circuit volumes (rather than revenues) were the basis upon which market shares were calculated. Retail revenue figures were used to calculate overall market valuations¹⁹¹¹ but the analysis revealed that detailed retail revenue data provided by SPs in response to the SIRs was not sufficiently reliable for making useful price comparisons or trend analysis in prices. For example, for pricing comparison of circuits of particular bandwidths. This was due to a number of reasons. It was not practical to compare circuits having similar local access distances as these circuit lengths (distance between the customer premises to the local Exchange or serving node) was not supplied (usually because it was not available). The retail pricing information was also not considered sufficiently reliable due to bundling of services with LLs and significant pricing variations between a SPs' own pricing and also in comparison to other SPs.
- A3.24 For these reasons, the pricing comparison analysis carried in the 2016 OXERA Report used Eircom's publicly available wholesale price list¹⁹¹² are reproduced, and updated with more recent versions of Eircom's wholesale price list, where retail and wholesale pricing is discussed, in Sections 4 and 5. This was also the approach used by the other NRAs referred to above.

A.3.5 2008 Retail Market LL Data

- A3.25 In Section 3 of this Decision a number of Figures include data for 2008, the year of ComReg's previous Decision on WHQA Markets, in order to illustrate the changes with the data for more recent years such as 2017 and 2018. This data included the number of circuits consumed, market revenues, technology utilised as well as the bandwidths consumed by retail customers.

¹⁹¹¹ ComReg adjusted a single year's annual revenues for 6 out of 16 SPs [redacted] across the period 2014 to 2018 (less than 8% annual SP totals), due significant drops (50% or more) in average LL revenue per circuit (using the number of physical circuits) when compared to previous and, when available, following years. Missing revenue data was the most likely explanation for these dramatic variations in average LL revenues. In these cases, ComReg recalculated the specific annual revenues for each SP for that year, using the average of the previous and following year's average annual LL revenue, or when this isn't available just the previous year's average annual LL revenue, multiplied by the number of physical circuits for the year in question. When revenues were significantly higher than preceding or following years, these were not adjusted for.

¹⁹¹² SPs wholesale revenue data had some but not all of the reliability issues identified above with the retail revenue data. The biggest difference was that the data did not include the bundling of other services but did lack information on distances.

- A3.26 This data was based on the submissions from SPs to ComReg's Quarterly Report covering Q1 2008 to Q4 2008. Circuit numbers, technology and bandwidth taken from the average of the submissions to the 4 quarters and the revenues were the summation of the submissions to the 4 quarters.
- A3.27 The data submissions by SPs to the Quarterly Report did not include individual line data and therefore analysis based on customer identification could not be carried out utilising this source.

A.3.6 Retail Market LL Database 2014-2017

- A3.28 ComReg's developed a database on the retail LL markets in order to extend the analysis on the substitutability of Ethernet wireless LLs with wired Ethernet LLs carried out in the Retail Market Assessment of the 2018 Further Consultation, from a single year (Q2-2016) to four years (2014 to 2017). This database also facilitated the expansion of the analysis on multi-site customers and updates to retail market trends and developments more widely, in Sections 3 and 4 of this Decision.
- A3.29 This database (the '**Retail LL Database**') combined the Retail LL SIR data submissions from SPs covering the years 2014 to 2017 (Q4 data for each year). The Retail LL Database served two purposes:
- (a) To uniquely identify and categorise retail customers/end-users; and
 - (b) To track both retail customer and market wide trends in the consumption of retail LL services over the years 2014-2017.
- A3.30 As mentioned in Section A3.5 above, the retail data ComReg possessed for 2008 did not have the necessary granularity (circuits sold to each customer) to include in the Retail LL Database. In addition to this, ComReg did not have sufficient time to incorporate 2018 retail data into the Retail LL Database, as discussed in Section A3.7, below.

A.3.6.1 Data Sources and Retail LL Database Tables

A3.31 The Retail LL Database was constructed from SPs' responses to Statutory Information Requests to SPs for the years 2014¹⁹¹³, 2015¹⁹¹⁴, 2016¹⁹¹⁵, and 2017¹⁹¹⁶. The Retail dataset was formed from a combination of two response sheets: 1) S3_2_1, an SP's LL purchases from other SPs ('**Retail Off-net**'), and 2) S5_2_1, an SP's retail LL sales using their network ('**Retail On-net**'). These responses contained records from SPs' on the retail leased lines provided to their retail customers.

A3.32 The Retail LL Database is composed of three main Tables, as follows:

- (a) Retail Circuit Table – containing the all the information on each circuit sold over the years 2014 to 2017. This is discussed in paragraphs A3.33 to A3.37, below.
- (b) Retail Customer Table – identifying a unique set of retail LL customers across all SPs and over the period 2014 to 2017, containing a categorisation of each customer. This is discussed in paragraphs A3.38 to A3.50, below.
- (c) Retail SP Table - identifying a unique list of SPs data categories over the period 2014 to 2017. This is discussed in paragraphs A3.51 to A3.52 below.

A.3.7 Retail Circuit Table - Cleaning and Treatment of the Data

A3.33 The Retail Circuit Table combined the following data categories for each circuit reported in each SP's Retail Off-net and Retail On-net responses, as follows:

- (a) The ID of the SP providing the circuit,
- (b) The ID of the SP's customer for the circuit,
- (c) The SP's circuit reference,
- (d) Whether the circuit is physical or logical,
- (e) The circuit's capacity in MB/s,

¹⁹¹³ Issued on 05 December 2014.

¹⁹¹⁴ Issued on 15 January 2016.

¹⁹¹⁵ Issued on 12 April 2017.

¹⁹¹⁶ Issued on 08 December 2017.

- (f) The circuit's transmission medium (copper, fibre, wireless),
- (g) The circuit's technology (TDM, Ethernet, or xWDM),
- (h) The annual revenue attributed to the circuit,
- (i) The circuit's A-end address,
- (j) The circuit's B-end address,
- (k) The circuit's installation date,
- (l) The SP's wholesale supplier name,
- (m) The SP's wholesale supplier's circuit reference, and
- (n) The Use of the Circuit (retail, wholesale or network input).

A3.34 Following the collation of this information into a single Table, ComReg had to review the quality and completeness of the data from each SP. Initial corrections included correcting text formats, such as converting text inputs to numbers for numeric data categories such as for bandwidth, revenues etc. Following this, the text data categories required a unique list of entries across all circuit entries such as Logical or Physical for filtering purposes.

A3.35 After correcting the formatting of data, ComReg reviewed missing data by initially searching for the same circuit reference (either using the SP's circuit reference or the wholesale supplier's circuit reference) for other years with more complete data within circuits sold by the same SP. If this was not successful, then a search by the installation date and address was conducted.

A3.36 If the above approaches failed, ComReg next attempted to ascertain missing information on the circuit from its product name (either the SP's product name or the wholesale supplier's product name). For example, if a product name was described as a fibre product, then ComReg made the assumption that this was a fibre circuit. The following are some other steps ComReg took to clean the data:

- (a) Asynchronous circuits were removed from the dataset. These circuits were identified as asynchronous by their product name,
- (b) Circuits with addresses outside of Ireland at both the A-end and B-end were removed from the dataset, and
- (c) Logical circuits without any corresponding physical circuits or circuits that were not identified as either physical or logical were changed to physical circuits.

A3.37 The three most critical data categories, (d) whether the circuit is physical or logical; (f) the circuit's transmission medium (copper, fibre, wireless) and (g) the circuit's technology (TDM, Ethernet, or xWDM), for the analysis required in the Retail Market Assessment (Section 4) and Retail Market Trends and Developments (Section 3) there was a complete set of data for retail circuits for the years 2014 to 2017 for all SPs within the Retail Circuit Table. For all the other categories there involved a certain amount of missing data that could not be identified for some circuits.

A.3.8 Retail Customer Table - Cleaning and Treatment of the Data

A3.38 As part of the creation of the Retail Circuit Table, ComReg created a unique retail customer ID and name for each circuit by SP over the period 2014-2017 for both the Retail Off-net and Retail On-net responses. All of these SP Retail Off-net and Retail On-net tables were combined into a single Retail Circuit Table, where a unique customer code replaced those for each initially allocated by SP.

A3.39 The process involved in determining the unique set of retail customers involved the following conditions:

- (a) Assigning all spelling variations of a retail customer's name, such as those with and without legal entity references i.e. Ltd, to a single retail customer;
- (b) Assigning all subsidiaries or divisions of a parent organisation to a single retail customer;
- (c) Assigning all branches of the Health Service Executive (HSE) to a single retail customer;
- (d) Assigning all school, colleges, universities, institutes of technology, and education training boards to a single retail customer; and
- (e) Assigning all credit unions' to a single retail customer.

Table 22: Physical Retail Circuits without an Identified Retail Customer

	2014	2015	2016	2017
Physical Circuits without a Retail Customer	8	97	201	59

A3.40 There were a relatively small number of physical circuits where no retail customer name could be identified for them in the years 2014 to 2017, as outlined in Table 22 above.

- A3.41 The customers listed in the Retail Customer Table contains the following data categories:
- (a) Customer ID,
 - (b) Customer Name,
 - (c) Customer Category (retail or wholesale),
 - (d) Public Sector,
 - (e) NACE Code,
 - (f) NACE Code subcategory,
 - (g) 2014 Multi-site or Single-site,
 - (h) 2015 Multi-site or Single-site,
 - (i) 2016 Multi-site or Single-site, and
 - (j) 2017 Multi-site or Single-site.

Identifying Multi-site & Single-site Customers

- A3.42 ComReg followed the same methodology for determining multi-site and single-site retail customers in this Decision as that used for the 2018 Further Consultation¹⁹¹⁷. This included:
- (a) Designating retail customers as multi-site if their circuits appeared at 3 or more Irish addresses in a single year. These addresses could appear at either the A-end or B-end of the circuit.
 - (b) Designating retail customers that did not meet this criterion as single-site end-users. This also included retail customers that had a number of circuits with no address data or with only two complete addresses available.
- A3.43 Due to the extensive manual task this designation involved for all retail customers (over 4,000 retail customers and 80,000 circuits, over 4 years) ComReg took a number of steps and assumptions to limit the manual tasks involved, as follows:
- (a) All retail customers in each year with only a single physical circuit, were designated as a single-site customers,

¹⁹¹⁷ See Figure 4 (Methodology and assumptions applied in ComReg's analysis of retail LL purchasers) of the 2018 Further Consultation.

- (b) All retail customers in each year with multiple physical circuits but with only a single distinct or no address in both the A-end or B-end of the circuit, were designated as a single-site customers,
 - (c) All retail customers in each year, with 11 or more physical circuits, with either multiple address in both the A-end or B-end of the circuit, were designated as a multi-site customers¹⁹¹⁸ , and
 - (d) All remaining retail customers for each year were manually examined to determine if they were either single-site or multi-site customers.
- A3.44 As a result of this methodology a Retail Customer could be designated single-site in one year and multi-site in another year.

Assignment of NASC Codes to Retail Customers

- A3.45 ComReg carried out a comparison of the retail customer names list in the Retail Customer Table with the names of Business customers listed¹⁹¹⁹ in a 2018 version of the GeoDirectory Database, which has designated NACE code subcategories¹⁹²⁰ to the majority but not all of business customers in their database.
- A3.46 ComReg matched a NASC code subcategory with over 60% of retail customers in the Retail Customer Table. In cases where there were multiple NACE code subcategories for a single retail customer, ComReg selected the one that was deemed most representative of their main/core activity.
- A3.47 From those retail customers with NACE Code subcategories, ComReg took the first letter of the code to identify the customer in one of the 22 broad business categories (A) to (U).
- A3.48 For approximately another 3% of the retail customers, ComReg manually designated one of the 22 broad business categories (A) to (U) utilising information from the customer name, examples include hotel, county council etc.

¹⁹¹⁸ This follows a manual examination of the A-end or B-end addresses of all retail customers, with 10 physical circuits with each year examined separately.

¹⁹¹⁹ Approximately 180,000 businesses.

¹⁹²⁰ An example of a NACE Code subcategory is C21.1 - Manufacture of basic pharmaceutical products.

Table 23: Summary of Retail Customers with NACE Code Identified

Category	2014	2015	2016	2017
NACE Code Identified	1,612	1,772	1,843	1,959
All Retail Customers	2,558	2,830	2,899	3,093
Share Identified	63%	63%	64%	63%

A3.49 Overall, as can be seen from Table 23, above, approximately 63% of retail customer have had a NACE Code identified over the period 2014 to 2017.

A.3.9 Retail SP Table - Cleaning and Treatment of the Data

A3.50 The Retail SP Table was created to identify the all the SPs providing retail LLs directly to retail customers and also to identify the SPs who provided wholesale / off-net LLs to the former set of SPs. The Retail SP Table contains the following data categories:

- (a) SP ID,
- (b) SP Name,
- (c) Retail Presence, and
- (d) Wholesale Presence.

A.3.10 2018 Retail Market LL Data

A3.51 In Section 3 and Section 4 of this Decision a number of Figures on Retail LLs include data for 2018, the latest set of data collected by ComReg for this Decision. ComReg followed a similar approach to the clean of this retail data as outlined in Section A.3.8, above. This allowed ComReg to include data for 2018 for circuit numbers, market revenues and technology.

A3.52 Due to time constraints ComReg was not in a position to process the data in order to identify the unique set of customers and update the Retail Customer Table for 2018. Therefore any trends or analysis involving customer categories such as public sector, single-site, multi-site, or customers by NACE code did not include 2018. This is also the case for the identification of Retail LL bandwidths, which requires the selection of the appropriate logical and physical circuits.

Annex 4 2019 TERA Report

A4.1 This report is published as a separate document as part of this Decision, Document No. 20/06a entitled: 2019 Tera Report.

Annex 5 Updated OXERA Report

- A5.1 This document is published as a separate document as part of this Decision, Document No. 20/06b entitled: Updated Oxera Report.

Annex 6 2019 Map of Ireland, Work Place Zones in the Zone A MI WHQA Markets and Zone B MI WHQA Markets

A6.1 The 2019 map above is available at the following link:

<https://siteviewer.comreg.ie/whqa>

Annex 7 2019 List of Work Place Zones in the Zone A MI WHQA Markets and Zone B MI WHQA Markets

- A7.1 The list of Work Place Zones (**WPZ(s)**) in the Zone A MI WHQA Markets and Zone B MI WHQA Markets is published as a separate document (Microsoft Excel Spreadsheet), Document No. 20/06c, entitled: List of Zone A and B WPZs.

Annex 8 Decision Instrument for the LB TI WHQA Market and the Zone B MI WHQA Markets

1. STATUTORY POWERS GIVING RISE TO THIS DECISION INSTRUMENT

- 1.1 This Decision Instrument (“Decision Instrument”) is made by the Commission for Communications Regulation (“ComReg”) and relates to the market(s) for wholesale high quality access provided at a fixed location as identified by the European Commission in the 2014 Recommendation and analysed by ComReg in ComReg Document No. 16/69, ComReg Document No. 18/08 and defined by ComReg in ComReg Decision D03/20.
- 1.2 This Decision Instrument is made:
- (i) Pursuant to and having had regard to Sections 10 and 12 of the Communications Regulation Act 2002 (as amended);
 - (ii) Pursuant to and having had regard to Regulation 6(1) of the Access Regulations and Regulation 16 of the Framework Regulations;
 - (iii) Having taken the utmost account of the 2014 Recommendation, the Explanatory Note and the SMP Guidelines;
 - (iv) Having, pursuant to Section 13 of the Communications Regulation Act 2002 (as amended), where applicable, complied with Ministerial Policy Directions;
 - (v) Having had regard to the analysis and reasoning set out in ComReg Document No. 16/69, ComReg Document No. 18/08 and ComReg Document No. 20/06, and having taken account of the submissions received from interested parties in response thereto following a public consultation pursuant to Regulation 12 of the Framework Regulations;
 - (vi) Having consulted with the Competition and Consumer Protection Commission pursuant to Regulation 27 of the Framework Regulations;
 - (vii) Having notified the draft measure and the reasoning on which the measure is based to the European Commission, BEREC and the national regulatory authorities in other European Union Member States pursuant to Regulations 13 and 14 of the Framework Regulations and having taken utmost account of any comments made by these parties;
 - (viii) Pursuant to Regulations 25, 26 and 27 of the Framework Regulations and Regulations 8, 9, 10, 11, 12, 13 and 18 of the Access Regulations; and

- (ix) Having regard to the analysis and reasoning set out in ComReg Decision D03/20.
- 1.3 The provisions of ComReg Document No. 16/69, ComReg Document No. 18/08, ComReg Document No. 20/06 and ComReg Decision D03/20 shall, where appropriate, be construed consistently with this Decision Instrument.
- 1.4 To the extent that there is any conflict between a decision instrument dated prior to the Effective Date and this Decision Instrument, this Decision Instrument shall prevail.

PART I - GENERAL PROVISIONS (SECTIONS 2 TO 5 OF THE DECISION INSTRUMENT)

2. DEFINITIONS

- 2.1 In this Decision Instrument, unless the context otherwise suggests:

“Access” shall have the same meaning as under Regulation 2 of the Access Regulations, as may be amended from time to time;

“Access Path” means the connection from the NTU in the End-User’s premises to the serving Aggregation Node;

“Access Regulations” means the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2011 (S.I. No. 334 of 2011), as may be amended from time to time or replaced with equivalent effect;

“Access Seeker” means an Undertaking (or other authorised operator) that purchases, or could potentially purchase, WHQA services, products, facilities or Associated Facilities;

“Aggregation Area” means the geographical area served by an Aggregation Node;

“Aggregation Node” or **“AGG Node”** means a network concentration point for Access Paths;

“Aggregation Region” means a group of Aggregation Areas where each Aggregation Node is directly connected to a pair of Provider Edge (‘PE’) Nodes or equivalent (for example, IP backbone nodes which are situated higher in the core network hierarchy to which every Aggregation Node within an Aggregation Region is connected);

“Analogue Leased Line” means a leased line with an analogue (2 or 4 wire) interface;

“Associated Facilities” shall have the same meaning as under Regulation 2 of the Framework Regulations, as may be amended from time to time;

“Authorisation Regulations” means the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. No. 335 of 2011), as may be amended from time to time or replaced with equivalent effect;

“BAFO” means Best and Final Offer made by Eircom to Undertakings in respect of a new or amended SLA;

“BEREC” means the Body of European Regulators for Electronic Communications, as established pursuant to Regulation (EU) 2018/1971 of the European Parliament and of the Council of 11 December 2018 establishing the Body of European Regulators for Electronic Communications (BEREC) and the Agency for Support for BEREC (BEREC Office), amending Regulation (EU) 2015/2120 and repealing Regulation (EC) No 1211/2009;

“Bottom Up Long Run Average Incremental Cost plus” or **“BU-LRAIC+”** means the methodology used to estimate the “LRAIC plus” of an efficient operator which is derived from an economic and/or engineering model of an efficient network. The LRAIC plus costs are the average efficiently incurred directly attributable variable and fixed costs, including an appropriate apportionment of joint and common costs;

“Channelised E1 (2Mb/s) Access” means the Eircom wholesale service which combines multiple sub 2Mb/s circuits onto a single 2Mb/s circuit;

“Communications Regulation Act 2002 (as amended)” means the Communications Regulation Act 2002 (No. 20 of 2002), as amended;

“ComReg” means the Commission for Communications Regulation, established under Section 6 of the Communications Regulation Act 2002 (as amended);

“ComReg Decision D06/08” means ComReg Document No. 08/103 entitled “Market Analysis – Leased Line Market Review: Response to Consultation on Draft Decision Instrument Final Decision Notice and Decision Instrument”, dated 22 December 2008;

“ComReg Decision D03/09” means ComReg Document No. 09/65 entitled “Response to Consultation Document and Final Decision – Response to Consultation Document No. 09/11: Review of the regulatory asset lives of Eircom Limited”, dated 11 August 2009;

“ComReg Decision D02/10” means ComReg Document No. 10/12 entitled “Leased Lines Markets: Review of Urban Centres – Response to Consultation 09/86 and Final Decision”, dated 15 February 2010;

“ComReg Decision D08/10” means ComReg Document No. 10/67 entitled “Response to Consultation Document and Final Direction and Decision, Response to Consultation Document No. 09/75 and Final Direction and Decision: Accounting Separation and Cost Accounting Review of Eircom Limited”, dated 31 August 2010;

“ComReg Decision D02/11” means ComReg Document No. 11/22 entitled “Response to Consultation and Final Decision – Amendments to the transparency obligation and the access obligation in the market for wholesale terminating segments of leased lines”, dated 22 March 2011;

“ComReg Decision D05/11” means ComReg Document No. 11/45 entitled “Response to Consultation and Decision on the Introduction of Key Performance Indicators for Regulated Markets”, dated 29 June 2011;

“ComReg Decision D02/12” means ComReg Document No. 12/03 entitled “Response to Consultation Document No. 10/70 and 11/32 – A final decision further specifying the price control obligation in the market for wholesale terminating segments of leased lines”, dated 2 February 2012;

“ComReg Decision D12/13” means ComReg Document No. 13/75 entitled “Leased Line Markets: Further review of Urban Centres – Final Decision and Response to Consultation”, dated 29 July 2013;

“ComReg Decision D11/18” means ComReg Document No. 18/95 entitled “Pricing of wholesale broadband services, Wholesale Local Access (WLA) market and the Wholesale Central Access (WCA) markets, Response to Consultation Document 17/26 and Final Decision”, dated 19 November 2018;

“ComReg Decision D03/20” means ComReg Document No. 20/06, entitled “Market Review – Wholesale High Quality Access at a Fixed Location: Response to 2018 Further Consultation and Decision”, dated 24 January 2020;

“ComReg Document No. 05/24” means ComReg Document No. 05/24 entitled “Response to Consultation, Guidelines on the treatment of confidential information, Final text of Guidelines”, dated 22 March 2005;

“ComReg Document No. 16/69” means ComReg Document No. 16/69, entitled “Market Review: Wholesale High Quality Access at a Fixed Location, Consultation and Draft Decision”, dated 18 August 2016;

“ComReg Document No. 18/08” means ComReg Document No. 18/08, entitled “Market Review: Wholesale High Quality Access at a Fixed Location, Response to Consultation and Further Consultation”, dated 22 February 2018;

“ComReg Document No. 20/06” means ComReg Document No. 20/06, entitled “Market Review – Wholesale High Quality Access at a Fixed Location: Response to 2018 Further Consultation and Decision”, dated 24 January 2020;

“Co-Location” shall have the same meaning and description as under Part B “Co-location services” of the Schedule to the Access Regulations (as may be amended from time to time or replaced with equivalent effect), save that it includes, for the purposes of this Decision Instrument, access to the main distribution frame (MDF) and/or to the optical distribution frame (ODF), floor space, Alternating Current (AC) power, Direct Current (DC) power, air conditioning, cable trays and trunking as applicable at an Eircom Exchange;

“Co-Location Rack Interconnection” means Interconnection between two or more co-location equipment racks belonging to two or more separate Undertakings at an Eircom Exchange;

“Co-Location Resource Sharing” means the facility whereby an Undertaking (the first Undertaking) is permitted to share the resources (including space, power) allocated to that first Undertaking by Eircom in an Exchange with another Undertaking (the second Undertaking) to which Eircom is also providing Access to products, services, facilities and Associated Facilities;

“Competition and Consumer Protection Commission” means the body established under section 9 of the Competition and Consumer Protection Act 2014, formerly the Competition Authority and the National Consumer Agency;

“Customer-Sited Handover” or **“CSH”** means that Eircom provides the transmission path from the Eircom Exchange or AGG Node to the Access Seeker’s nominated premises without the requirement for the Access Seeker to extend its network;

“E1 Channelised Link” means a 2Mb/s timeslot on a Transport Link used for delivery of sub 2Mb/s End-User Links;

“Edge Node Handover” or **“ENH”**, means the connection from Eircom’s network through a dedicated Aggregation Node (installed at the Access Seeker’s MPoP) which interfaces with the Access Seeker’s equipment;

“Effective Date” means the date set out in Section 27 of this Decision Instrument;

“EFM” mean Ethernet First Mile;

“Eircom” means Eircom Limited, and its subsidiaries and any related companies, and any Undertaking which it owns or controls, and any Undertaking which owns or controls Eircom Limited, and its successors and assigns. For the purpose of this Decision Instrument, the terms “subsidiary” and “related company” shall have the meaning ascribed to them in the Companies Act 2014, as may be amended from time to time;

“Electronic Communications Network(s)” or **“ECN(s)”** shall have the same meaning as under Regulation 2 of the Framework Regulations;

“Electronic Communications Service(s)” or **“ECS(s)”** shall have the same meaning as under Regulation 2 of the Framework Regulations;

“End-User” shall have the same meaning as under Regulation 2 of the Framework Regulations. For the avoidance of doubt, End-User(s) shall be deemed to include any natural or legal person who facilitates or intends to facilitate the provision of public communications networks or publicly available electronic communications services to other End-Users and who is not acting as an Undertaking;

“End-User Link” or **“EUL”** means an End-User Link as defined in Eircom’s PPC Product Description;

“Equivalence of Outputs” means the provision of products, services, facilities or Associated Facilities, and information by the SMP Undertaking to OAOs such that such products, services, facilities or Associated Facilities, and information are provided to OAOs in a manner which achieves the same standards in terms of functionality, price, terms and conditions, service and quality levels as the SMP Undertaking provides to itself, albeit potentially using different systems and processes;

“Exchange” means an Eircom network premises or equivalent facility used to house network and associated equipment and may include a Remote Subscriber Unit (RSU). The Exchange sometimes, but not always, houses the MPoP;

“(the) Explanatory Note” means the Commission Staff Working Document: Explanatory Note accompanying the 2014 Recommendation (9 October 2014, SWD (2014) 298);

“Framework Regulations” means the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011), as may be amended from time to time or replaced with equivalent effect;

“High Bandwidth TI WHQA” means wholesale Leased Lines provided over wired infrastructure over a TDM interface at bandwidths greater than 2Mb/s;

“High Quality Access” or **“HQA”** means a service that involves the supply of dedicated transmissions capacity between fixed locations which is supplied to Eircom’s downstream operations or divisions;

“In-Building Handover” or **“IBH”** means the connection from Eircom’s network to the Access Seeker’s equipment within the Exchange, or equivalent facility;

“Industry Process Manual” means the Eircom wholesale WHQA Industry Process Manuals (‘IPMs’) including the WEIL IPM Version 5 dated 9 September 2017, WSEA IPM Version 6 dated 6 February 2018, WUP IPM Version 2 dated 20 June 2017, and the PPC IPM Version 4 dated 25 June 2017 (also known as ‘Inter-operator PPC OM Manual’), as may be amended from time-to-time;

“In-Span Handover” or **“ISH”** means the connection between the Eircom Exchange and the Access Seeker’s nominated Point of Handover. In this instance the Access Seeker extends its network to a point close to the Exchange (this can be in an underground chamber for example);

“Interconnection” shall have the same meaning as under Regulation 2 of the Access Regulations;

“Interconnection Service(s)” may include either or all of CSH, IBH, ISH, and ENH;

“Interconnection Sharing” means a facility whereby an Access Seeker (for example the first Access Seeker) has an agreement with another Access Seeker (the second Access Seeker) for access to the regulated NGN Ethernet Interconnection Services of the second Access Seeker;

“Interconnection Sharing Service” means the service Eircom provides to Access Seekers to enable Interconnection Sharing;

“Kb/s” means kilobit(s) per second;

“Key Performance Indicator(s)” or **“KPI(s)”** means a measure(s) of the standard(s) of product, service, facility or Associated Facility provided by Eircom to OAOs and by Eircom to itself;

“Leased Line” means a service that involves the supply of dedicated transmission capacity between fixed locations. Leased Lines and WHQA are used interchangeably in this document;

“Leased Lines Reference Offer” or **“LLRO”** is the offer of contract by Eircom to Undertakings in relation to wholesale leased lines, as may be amended from time to time. For the avoidance of doubt, the LLRO includes the documents which are expressly referred to in the LLRO as being part of the LLRO and any associated or subordinate document(s) relied upon to meet Eircom’s Access obligations as set out in this Decision Instrument, including but not limited to the Service Level Agreements, Industry Process Manual, Product Descriptions, Eircom’s Wholesale Unified Gateway Interface Guidelines and Eircom’s Wholesale Unified Gateway Data Contract and associated licence documentation. To the extent that there is any conflict between the LLRO and Eircom’s Access obligations now set out herein, it is the latter which shall prevail;

“LLRO Change Matrix” means the table of information collated by Eircom which specifies the non-price related amendments made to its LLRO, including the date(s) on which such amendments come into effect;

“LLRO Price List(s)” means the document(s) listing charges collated by Eircom for products, services, facilities and Associated Facilities which are to be provided and specified in its LLRO in accordance with the requirements of this Decision Instrument;

“LLRO Price List Change Matrix” means the table of information collated by Eircom which specifies the amendments made to the LLRO Price List(s) which are contained in its LLRO, including the date(s) on which such amendments come into effect;

“Long Run Average Incremental Cost plus” or **“LRAIC+”** means the average efficiently incurred directly attributable variable and fixed costs, plus an appropriate apportionment of joint and common costs;

“Low Bandwidth TI WHQA” means wholesale Leased Lines provided over wired infrastructure over a TDM interface at bandwidths less than or equal to 2Mb/s;

“**Mb/s**” means megabit(s) per second;

“**Metropolitan Point of Presence**” or “**MPoP**” means the point of inter-connection between the access and core networks of an Undertaking;

“**MI WHQA**” means wholesale Leased Lines, irrespective of bandwidth, provided over wired infrastructure over modern interfaces such as Ethernet, EFM, xWDM and other such modern interfaces;

“**Milestones**” means the key points in Eircom’s product development process that would be reasonably relied upon by Undertakings to track the progress of an Access request in that process, including, inter alia, Product Development Decision Points and points of transition associated with analysis, design, development and launch stages for meeting the Access request and the date on which the product, service, facility or Associated Facility will be made available for Undertakings;

“**Ministerial Policy Directions**” for the purposes of this Decision Instrument means the policy directions made by Dermot Ahern TD, then Minister for Communications, Marine and Natural Resources, dated 21 February 2003 and 26 March 2004;

“**MSA**” means Multi Service Access;

“**Network Termination Unit**” or “**NTU**” means the physical interface which provides the service demarcation or Point of Handover of the wholesale service within the customer premises;

“**Next Generation Wholesale Product(s)**” means wholesale products provided over Eircom’s Fibre to the Home (**FTTH**), Fibre to the Cabinet (**FTTC**) and Next Generation Network (**NGN**) infrastructure;

“**Non-Trunk Node(s)**” means the Eircom Exchanges so listed in Annex 10 of this Decision;

“**OSS**” means operational support systems;

“**Other Authorised Operator(s)**” or “**OAo(s)**” means an Undertaking that is not Eircom, providing or intending to provide an ECN or an ECS pursuant to Regulation 4 of the Authorisation Regulations;

“**PE Node**” or “**Provider Edge Node**”, means one of the two PE Nodes or equivalent which serve an Aggregation Region. The PE Nodes are located within two Eircom Exchanges situated within the Aggregation Region;

“**PPC**” means Private Partial Circuit as defined in Eircom’s product descriptions;

“**Product Descriptions**” means the Eircom wholesale WHQA products descriptions, including the WEIL Product Description Version 4.0 dated 9 September 2017, WSEA Product Description Version 6 dated 11 March 2019, WUP Product Description Version 5 dated 11 March 2019, and the PPC Product Description Version 4 dated 1 July 2019, as may be amended from time to time;

“Product Development Decision Point” means a point during the development process at which Eircom takes or is due to take a decision to advance, park, or terminate the development of a product, service, facility or Associated Facility;

“Product Development Roadmap” means a document containing a list of all proposed, planned and in progress developments for regulated products, services, facilities and Associated Facilities, and related information, as required from Eircom in accordance with Section 17.23 of this Decision Instrument;

“(the) Relevant Markets” means the markets described in Section 4 of this Decision Instrument;

“Revision History” means a documented list of changes to the Statement of Compliance as required under Section 20 of this Decision Instrument. The list, which contains the changes from the previous draft of the Statement of Compliance, should be maintained and printed in a dedicated and indexed Section of each Statement of Compliance;

“Service Credit(s)” means a financial credit which is provided by Eircom to an OAO in circumstances where Eircom has failed to meet the service levels which Eircom commits to from time to time in its SLA, or on the occurrence of events or the application of criteria specified in the SLA;

“Service Level Agreement(s)” or **“SLA(s)”** mean legally binding contracts between Eircom and OAOs in relation to the service levels which Eircom commits to from time to time, as more particularly set out in the LLRO. For the avoidance of doubt, however, these service levels must comply with the principles set out in this Decision Instrument and to the extent that there is any conflict between the SLAs and Eircom’s obligations set out in this Decision Instrument, it is the latter which shall prevail;

“Shared Services within or between Co-location Racks” means the facility whereby an Undertaking (the first Undertaking) is permitted to share the services allocated to that Undertaking by Eircom in an Exchange with another Undertaking (the second Undertaking);

“Significant Market Power obligation(s)” or **“SMP obligation(s)”** are those obligations as more particularly described in Part II and Part III of this Decision Instrument, as may be amended from time to time;

“Significant Market Power Undertaking” or **“SMP Undertaking”** means the Undertaking designated in Section 5 of this Decision Instrument as having Significant Market Power;

“SMP” means Significant Market Power;

“(the) SMP Guidelines” means the European Commission guidelines of 11 July 2002 on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (2002/C165/03) (OJ C 165, 11.7.2002, p.6), as replaced by the European Commission guidelines of 7 May 2018 on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services (2018/C 159/01) (OJ C 159, 7.5.2018, p.1);

“SLA Negotiation Period” means the duration of time required by Eircom to close negotiations between it and OAOs and make a BAFO in respect of an amended or new SLA;

“Statement(s) of Compliance” means the written statement(s) prepared by Eircom in accordance with Section 20 of this Decision Instrument;

“Structured Information” means information that is documented and managed through an established business process in a formal manner and includes memos, email messages, letters, order forms, invoices, agendas and reports *et al*;

“TDM” means Time Division Multiplexing;

“Transport Link” means a TDM based interconnection service used to deliver EULs as defined in Eircom’s Partial Private Circuit Product Description, V4.0 of 1 July 2019, as may be amended from time to time;

“Trunk Node(s)” means the Eircom Exchanges so listed in Annex 10 of this Decision;

“Undertaking(s)” shall have the same meaning as under Regulation 2 of the Framework Regulations;

“Unified Gateway” means an interface to Eircom’s OSS used by OAOs to avail of regulated wholesale services;

“Unified Gateway Data Contract” means the Eircom wholesale document containing the technical details on how to access the Unified Gateway;

“Unified Gateway Interface Guidelines” means the Eircom wholesale document defining the level of service that Eircom wholesale will provide to users of the Unified Gateway and the responsibilities of those users while using the gateway;

“Unstructured Information” means information that is documented and managed in a less formal manner than Structured Information and includes information passed between individuals or business units through informal communications;

“Version Control” means a standardised regime for the management of changes to documents as it relates to Section 20 of this Decision Instrument. Different versions of the Statement of Compliance should be identified by a number, letter or code, associated with a date and timestamp. Revision History is included as part of the Version Control regime;

“WDM Access” or **“xWDM Access”** means the WDM or xWDM connection between the End-User’s premises and the serving WDM or xWDM node situated in an Eircom Exchange;

“WDM Interconnection” or **“xWDM Interconnection”** means the WDM or xWDM connection between the Access Seeker’s equipment at their MPOP and the serving WDM or xWDM node situated in an Eircom Exchange. There are two handoff variants, IBH and CSH;

“Wholesale Ethernet Interconnection Link” or **“WEIL”** is the interconnection service provided by Eircom which enables the handover of End-User traffic for various wholesale product types including but not limited to WES and Next Generation wholesale products, per Eircom’s WEIL Product Description document, V4.0 dated 9 September 2017, as may be amended from time-to-time;

“WES” means Wholesale Ethernet Service, Eircom’s wholesale NGN Ethernet logical connection between the WSEA and WEIL;

“WHQA” means a service that involves the supply of dedicated transmission capacity between fixed locations. WHQA and Leased Lines are used interchangeably in this document;

“WSEA” means Wholesale Symmetrical Ethernet Access Product, Eircom’s wholesale NGN Ethernet physical access product, per Eircom’s WSEA Product Description Version 6.0 dated 11 March 2019, as may be amended from time-to-time;

“xWDM” or **“WDM”** means Wavelength-Division Multiplexing, a technology which multiplexes multiple optical carrier signals onto a single optical fibre by using different wavelengths;

“Zone A” is an amalgamation of workplace zone areas 1 and 3 which consists of 2,735 workplace zones more particularly described in 0 of ComReg Decision D03/20;

“Zone B” is an amalgamation of workplace zone areas 2 and 4 which consists of 4,484 workplace zones, more particularly described in 0 of ComReg Decision D03/20;

“(the) 2014 Recommendation” means the European Commission Recommendation of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (OJ L 295, 11.10.2014, p. 79).

3. SCOPE AND APPLICATION

- 3.1 This Decision Instrument is binding upon Eircom and Eircom shall comply with it in all respects.
- 3.2 This Decision Instrument applies to Eircom in respect of activities falling within the scope of the Relevant Market(s) defined in Section 4 of this Decision Instrument.
- 3.3 This Decision Instrument, pursuant to Regulation 8 of the Access Regulations, withdraws certain obligations previously imposed upon Eircom, as more particularly set out in Section 26 of this Decision Instrument.

4. MARKET DEFINITION

- 4.1 This Decision Instrument relates to the wholesale market(s) for high quality access provided at a fixed location as identified by the European Commission in the 2014 Recommendation and analysed by ComReg in ComReg Document No. 16/69, ComReg Document No. 18/08 and ComReg Document No. 20/06, and defined by ComReg in ComReg Decision D03/20. For the purposes of this Decision Instrument, ComReg identifies four separate markets as more particularly defined in Section 4.2 below (referred to in this Decision Instrument singularly as the Relevant National Low Bandwidth Traditional Interface Wholesale High Quality Access Market, the Relevant National High Bandwidth Traditional Interface Wholesale High Quality Access Market, the Relevant Zone A Modern Interface Wholesale High Quality Access Markets and the Relevant Zone B Modern Interface Wholesale High Quality Access Markets) and referred to collectively as the Relevant Markets.
- 4.2 Pursuant to Regulation 26 of the Framework Regulations and in accordance with the 2014 Recommendation, the Explanatory Note and taking the utmost account of the SMP Guidelines, in accordance with the principles of competition law, the Relevant Markets defined in this Decision Instrument are:
- (i) the National Low Bandwidth Traditional Interface Wholesale High Quality Access Market (“the (Relevant) Low Bandwidth TI WHQA Market”);
 - (ii) the National High Bandwidth Traditional Interface Wholesale High Quality Access Market (“the (Relevant) High Bandwidth TI WHQA Market”);
 - (iii) the Zone A Modern Interface Wholesale High Quality Access Markets (“the (Relevant) Zone A MI WHQA Markets”); and
 - (iv) the Zone B Modern Interface Wholesale High Quality Access Markets (“the (Relevant) Zone B MI WHQA Markets”).

5. MARKET ASSESSMENT AND SIGNIFICANT MARKET POWER (“SMP”)

- 5.1 It is hereby decided that the Relevant Low Bandwidth TI WHQA Market is susceptible to ex ante regulation.

- 5.2 It is hereby decided that the Relevant High Bandwidth TI WHQA Market is not susceptible to ex ante regulation.
- 5.3 It is hereby decided that the Relevant Zone A MI WHQA Markets are not susceptible to ex ante regulation.
- 5.4 It is hereby decided that the Relevant Zone B MI WHQA Markets are susceptible to ex ante regulation.
- 5.5 Pursuant to Regulation 25 and Regulation 27 of the Framework Regulations and taking the utmost account of the SMP Guidelines, having determined that the Relevant Low Bandwidth TI WHQA Market is not effectively competitive, Eircom is designated as having SMP in the Relevant Low Bandwidth TI WHQA Market.
- 5.6 Pursuant to Regulation 25 and Regulation 27 of the Framework Regulations and taking the utmost account of the SMP Guidelines, having determined that the Relevant High Bandwidth TI WHQA Market is effectively competitive, no operator is designated as having SMP in the Relevant High Bandwidth TI WHQA Market.
- 5.7 Pursuant to Regulation 25 and Regulation 27 of the Framework Regulations and taking the utmost account of the SMP Guidelines, having determined that the Relevant Zone A MI WHQA Markets are effectively competitive, no operator is designated as having SMP in the Relevant Zone A MI WHQA Markets.
- 5.8 Pursuant to Regulation 25 and Regulation 27 of the Framework Regulations and taking the utmost account of the SMP Guidelines, having determined that the Relevant Zone B MI WHQA Markets are not effectively competitive, Eircom is designated as having SMP in the Relevant Zone B MI WHQA Markets.

PART II - SMP OBLIGATIONS (SECTIONS 6 TO 12 OF THE DECISION INSTRUMENT) IN RELATION TO LOW BANDWIDTH TRADITIONAL INTERFACE WHOLESALE HIGH QUALITY ACCESS

6. SMP OBLIGATIONS IN RELATION TO LOW BANDWIDTH TI WHOLESALE HIGH QUALITY ACCESS PRODUCTS, SERVICES, FACILITIES AND ASSOCIATED FACILITIES

- 6.1 ComReg is imposing certain SMP obligations on Eircom in accordance with and pursuant to Regulations 8, 9, 10, 11, 12 and 13 of the Access Regulations, as detailed further in Sections 7 to 12 below in respect of the Relevant Low Bandwidth TI WHQA Market, excluding Analogue Leased Lines, Digital Leased Lines (also known as Wholesale Leased Lines) and Channelised E1 (2Mb/s) Access. In this Part II, references to the Low Bandwidth TI Wholesale High Quality Access Market shall at all times exclude Analogue Leased Lines, Digital Leased Lines (also known as Wholesale Leased Lines) and Channelised E1 (2Mb/s) Access products.

7. OBLIGATIONS TO PROVIDE ACCESS

- 7.1 Pursuant to Regulation 12(1) of the Access Regulations, Eircom shall meet all reasonable requests from Undertakings for the provision of Access to Low Bandwidth TI WHQA products, services, facilities and Associated Facilities.
- 7.2 Without prejudice to the generality of Section 7.1 of this Decision Instrument and pursuant to Regulation 12(2) of the Access Regulations, Eircom shall provide and grant Access to Undertakings in the form of:-
- Partial Private Circuit Leased Lines, consisting of:
- (a) End-User Links of bandwidths 64kb/s up to and including bandwidths of 2Mb/s; and
 - (b) Interconnection services, in particular Transport Links, including ISH and CSH variants (as documented in LLRO Version 3.0, dated 1 July 2019, as may be amended from time to time). For the avoidance of doubt, this includes Transport Links with bandwidths of 2Mb/s and above where the Transport Links are used to terminate EUL bandwidths of n*64Kb/s up to and including 2Mb/s.
- 7.3 Without prejudice to the generality of Sections 7.1 and 7.2 of this Decision Instrument, Eircom shall offer and continue to offer and provide Access to the products, services, facilities and Associated Facilities referred to in Sections 7 and 8 of this Decision Instrument in accordance with the product descriptions and terms and conditions of supply or use, as specified in the current version of the LLRO (that is, LLRO Version 3.0, dated 1 July 2019, as may be amended from time to time), and, in addition, in accordance with Eircom's obligations under this Decision Instrument.
- 7.4 Without prejudice to the general obligations set out in Sections 7.1 to 7.3 of this Decision Instrument, Eircom shall:
- (i) pursuant to Regulation 12(2)(b) of the Access Regulations, negotiate in good faith with Undertakings requesting Access;
 - (ii) pursuant to Regulation 12(2)(c) of the Access Regulations, not withdraw Access to products, services, facilities and Associated Facilities already granted without the prior approval of ComReg and in accordance with terms and conditions as may be determined by ComReg;
 - (iii) pursuant to Regulation 12(2)(e) of the Access Regulations, grant open access to technical interfaces, protocols or other key technologies that are required for the interoperability of products, services, facilities or Associated Facilities;

- (iv) pursuant to Regulation 12(2)(h) of the Access Regulations, provide Access to OSS or similar software systems necessary to ensure fair competition in the provision of services (being those products, services, facilities and Associated Facilities described in this Section 7).

8. CONDITIONS ATTACHED TO THE ACCESS OBLIGATION

- 8.1 Pursuant to Regulation 12(3) of the Access Regulations, Eircom shall, in relation to the obligations set out in Section 7 above, grant Undertakings Access in a fair, reasonable and timely manner.
- 8.2 Without prejudice to the generality of Section 8.1, pursuant to Regulation 12(3) of the Access Regulations, Eircom shall:
 - (i) conclude, maintain and update, as appropriate, legally binding SLAs with Undertakings, which shall include committed service levels and incentivise an efficient level of performance;
 - (ii) negotiate in good faith with Undertakings in relation to the conclusion of legally binding and fit-for-purpose SLAs (either in the case of a new SLA or an amendment to an existing SLA);
 - (iii) ensure that SLAs include provision for Service Credits to be provided by Eircom to Access Seekers in the event that committed service levels are not met;
 - (iv) ensure that SLAs specify the circumstances that trigger the payment of Service Credits, such as, but not limited to, a failure by Eircom to achieve committed service levels, or the occurrence of certain specified events (such as, but not limited to, incidents of service outage or deterioration), and/or other such criteria as appropriate;
 - (v) ensure that SLAs detail the methodology for the calculation of Service Credits and shall include the provision of an example calculation;
 - (vi) ensure that the application of Service Credits, where they occur, shall be applied automatically and in a timely and efficient manner; and
 - (vii) ensure that the level of the Service Credits are fair and reasonable.
- 8.3 For the avoidance of doubt, the Access obligations set out in this Section 8 shall apply irrespective of the electronic communications service that the requested access products, services, facilities and Associated Facilities shall be used to provide. The purpose for which the access request is made is not limited to the provision of services to End-Users.

9. OBLIGATION OF NON-DISCRIMINATION

- 9.1 Pursuant to Regulation 10 of the Access Regulations, Eircom shall have an obligation of non-discrimination in respect of the provision of Access, including Access as regards those services, products, facilities and Associated Facilities described in Sections 7 and 8 of this Decision Instrument. Without prejudice to the generality of the foregoing, Eircom shall:
- (i) apply equivalent conditions in equivalent circumstances to other Undertakings requesting, or being provided with Access (including Access to those products, services, facilities and Associated Facilities described in Sections 7 and 8 of this Decision Instrument) or requesting or being provided with information in relation to such Access; and
 - (ii) provide Access (including Access to those products, services, facilities and Associated Facilities described in Sections 7 and 8 of this Decision Instrument) and information in relation to such Access to all other Undertakings under the same conditions and of the same quality as Eircom provides to itself or to its subsidiaries, affiliates or partners.
- 9.2 Without prejudice to the generality of Section 9.1, Eircom shall (unless otherwise specified in this Decision Instrument) provide Access, including access to those products, services, facilities and Associated Facilities required in accordance with Sections 7 and 8 of this Decision Instrument on, at least, an Equivalence of Outputs basis.
- 9.3 Without prejudice to the generality of Section 9.1, Eircom shall provide to OAOs information which is required to support existing and future products, services, facilities and Associated Facilities falling within the scope of Section 7 and 8 of this Decision Instrument in an accurate and timely manner. For the avoidance of doubt, this applies to new products, services, facilities and Associated Facilities falling within the scope of Section 7 and 8 of this Decision Instrument, irrespective of technology.
- 9.4 Without prejudice to the generality of Section 9.1, the obligations contained therein shall apply irrespective of whether or not a specific request for services or information has been made to Eircom by an Undertaking.

10. OBLIGATION OF TRANSPARENCY

- 10.1 Pursuant to Regulation 9 of the Access Regulations, Eircom shall be subject to an obligation of transparency in relation to Access (including Access to those products, services, facilities and Associated Facilities described in Sections 7 and 8 of this Decision Instrument).

- 10.2 Without prejudice to the generality of Section 10.1 of this Decision Instrument, pursuant to Regulation 9(2) of the Access Regulations, Eircom shall make publicly available and keep updated on its website, a LLRO and an associated Price List. Within six (6) months of the Effective Date of this Decision, Eircom shall notify the updated LLRO to ComReg which shall include information relating to any amendment to an existing obligation or new obligation imposed in this Decision (and other relevant documentation pertaining to the amended obligation/new obligation). The updated LLRO shall be published by Eircom one week after this notification. The updated LLRO will become effective three (3) months after this date, that is, within nine (9) months and one (1) week of the Effective Date of this Decision. The periods reflected in this Section may be varied with the agreement of ComReg or at ComReg's discretion.
- 10.3 The LLRO shall be sufficiently unbundled so as to ensure that Undertakings availing of Access (including Access to those products, services, facilities and Associated Facilities described in Sections 7 and 8 of this Decision Instrument) are not required to pay for products, services, facilities or Associated Facilities which are not necessary for the Access requested.
- 10.4 Without prejudice to the generality of Section 10.3 of this Decision Instrument, and in accordance with the obligations specified elsewhere in this Decision Instrument, Eircom shall ensure that its LLRO includes at least the following:
- (i) a description of the offer of contract for Access (including Access to those products, services, facilities and Associated Facilities described in Sections 7 and 8 of this Decision Instrument) broken down into components according to market needs;
 - (ii) a description of any associated contractual or other terms and conditions for supply of Access (including Access to those products, services, facilities and Associated Facilities described in Sections 7 and 8 of this Decision Instrument) and use, including prices;
 - (iii) a description of the technical specifications and network characteristics of the Access (including Access to those products, services, facilities and Associated Facilities described in Sections 7 and 8 of this Decision Instrument) being offered;
 - (iv) the terms, conditions, Service Level Agreements, guarantees and other product related assurances associated with Low Bandwidth TI WHQA products, services, facilities and Associated Facilities described in Sections 7 and 8 of this Decision Instrument; and
 - (v) at least the elements set out in Section B, C and D of the Schedule to the Access Regulations.

- 10.5 In the event of any conflict between the LLRO and associated documentation, such as the LLRO Price List (including where represented as updated for the purposes of this Decision Instrument), and Eircom's obligations as set out under Sections 7 and 8 of this Decision Instrument, it is the latter which shall prevail.
- 10.6 Without prejudice to the generality of Sections 10.1 and 10.2 and pursuant to Regulation 9 of the Access Regulations, Eircom shall:
- (i) continue to publish and keep updated on its publicly available website, its LLRO in the same form and format as version 3.0, dated 1 July 2019, including a searchable version, as may be amended from time to time, insofar as those products, services, facilities or Associated Facilities contained therein relate to the obligations set out in Sections 7 and 8 of this Decision Instrument;
 - (ii) publish and keep updated on its publicly available website both clean (or unmarked) and tracked changed (or marked) versions of its LLRO (insofar as it relates to the products, services, facilities and Associated Facilities to be provided in accordance with the requirements of Section 7 and 8 of this Decision Instrument). The tracked change version of the LLRO shall be sufficiently clear to allow Undertakings to clearly identify all actual and proposed amendments from the preceding version of its LLRO;
 - (iii) publish and keep updated on its publicly available website an accompanying LLRO Change Matrix which lists all of the amendments incorporated or to be incorporated in any amended LLRO;
 - (iv) publish and keep updated on its publicly available website both clean (unmarked) and tracked changed (marked) versions of the LLRO Price List(s) (insofar as it relates to the products, services, facilities and Associated Facilities to be provided in accordance with the requirements of Section 7 and 8 of this Decision Instrument). The tracked change version of the LLRO Price List shall be sufficiently clear to allow Undertakings to clearly identify all actual and proposed amendments from the preceding version of its LLRO Price List. For the avoidance of doubt, the tracked changed (or marked) version of the LLRO Price List will state the proposed or effective prices as well as the previous most recent prices;
 - (v) publish and keep updated on its publicly available website a LLRO Price List Change Matrix;
 - (vi) maintain and make publicly available on its wholesale website a copy of historic versions of its LLRO, LLRO Price List, LLRO Change Matrix and LLRO Price List Change Matrix; and
 - (vii) state its effective and historical charges in separate LLRO Price List documents.

- 10.7 Eircom shall ensure that its wholesale invoices are sufficiently disaggregated, detailed and clearly presented such that an Undertaking can reconcile invoices to Eircom's LLRO and LLRO Price Lists.
- 10.8 Eircom shall invoice Access Seekers on a monthly basis, one month in advance of the provision of the relevant service, with credit terms set at thirty (30) calendar days.
- 10.9 In respect of both pricing and material non-pricing amendments or changes to the LLRO resulting from either the offer of a new product, service, facility or Associated Facility which falls within the scope of Section 7 and 8 of this Decision Instrument or a change to an existing product, service, facility or Associated Facility which falls within the scope of Section 7 and 8 of this Decision Instrument the following obligations will apply:
- (i) Eircom shall, unless otherwise agreed by ComReg, make publicly available and publish on Eircom's publicly available wholesale website at least three (3) months in advance of their coming into effect, any proposed amendments or changes to the LLRO or the LLRO Price List(s).
 - (ii) Eircom shall notify ComReg in writing with the information to be published at least five (5) working days in advance of any such publication taking place, that is, three (3) months and five (5) working days prior to any amendments or changes coming into effect. The periods referred to in this Section may be varied with the agreement of ComReg or at ComReg's discretion.
- 10.10 For the purposes of Section 10.9, material amendments or changes are those which impact on product functionality or technical specification, the process supporting a product, service, facility or Associated Facility, and the pricing and terms and conditions associated with a product, service, facility or Associated Facility.
- 10.11 Eircom shall, as specified by ComReg in writing from time to time, make publicly available on its wholesale website, information such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices, in respect of the products, services, facilities and Associated Facilities referred to in Sections 7 and 8 of this Decision Instrument.

- 10.12 Pursuant to Regulation 9(3) of the Access Regulations, ComReg may issue directions requiring Eircom to make changes or amendments to its SLAs, the LLRO (and its associated documents), LLRO Price List, LLRO Change Matrix or LLRO Price List Change Matrix to give effect to obligations imposed by this Decision Instrument and to publish such documents with such changes. In accordance with Regulation 18 of the Access Regulations, ComReg may issue directions to Eircom from time to time requiring it to publish information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use and prices.
- 10.13 Eircom shall publish Key Performance Indicators (KPIs) on its publicly available wholesale website. The specification of the content of the KPIs shall be in accordance with the obligations set out in ComReg Decision D05/11 (as may be amended from time to time). Pursuant to Regulations 8, 9 and 18 of the Access Regulations, (and save as provided for in Sections 10.15 and 17.15 of this Decision Instrument) the Sections of Annex 4 of the Decision Instrument contained in ComReg Decision D05/11 titled “Metrics associated with Supply of Services”, “Metrics associated with Designation of Service Orders” and “Metrics associated with Repair of Services” are withdrawn and replaced with the following:

“Metrics associated with Leased Line Services in the Low Bandwidth TI WHQA markets

All figures shall be calculated by Eircom for each Data Collection Period. The figures for each Data Collection Period shall be calculated as described below. They will apply as relevant to each individual metric as laid out in the associated tabular form.

Metric Reference	Title	Definition
5.1.1 to 5.1.3	Percentages of fault on PPC EULs of bandwidths up to 2Mb/s, repaired within 8, 24 and after 24 hours (excludes non-faults and co-op faults)	Percentage of faults (excludes non-faults and co-op faults) reported on PPC EUL's ≤2Mb/s repaired within 8, 24 and after 24 hours, of all faults reported, measured on a quarterly basis
5.1.4 to 5.1.6	Percentages of fault on retail digital TDM leased lines of bandwidths up to 2Mb/s, repaired within 8, 24 and after 24 hours (excludes non-faults and co-op faults)	Percentage of faults (excludes non-faults and co-op faults) reported on retail digital TDM leased lines ≤2Mb/s reported, repaired within 8, 24 and after 24 hours, of all faults reported, measured on a quarterly basis

10.14 Pursuant to Regulations 8, 9 and 18 of the Access Regulations, Tables 5, 6, 7, 8 and 9 of Appendix 2 of the Decision Instrument contained in ComReg Decision D05/11 are withdrawn and replaced with the following:

Ref.	Metrics associated with Fault Repair (WHs = Working Hours)	Retail			Wholesale			
		<8 WHs	<24 WHs	>24 WHs	Metrics associated with Fault Repair	<8 WHs	<24 WHs	>24 WHs
7.1	Low Bandwidth (\leq 2Mb/s) TDM Leased Lines	%	%	%	Low Bandwidth (\leq 2Mb/s) PPC Lines	%	%	%

Table 7.1: Repair of HQA/WHQA Services

- 10.15 The KPIs as set out in Section 10 of this Decision Instrument shall be provided to Access Seekers within 12 months of the Effective Date of this Decision (i.e. Table 7.1). Notwithstanding Sections 10.13 and 17.13 of this Decision Instrument, Eircom shall continue to comply with its obligations to provide KPIs as set out in the Sections of Annex 4 of the Decision Instrument contained in ComReg Decision D05/11 titled “Metrics associated with Supply of Services”, “Metrics associated with Designation of Service Orders” and “Metrics associated with Repair of Services” for a period of 12 months following the Effective Date of this Decision.
- 10.16 Eircom shall, on a quarterly basis, publish on its publicly available wholesale website, a report that evidences actual performance achieved in each of the three (3) previous months in respect of all Undertakings on an aggregate basis compared to the committed service levels contained in the relevant SLA for the products, services, facilities and Associated Facilities referred to in Sections 7 and 8 of this Decision Instrument. Eircom shall also include in the report the methodology and a description of the source data used to determine the actual performance achieved. The report shall also describe how the source data was processed by Eircom and include worked examples as to how the processed source data relates to the actual performance achieved.
- 10.17 Eircom shall make publicly available on its wholesale website all SLAs (and any updates thereto) relating to the provision of the products, services, facilities and Associated Facilities that are to be provided in accordance with Sections 7 and 8 of this Decision Instrument.

- 10.18 Where Eircom considers certain aspects of information to be provided under the obligations set out in this Section 10 to be of a confidential and/or commercially sensitive nature, Eircom shall, without delay, provide ComReg with complete details of such information along with objective reasons justifying why it considers that information is confidential and/or commercially sensitive. ComReg will consider the information in accordance with ComReg Document No. 05/24, so far as is relevant or otherwise. If ComReg considers that the information is not confidential and/or commercially sensitive, it shall be published by Eircom in accordance with its obligations under this Section.
- 10.19 If, having considered a submission from Eircom in accordance with Section 10.18, ComReg concludes that the information is confidential and/or commercially sensitive, the following provisions shall apply:
- (i) Eircom shall not be required to publish the information; or
 - (ii) Notwithstanding sub-section 10.19(i), in circumstances considered appropriate by ComReg, Eircom shall publish general non-confidential details as to the nature of such information and shall make the information or, as agreed with ComReg, extracts of such information, available to an OAO that has signed a Non-Disclosure Agreement (“NDA”), the terms and conditions of which shall be fair, reasonable and non-discriminatory. The NDA shall also be published on Eircom’s publicly available wholesale website;
 - (iii) Without prejudice to the generality of Section 9.1, any confidential and/or commercially sensitive information (or, as agreed with ComReg, extracts thereof) referred to in this Section 10 shall not be made available by Eircom to its downstream operations until such time as it is made available to an OAO, or as otherwise agreed with ComReg.
- 10.20 If and when the commercially sensitive and/or confidential information referred to in Sections 10.18 and 10.19 ceases to be commercially sensitive and/or confidential, it shall be made available by Eircom on its publicly available wholesale website without undue delay and without the need for an NDA to be signed.
- 10.21 For the avoidance of doubt, the obligations set out in this Section 10 apply irrespective of whether or not a specific request for products, services, facilities, Associated Facilities or information has been made by an Undertaking to Eircom.

11. OBLIGATION OF ACCOUNTING SEPARATION

- 11.1 Pursuant to Regulation 11 of the Access Regulations, Eircom shall have an obligation to maintain separated accounts in respect of the products, services, facilities and Associated Facilities falling within the scope of Section 7 and 8 of this Decision Instrument. All of the obligations in relation to accounting separation, set out at Annexes 1 and 2 of ComReg Decision D08/10, applying to Eircom and in force immediately prior to the Effective Date of this Decision Instrument, and relating to products, services, facilities and Associated Facilities falling within the scope of Section 7 and 8 of this Decision Instrument shall be maintained.

12. OBLIGATIONS RELATING TO PRICE CONTROL AND COST ACCOUNTING

- 12.1 Pursuant to Regulation 13(1) of the Access Regulations, Eircom shall maintain appropriate cost accounting systems in respect of products, services, facilities and Associated Facilities described in Sections 7 and 8 of this Decision Instrument.
- 12.2 Pursuant to Regulation 13(1) of the Access Regulations, the prices offered or charged by Eircom to any Undertaking for Access to, or use of, the products, services, facilities or Associated Facilities described in Sections 7 and 8 of this Decision Instrument shall be cost orientated.
- 12.3 In respect of TI LB PPC EULs the prices offered or charged by Eircom to any Undertaking shall be no higher than the prices¹⁹²¹ prevailing for these products, services, facilities and Associated Facilities.
- 12.4 In respect of Transport Links Eircom shall, within five (5) months of the Effective date, submit to ComReg a proposal, containing a revised schedule of cost orientated prices, and an explanation supported by detailed calculations, demonstrating how the cost orientated prices comply with this Section 12.
- 12.5 Pursuant to and in accordance with Regulation 13 of the Access Regulations, the prices offered or charged by Eircom to any Undertaking for any product, service, facilities or Associated Facilities described in Sections 7 and 8 of this Decision Instrument shall be calculated using a BU-LRAIC+ cost methodology.
- 12.6 Without prejudice to the generality of Section 12.2, pursuant to Regulation 13 of the Access Regulations, Eircom shall ensure that it recovers no more than its actual incurred costs adjusted for efficiencies (plus a reasonable rate of return) in respect of connection fees for any product, service, facility and/or Associated Facility described in Sections 7 and 8 of this Decision Instrument.

¹⁹²¹ See Paragraph 8.269 of ComReg Document 20/06 (Final Decision)

PART III - SMP OBLIGATIONS (SECTIONS 13 TO 20 OF THE DECISION INSTRUMENT) IN RELATION TO ZONE B MODERN INTERFACE WHOLESALE HIGH QUALITY ACCESS

13. SMP OBLIGATIONS IN RELATION TO ZONE B MI WHOLESALE HIGH QUALITY ACCESS PRODUCTS, SERVICES, FACILITIES AND ASSOCIATED FACILITIES

13.1 ComReg is imposing certain SMP obligations on Eircom in accordance with and pursuant to Regulations 8, 9, 10, 11, 12, 13 and 18 of the Access Regulations, as detailed further in Sections 14 to 20 below in respect of the Relevant Zone B MI WHQA Markets.

14. OBLIGATIONS TO PROVIDE ACCESS

14.1 Pursuant to Regulation 12(1) of the Access Regulations, Eircom shall meet all reasonable requests from Undertakings for the provision of Access to MI WHQA products, services, facilities and Associated Facilities.

14.2 Eircom shall provide and grant Access to Undertakings to Interconnection Services at the relevant Trunk or Non-Trunk Node in the Zone A MI WHQA Markets and the Zone B MI WHQA Markets.

14.3 Without prejudice to the generality of Section 14.1 and Section 14.2 of this Decision Instrument and pursuant to Regulation 12(2) of the Access Regulations, Eircom shall provide and grant Access to Undertakings for the following particular products, services, facilities and Associated Facilities:-

(a) NGN Ethernet which consists of:

(i) WSEA circuits at a location, that is, Exchange (IBH) and End-User premises (CSH) variants terminating in the Zone B MI WHQA Markets. WSEA IBH includes Access to Co-location, Co-location Resource Sharing, Co-location Rack Interconnection and Shared Services within or between Co-location Racks; and

(ii) NGN Ethernet Interconnection Services, in particular WEILs, including IBH, ISH, CSH and ENH variants, which includes Access to:

(a) Co-location, Co-location Resource Sharing, Co-location Rack Interconnection and Shared Services within or between Co-location Racks, and

(b) Interconnection Sharing Service.

For the avoidance of doubt, the obligation to provide NGN Ethernet Services applies at all relevant Trunk/Non-Trunk Nodes; and

- (iii) Wholesale Ethernet Service (WES) logical connection between the WSEA and WEIL, as follows:
 - (a) From any WSEA terminating in the Zone B MI WHQA Markets within an Aggregation Area to the serving Trunk Node. The WES shall terminate on a WEIL (CSH/IBH/ISH) at the serving Trunk Node;
 - (b) From any WSEA terminating on the Zone B MI WHQA Markets to the serving Non-Trunk Node within the same Aggregation Area. The WES shall be available to terminate on the following:
 - (i) a WEIL (CSH/IBH/ISH) at the serving Non-Trunk Node; or
 - (ii) a WEIL (CSH/IBH/ISH) served from either of the two Trunk Nodes located at the PE exchanges within the Aggregation Region; or
 - (iii) a WEIL on the Access Seeker's Edge Node (i.e. ENH at Access Seeker's premises) within the Aggregation Region.
- (b) WDM services which consist of:
 - (i) WDM access circuits from an Exchange (IBH) or End-User premises (CSH) variants terminating in the Zone B MI WHQA Markets. WDM IBH access connection may require Access to Co-location, Co-location Resource Sharing, Co-location Rack Interconnection and Shared Services within or between Co-location Racks in all Eircom Exchanges, and
 - (ii) WDM Interconnection Services which are supplied in two variants, CSH and IBH. WDM IBH Interconnection may require Access to Co-location, Co-location Resource Sharing, Co-location Rack Interconnection and Shared Services within or between Co-location Racks in all Eircom Exchanges;
 - (iii) WDM MI WHQA service which consists of:
 - (a) WDM Interconnection Services (IBH/CSH) connected to a WDM Access circuit (either IBH/CSH) in the Zone B MI WHQA Markets, both in the same Trunk Node Aggregation Area;
 - (b) WDM Interconnection Services (IBH/CSH) connected to a WDM Access circuit (either IBH/CSH) in the Zone B MI WHQA Markets, both in the same Non-Trunk Node Aggregation Area, and
 - (c) WDM Interconnection Services (IBH/CSH) at either of the two Trunk Nodes located at the PE exchanges connected to WDM

Access circuit (either IBH/CSH) in the Zone B MI WHQA Markets of the Non-Trunk Node Aggregation Area, where the Trunk Nodes (located at the PE exchanges) and the Non-Trunk Node are within the same Aggregation Region.

- 14.4 Without prejudice to the generality of Sections 14.1, 14.2 and 14.3 of this Decision Instrument, Eircom shall offer and continue to offer and provide Access to the products, services, facilities and Associated Facilities referred to in Section 14 of this Decision Instrument in accordance with the product descriptions and terms and conditions of supply or use, as specified in the current version of the LLRO (i.e. LLRO version 3.0, dated 1 July 2019, as published on Eircom's wholesale website) as may be amended from time to time, and, in addition, in accordance with Eircom's obligations under this Decision Instrument.
- 14.5 Without prejudice to the general obligations set out in Sections 14.1 to 14.4 of this Decision Instrument, Eircom shall:
- (i) pursuant to Regulation 12(2)(b) of the Access Regulations, negotiate in good faith with Undertakings requesting Access;
 - (ii) pursuant to Regulation 12(2)(c) of the Access Regulations, not withdraw Access to facilities already granted without the prior approval of ComReg and in accordance with terms and conditions as may be determined by ComReg;
 - (iii) pursuant to Regulation 12(2)(e) of the Access Regulations, grant open access to technical interfaces, protocols or other key technologies that are indispensable for the interoperability of products, services, facilities or Associated Facilities;
 - (iv) pursuant to Regulation 12(2)(h) of the Access Regulations, provide Access to OSS or similar software systems necessary to ensure fair competition in the provision of services (including those products, services, facilities and Associated Facilities described in this Section 14).

15. CONDITIONS ATTACHED TO THE ACCESS OBLIGATION

- 15.1 Pursuant to Regulation 12(3) of the Access Regulations, Eircom shall, in relation to the obligations set out in Section 14, grant Undertakings Access in a fair, reasonable and timely manner.
- 15.2 Without prejudice to the generality of Section 15.1, pursuant to Regulation 12(3) of the Access Regulations, Eircom shall:
- (i) conclude, maintain and update legally binding, fit for purpose SLAs with Access Seekers for MI WHQA products, services, facilities and Associated Facilities, which shall incentivise an efficient level of performance;

- (ii) negotiate in good faith with Access Seekers in relation to the conclusion of legally binding and fit-for-purpose SLAs (either in the case of a new SLA or an amendment to an existing SLA);
- (iii) provide Access Seekers, at the end of the SLA Negotiation Period, with Eircom's BAFO in respect of the relevant SLA which, for the avoidance of doubt, shall be fit for purpose and include all relevant information that is required under this Section 15.2 and accord with the principles set out in this Section 15.2. The SLA Negotiation Period ends with the closing of negotiations and the making of a BAFO by Eircom to Access Seekers with respect to the SLA. When Eircom makes its BAFO, the SLA Negotiation Period is deemed by ComReg to be concluded;
- (iv) ensure that the SLA Negotiation Period includes a discussion on the process for suspension of an SLA and the associated terms and conditions, as described below;
- (v) ensure that SLAs specify the circumstances that trigger the payment of Service Credits, such as, but not limited to, a failure by Eircom to achieve committed service levels, or the occurrence of certain specified events (such as, but not limited to, incidents of service outage or deterioration), and/or other such criteria as appropriate;
- (vi) ensure that SLAs specify the methodology to be used for calculating the quantum of any Service Credits to be paid and include an example of how the methodology will be applied in the calculation of Service Credits;
- (vii) ensure that circumstances which trigger the payment of Service Credits and the methodology for calculating the quantum of Service Credits, taken together, are fair and reasonable in that they adequately incentivise Eircom to deliver an efficient level of service quality and allow Access Seekers to recoup at a minimum the direct costs and any other reasonable loss of value that the Access Seekers incur as a result of the circumstances that triggered the payment of Service Credits;
- (viii) ensure that the application of Service Credits, where they occur, shall be applied automatically and in a timely and efficient manner;
- (ix) ensure that SLAs include, where appropriate, a comprehensive set of terms and conditions governing the circumstances when the SLA can be suspended, and the process to be applied for the suspension of the SLA. Such terms and conditions should be based on objectively defined and measurable parameters;

- (x) in relation to an existing product, service, facility or Associated Facility, following a request from an Access Seeker (including Eircom) for an amendment to an SLA, Eircom shall, within one (1) month of the receipt of such a request, inform the Access Seeker in writing whether the request for an amendment is accepted or rejected and, if accepted, include details of the SLA Negotiation Period and the associated start date. Negotiations in respect of the amended SLA shall close, unless otherwise agreed with ComReg, within six (6) months of the date the Access Seeker makes such a request. Within one (1) month of the date the Access Seeker makes such a request, Eircom may seek an extension to the six (6) month period from ComReg;
- (xi) in relation to an amendment to an existing product, service, facility or Associated Facility, where Eircom itself initiates the amendment, Eircom shall, within one (1) month of the initiated amendment, inform and seek Access Seekers' views as to whether the proposed product amendment should result in an amendment to the relevant SLA;
- (xii) ensure that its obligations with respect to SLAs have been complied with prior to notifying ComReg of non-pricing amendments or changes to the LLRO resulting from the offer of a new, or an amendment to an existing, product, service, facility or Associated Facility that falls within the scope of Section 14 and 15 of this Decision Instrument;
- (xiii) ensure that the new or amended SLA is implemented and is made available to Access Seekers by the date on which:
 - (a) any amendment or change to an existing product, service, facility or Associated Facility comes into effect;
 - or
 - (b) the offer of a new product, service, facility or Associated Facility comes into effect;
- (xiv) where the amended SLA does not relate to 15.2(xiii) (a) or (b) above, Eircom shall ensure that the amended SLA is implemented and is made available to Access Seekers within three (3) months from the end of the SLA Negotiation Period (unless otherwise agreed with ComReg);
- (xv) within six (6) months (unless otherwise agreed with ComReg) of the Effective Date of this Decision Instrument, Eircom shall update its SLAs to include all relevant information and accord with the principles set out above.

- 15.3 The access obligations set out in this Section 15 shall apply irrespective of the electronic communications service that the requested access product, service, facility or Associated Facility shall be used to provide. For the avoidance of doubt, the purpose for which the access request is made is not limited to the provision of services to End-Users.
- 15.4 Where a request by an Undertaking for provision of Access (including Access to those products, services, facilities and Associated Facilities described in Sections 14 and 15 of this Decision Instrument), or a request by an Undertaking for provision of information, is refused or met only in part (including any refusal or partial grant arising under Sections 15.5(ii) or 15.5(iv) below), Eircom shall, at the time of the refusal or partial grant, provide in detail to the Undertaking and to ComReg, each of the objective reasons for such refusal or partial grant. Eircom's response shall be provided in a fair, reasonable and timely manner.
- 15.5 Without prejudice to the generality of Section 15.1 of this Decision Instrument and pursuant to Regulation 12 of the Access Regulations, following a written request from an Undertaking (including a written request from Eircom itself) for Access to a new product, service, facility or Associated Facility or a non-pricing amendment to an existing product, service, facility or Associated Facility, Eircom shall, from the date of receipt of such a written request (unless otherwise agreed with ComReg):
- (i) within three (3) working days, confirm in writing to the Undertaking that has made the written request, that the request has been received;
 - (ii) within fifteen (15) working days, confirm in writing to the Undertaking that has made the written request whether or not the request falls within the scope of Eircom's obligations contained in this Decision Instrument and provide a unique reference number to identify the request;
 - (iii) within thirty (30) working days, confirm in writing to the Undertaking that has made the written request whether or not the Undertaking has provided it with sufficient information to process the request, including the Undertaking's view on the priority of the request relative to other requests pertaining to the Zone B MI WHQA Markets that have already been submitted by that Undertaking. During the thirty (30) working day period, Eircom may seek clarification from the Undertaking;
 - (iv) within eighty-five (85) working days Eircom shall:
 - (a) confirm in writing to the Undertaking that has made the written request whether it agrees to provide the requested product, service, facility or Associated Facility or amendment thereto;
 - (b) where the product, service, facility, Associated Facility or amendment thereto proposed by Eircom differs from the original request, provide the Undertaking that has made the written request

with a written description of such differences, in sufficient detail to allow the Undertaking to be reasonably aware of differences in the key features, functionality and geographic scope of the product, service, facility, Associated Facility or amendment thereto, and/or any limitations of the product, service, facility or Associated Facility or amendment, together with the objective reasons for such differences.

- 15.6 Without prejudice to the generality of Section 15.4 of this Decision Instrument, Eircom shall comply with the requirements of Section 15.4 where Eircom concludes, on the basis of additional analysis conducted during the process of development of a product, service, facility, Associated Facility or amendment thereto that it has agreed to provide in accordance with Section 15.5(iv), that the Access request is no longer reasonable and therefore that the product, service, facility, Associated Facility or amendment thereof requires amendment or cannot progress to completion.
- 15.7 For the avoidance of doubt, the obligations set out in Section 15.4 to 15.6 are separate to and independent of Eircom's transparency obligations in respect of notification and publication as set out in Section 17.9 of this Decision Instrument.

16. OBLIGATION OF NON-DISCRIMINATION

- 16.1 Pursuant to Regulation 10 of the Access Regulations, Eircom shall have an obligation of non-discrimination in respect of the provision of Access, including Access as regards those services, products, facilities and Associated Facilities described in Sections 14 and/or 15 of this Decision Instrument. Without prejudice to the generality of the foregoing, Eircom shall:
- (i) apply equivalent conditions in equivalent circumstances to other Undertakings requesting, or being provided with Access (including Access to those products, services, facilities and Associated Facilities described in Sections 14 and 15 of this Decision Instrument) or requesting or being provided with information in relation to such Access; and
 - (ii) provide Access (including Access to those products, services, facilities and Associated Facilities described in Sections 14 and 15 of this Decision Instrument) and information in relation to such Access to all other Undertakings under the same conditions and of the same quality as Eircom provides to itself or to its subsidiaries, affiliates or partners.
- 16.2 Without prejudice to the generality of Section 16.1 above, Eircom shall (unless otherwise specified in this Decision Instrument) provide Access to those products, services, facilities and Associated Facilities required in accordance with Sections 14 and 15 of this Decision Instrument on, at least, an Equivalence of Outputs basis.

- 16.3 Without prejudice to the generality of Section 16.1, the obligations contained therein shall apply irrespective of whether or not a specific request for services or information has been made to Eircom by an Undertaking.

17. OBLIGATION OF TRANSPARENCY

- 17.1 Pursuant to Regulation 9 of the Access Regulations, Eircom shall be subject to an obligation of transparency in relation to Access (including Access to those products, services, facilities and Associated Facilities described in Sections 14 and 15 of this Decision Instrument).
- 17.2 Without prejudice to the generality of Section 17.1 of this Decision Instrument, pursuant to Regulation 9(2) of the Access Regulations, Eircom shall make publicly available and keep updated on its wholesale website, a LLRO and an associated Price List. Within six (6) months of the Effective Date of this Decision, Eircom shall notify the updated LLRO to ComReg which shall include information relating to any amendment to an existing obligation or new obligation imposed in this Decision (and other relevant documentation pertaining to the amended obligation/new obligation). The updated LLRO shall be published by Eircom one week after this notification. The updated LLRO will become effective three (3) months after this date, that is, within nine (9) months and one (1) week of the Effective Date of this Decision. The periods reflected in this Section may be varied with the agreement of ComReg or at ComReg's discretion.
- 17.3 The LLRO shall be sufficiently unbundled so as to ensure that Undertakings availing of Access (including Access to those products, services, facilities and Associated Facilities described in Sections 14 and 15 of this Decision Instrument) are not required to pay for products, services, facilities or Associated Facilities which are not necessary for the Access requested.
- 17.4 Without prejudice to the generality of Section 17.3 of this Decision Instrument, and in accordance with the obligations specified elsewhere in this Decision Instrument, Eircom shall ensure that its LLRO includes at least the following:
- (i) a description of the offer of contract for Access (including Access to those products, services, facilities and Associated Facilities described in Sections 14 and 15 of this Decision Instrument) broken down into components according to market needs;
 - (ii) a description of any associated contractual or other terms and conditions for supply of Access (including Access to those products, services, facilities and Associated Facilities described in Sections 14 and 15 of this Decision Instrument) and use, including prices;

- (iii) a description of the technical specifications and network characteristics of the Access (including Access to those products, services, facilities and Associated Facilities described in Sections 14 and 15 of this Decision Instrument) being offered;
 - (iv) the terms, conditions, Service Level Agreements, guarantees and other product related assurances associated with MI WHQA products, services, facilities and Associated Facilities described in Sections 14 and 15 of this Decision Instrument, and
 - (v) at least the elements set out in Section B, C and D of the Schedule to the Access Regulations.
- 17.5 In the event of any conflict between the LLRO and associated documentation, such as the LLRO Price List (including where represented as updated for the purposes of this Decision Instrument), and Eircom's obligations as set out under this Decision Instrument, it is the latter which shall prevail.
- 17.6 Without prejudice to the generality of Sections 17.1 and 17.2 above, and pursuant to Regulation 9 of the Access Regulations, Eircom shall:
- (i) continue to publish and keep updated on its publicly available website, its LLRO in the same form and format as version 3.0, dated 1 July 2019, including a searchable version, as may be amended from time to time, insofar as those products, services, facilities or Associated Facilities contained therein relate to the obligations set out in this Decision Instrument;
 - (ii) publish and keep updated on its publicly available website both clean (or unmarked) and tracked changed (or marked) versions of its LLRO (insofar as it relates to the products, services, facilities and Associated Facilities to be provided in accordance with the requirements of this Decision Instrument). The tracked change version of the LLRO shall be sufficiently clear to allow Undertakings to clearly identify all actual and proposed amendments from the preceding version of its LLRO;
 - (iii) publish and keep updated on its publicly available website an accompanying LLRO Change Matrix which lists all of the amendments incorporated or to be incorporated in any amended LLRO;

- (iv) publish and keep updated on its publicly available website both clean (unmarked) and tracked changed (marked) versions of the LLRO Price List(s) (insofar as it relates to the products, services, facilities and Associated Facilities to be provided in accordance with the requirements of this Decision Instrument). The tracked change version of the LLRO Price List shall be sufficiently clear to allow Undertakings to clearly identify all actual and proposed amendments from the preceding version of its LLRO Price List. For the avoidance of doubt, the tracked change (or marked) version of the LLRO Price List will state the proposed or effective prices as well as the previous most recent prices;
 - (v) publish and keep updated on its publicly available website a LLRO Price List Change Matrix;
 - (vi) maintain and make publicly available on its wholesale website a copy of historic versions of its LLRO, LLRO Price List, LLRO Change Matrix and LLRO Price List Change Matrix;
 - (vii) state its effective and historical charges in separate LLRO Price List documents.
- 17.7 Eircom shall ensure that its wholesale invoices are sufficiently disaggregated, detailed and clearly presented such that an Undertaking can reconcile invoices to Eircom's LLRO and LLRO Price Lists.
- 17.8 Eircom shall invoice Access Seekers on a monthly basis, one month in advance of the provision of the relevant service, with credit terms set at thirty (30) calendar days.
- 17.9 In respect of both pricing and material non-pricing amendments or changes to the LLRO resulting from either the offer of a new product, service, facility or Associated Facility which falls within the scope of Sections 14 and 15 of this Decision Instrument or a change to an existing product, service, facility or Associated Facility which falls within the scope of Sections 14 and 15 of this Decision Instrument, the following obligations will apply:
- (i) Eircom shall, unless otherwise agreed by ComReg, make publicly available and publish on Eircom's publicly available wholesale website at least three (3) months in advance of their coming into effect, any proposed amendments or changes to the LLRO or the LLRO Price List(s).
 - (ii) Eircom shall notify ComReg in writing with the information to be published at least five (5) working days in advance of any such publication taking place, that is, three (3) months and five (5) working days prior to any amendments or changes coming into effect. The periods referred to in this Section may be varied with the agreement of ComReg or at ComReg's discretion.

- 17.10 For the purposes of Section 17.9 above, material amendments or changes are those which impact on product functionality or technical specifications, the process supporting a product, service, facility or Associated Facility, and the pricing and terms and conditions associated with a product, service, facility or Associated Facility.
- 17.11 Eircom shall, as specified by ComReg in writing from time to time, make publicly available on its wholesale website, information such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices, in respect of the products, services, facilities and Associated Facilities referred to in Sections 14 and 15 above.
- 17.12 Pursuant to Regulation 9(3) of the Access Regulations, ComReg may issue directions requiring Eircom to make changes or amendments to its SLAs, the LLRO (and its associated documents), LLRO Price List, LLRO Change Matrix or LLRO Price List Change Matrix to give effect to obligations imposed by this Decision Instrument and to publish such documents with such changes. In accordance with Regulation 18 of the Access Regulations, ComReg may issue directions to Eircom from time to time requiring it to publish information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use and prices.
- 17.13 Eircom shall publish KPIs on its publicly available wholesale website. The specification of the content of the KPIs shall be in accordance with the obligations set out in ComReg Decision D05/11 (as may be amended from time to time). Pursuant to Regulations 8, 9 and 18 of the Access Regulations, (and save as provided for in Sections 10.15 and 17.15 of this Decision Instrument) the Sections of Annex 4 of the Decision Instrument contained in ComReg Decision D05/11 titled “Metrics associated with Supply of Services”, “Metrics associated with Designation of Service Orders” and “Metrics associated with Repair of Services” (as withdrawn and replaced by Section 10.13 of this Decision Instrument) are further amended to include the following:

“Metrics associated with Services in the MI WHQA market

All figures shall be calculated by Eircom for each Data Collection Period.

The figures for each Data Collection Period shall be calculated as described below. They will apply as relevant to each individual metric as laid out in the associated tabular form.

Title	Definition
Average delivery supply times for Zone B MI WHQA Access Services (WSEA, WDM Access)	Average supply-time in working days for delivery of Zone B MI WHQA access lines for wholesale orders only (those to OAOs) in categories for standard, project and non-standard designated orders for all orders (100%), and for 97.5% of orders (2.5% of

	orders with the longest supply times discarded), measured monthly, delivered in a specified 3 month quarterly time-period.
Average delivery supply times for Zone B MI HQA Access Services (MSA, WDM Access)	Average supply-time in working days for delivery of Zone B MI HQA access lines for retail orders only in categories for standard, project and non-standard designated orders for all orders (100%), and for 97.5% of orders (2.5% of orders with the longest supply times discarded), measured monthly, delivered in a specified 3 month quarterly time-period.

Table 5 Definitions: Supply of Zone B MI WHQA/HQA Services

Title	Definition
Order designation statistics for Zone B MI WHQA Access Services (WSEA, WDM Access)	Percentage of orders for Zone B MI WHQA access lines which are categorised as being standard, project and non-standard for wholesale orders only, as defined in the corresponding Eircom SLAs, measured monthly, of those orders placed within a specified 3 monthly time period.
Order designation statistics for Zone B MI HQA Access Services (MSA, WDM Access)	Percentage of orders for Zone B MI HQA access lines for retail orders only which are categorised as being standard, project and non-standard, as defined in the corresponding Eircom SLAs, measured monthly, of those orders placed within a specified 3 monthly time period.

Table 6 Definitions: Order Designation of Zone B MI WHQA/HQA Services

Title	Definition
Percentages of fault on Zone B MI WHQA Access Services (WSEA, WDM Access)	Percentage of faults (excludes non-faults and co-op faults) reported on Zone B MI WHQA access services repaired within 8, 24 and after 24 working hours, of all faults reported, measured on a quarterly basis.
Percentages of fault on Zone B MI HQA Access Services (MSA, WDM Access)	Percentage of faults (excludes non-faults and co-op faults) reported on Zone B MI HQA access services repaired within 8, 24 and after 24 working hours, of all faults reported, measured on a quarterly basis.

Table 7.2 Definitions: Repair of Zone B MI WHQA/HQA Access Services

Title	Definition
Percentages of wholesale faults on Zone A MI WHQA Interconnection Services (WEIL, WDM Interconnect)	Percentage of wholesale faults (excludes non-faults and co-op faults) reported on Zone A MI WHQA Interconnection services repaired within 8, 24 and after 24 clock hours, of all faults reported, measured on a quarterly basis.
Percentages of wholesale faults on Zone B MI	Percentage of wholesale faults (excludes non-faults and co-op faults) reported on Zone B MI WHQA Interconnection services

WHQA Interconnection Services (WEIL, WDM Interconnect)	repaired within 8, 24 and after 24 clock hours, of all faults reported, measured on a quarterly basis.
Percentages of faults on Zone B retail MI HQA Lines (with 24*7 SLA) (MSA, WDM Access)	Percentage of faults (excludes non-faults and co-op faults) reported on Zone B retail MI HQA lines only (with 24*7 SLA) repaired within 8, 24 and after 24 clock hours, of all faults reported, measured on a quarterly basis.

Table 7.3 Definitions: Repair of MI WHQA Interconnection and Retail MI HQA Services

Title	Definition
Average delivery supply times for Zone A MI WHQA Interconnection Services for wholesale customers (WEIL, WDM Interconnect)	Average supply-time in working days for delivery of Zone A MI WHQA Interconnection lines for wholesale orders only (those to OAOs) in categories for standard, project and non-standard designated orders for all orders (100%), and for 97.5% of orders (2.5% of orders with the longest supply times discarded), measured monthly, delivered in a specified 3 month quarterly time-period.
Average delivery supply times for Zone B MI WHQA Interconnection Lines (WEIL, WDM Interconnect)	Average supply-time in working days for delivery of Zone B MI WHQA Interconnection lines for wholesale orders only (those to OAOs) in categories for standard, project and non-standard designated orders for all orders (100%), and for 97.5% of orders (2.5% of orders with the longest supply times discarded), measured monthly, delivered in a specified 3 month quarterly time-period.
Average delivery supply times for Zone B MI HQA Services (MSA, WDM Access)	Average supply-time in working days for delivery of Zone B MI HQA Lines for retail orders only in categories for standard, project and non-standard designated orders for all orders (100%), and for 97.5% of orders (2.5% of orders with the longest supply times discarded), measured monthly, delivered in a specified 3 month quarterly time-period.

Table 8 Definitions: Supply of MI WHQA Interconnection and Retail MI HQA Services

Title	Definition
Order designation statistics for Zone A MI WHQA Interconnection Services (WEIL, WDM Interconnect)	Percentage of orders for Zone A MI WHQA Interconnection lines which are categorised as being standard, project and non-standard for wholesale orders only, as defined in the corresponding Eircom SLAs, measured monthly, of those orders placed within a specified 3 monthly time period
Order designation statistics for Zone B MI	Percentage of orders for Zone B MI WHQA Interconnection lines which are categorised as being standard, project and non-

WHQA Interconnection Lines (WEIL, WDM Interconnect)	standard for wholesale orders only, as defined in the corresponding Eircom SLAs, measured monthly, of those orders placed within a specified 3 monthly time period
Order designation statistics for Zone B MI HQA Services (MSA, WDM Access)	Percentage of orders for Zone B MI HQA lines for retail orders only which are categorised as being standard, project and non-standard as defined in the corresponding Eircom SLAs, measured monthly, of those orders placed within a specified 3 monthly time period

Table 9 Definitions: Order Designation of MI WHQA/HQA Interconnection Services

17.14 Pursuant to Regulations 8, 9 and 18 of the Access Regulations, Tables 5, 6, 7, 8 and 9 of Appendix 2 of the Decision Instrument contained in ComReg Decision D05/11, (as withdrawn and replaced by Section 10.13 of this Decision Instrument) are further amended to include the following:

Retail					Wholesale				
<i>Metrics associated with Supply of Services</i>	STD	Proj.	NSTD	Total	<i>Metrics associated with Supply of Services</i>	STD	Proj.	NSTD	Total
<i>– Zone B MI HQA Access Services (MSA, WDM Access) (WD = Working Days)</i>					<i>– Zone B MI WHQA Access Services (WSEA, WDM Access)</i>				
100% of Orders Average Supply Time	WDs	WDs	WDs	WDs	100% of Orders Average Supply Time	WDs	WDs	WDs	WDs
97.5% of Orders Average Supply Time	WDs	WDs	WDs	WDs	97.5% of Orders Average Supply Time	WDs	WDs	WDs	WDs

Table 5: Supply of Zone B MI HQA/WHQA Access Services KPIs

Retail				Wholesale			
Metrics associated with Order Designation	STD	Proj.	NSTD	Metrics associated with Order Designation	STD	Proj.	NSTD
Zone B MI HQA Access Services (MSA, WDM Access)	%	%	%	Zone B MI WHQA Access Services (WSEA, WDM Access)	%	%	%

Table 6: Order Designation of Zone B MI HQA/WHQA Access Services KPIs

	Retail				Wholesale			
Ref.	Metrics associated with Fault Repair (WHs = Working Hours)	<8 WHs	<24 WHs	>24 WHs	Metrics associated with Fault Repair	<8 WHs	<24 WHs	>24 WHs
7.2	Zone B MI HQA Access Services (MSA, WDM Access)	%	%	%	Zone B MI WHQA Access Services (WSEA, WDM Access)	%	%	%
7.3(i)	N/A	N/A	N/A	N/A	Zone A MI WHQA Interconnection Services (WEIL, WDM Interconnect)	%	%	%

7.3(ii)	Zone B MI HQA Services (MSA, WDM Access)	%	%	%	Zone B MI WHQA Interconnection Services (WEIL, WDM Interconnect)	%	%	%
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Table 7: Repair of HQA/WHQA Services

	Retail				Wholesale				
Metrics associated with Supply of MI HQA Services (WD= Work Days)	STD	Proj.	NSTD	Total	Metrics associated with Supply of Interconnection Services (WD= Work Days)	STD	Proj.	NSTD	Total
N/A	N/A	N/A	N/A	N/A	Zone A MI WHQA Interconnection Services (WEIL, WDM Interconnect) 100% of Orders Average Supply Time	WDs	WDs	WDs	WDs
N/A	N/A	N/A	N/A	N/A	Zone A MI WHQA Interconnection Services (WEIL, WDM Interconnect) 97.5% of Orders Average Supply Time	WDs	WDs	WDs	WDs
Zone B MI HQA Services (MSA Services, WDM Interconnect) 100% of Orders Average Supply Time	WDs	WDs	WDs	WDs	Zone B MI WHQA Interconnection Services (WEIL, WDM Interconnect) 100% of Orders Average Supply Time	WDs	WDs	WDs	WDs
Zone B MI HQA Services (MSA Services, WDM Interconnect) 97.5% of Orders Average Supply Time	WDs	WDs	WDs	WDs	Zone B MI WHQA Interconnection Services (WEIL, WDM Interconnect) 97.5% of Orders Average Supply Time	WDs	WDs	WDs	WDs

Table 8: Supply of Retail MI HQA Services versus MI WHQA Interconnection Services KPIs

	Retail			Wholesale			
Metrics associated with Order Designation	STD	Proj.	NSTD	Metrics associated with Order Designation	STD	Proj.	NSTD
N/A	N/A	N/A	N/A	Zone A MI WHQA Interconnection Services (WEIL, WDM Interconnect)	%	%	%

Zone B MI HQA Services (MSA Services, WDM Interconnect)	%	%	%	Zone B MI WHQA Interconnection Services (WEIL, WDM Interconnect)	%	%	%
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Table 9: Order Designation of Retail MI HQA Services versus MI WHQA Interconnection Services KPIs

- 17.15 The KPIs, as set out in Section 17 of this Decision Instrument, shall be provided to Access Seekers within 12 months of the Effective Date of this Decision. Notwithstanding Section 10.13 and 17.13 of this Decision Instrument, Eircom shall continue to comply with its obligations to provide the KPIs as set out in the Sections of Annex 4 of the Decision Instrument contained in ComReg Decision D05/11 titled, “Metrics associated with Supply of Services”, “Metrics associated with Designation of Service Orders”, and “Metrics associated with Repair of Services” for a period of 12 months following the Effective Date of this Decision.
- 17.16 Eircom shall on a quarterly basis, publish on its publicly available wholesale website, a report that evidences actual performance achieved in each of the three (3) previous months in respect of all Undertakings on an aggregate basis compared to the committed service levels contained in the relevant SLA for the products, services, facilities and Associated Facilities referred to in Sections 14 and 15 of this Decision Instrument. Eircom shall also include in the report the methodology and a description of the source data used to determine the actual performance achieved. The report shall also describe how the source data was processed by Eircom and include worked examples as to how the processed source data relates to the actual performance achieved.
- 17.17 Eircom shall make publicly available on its wholesale website all SLAs (and any updates thereto) relating to the provision of the products, services, facilities and Associated Facilities that are to be provided in accordance with Sections 14 and 15 of this Decision Instrument.
- 17.18 Where Eircom considers certain aspects of information to be provided under the obligations set out in this Section 17 to be of a confidential and/or commercially sensitive nature, Eircom shall, without delay, provide ComReg with complete details of such information along with objective reasons justifying why it considers the information to be confidential and/or commercially sensitive. ComReg will consider the information in accordance with ComReg Document No. 05/24, so far as relevant or otherwise. If ComReg considers that the information is not confidential and/or commercially sensitive, it shall be published by Eircom in accordance with its obligations under this Section.
- 17.19 If, having considered a submission from Eircom in accordance with Section 17.18, ComReg concludes that the information is confidential and/or commercially sensitive, the following provisions shall apply:
- (i) Eircom shall not be required to publish the information; or

- (ii) Notwithstanding sub-section 17.19(i), in circumstances considered appropriate by ComReg, Eircom shall publish general non-confidential details as to the nature of such information and shall make the information or, as agreed with ComReg, extracts of such information, available to an OAO that has signed a Non-Disclosure Agreement (“NDA”), the terms and conditions of which shall be fair, reasonable and non-discriminatory. The NDA shall also be published on Eircom’s publicly available wholesale website;
- (iii) Without prejudice to the generality of Section 16.1, any confidential and/or commercially sensitive information (or, as agreed with ComReg, extracts thereof) referred to in this Section 17 shall not be made available by Eircom to its downstream operations until such time as it is made available to an OAO, or as otherwise agreed with ComReg.

17.20 If and when the commercially sensitive and/or confidential information referred to in Sections 17.18 and 17.19 ceases to be commercially sensitive and/or confidential, it shall be made available by Eircom on its publicly available wholesale website without undue delay and without the need for an NDA to be signed.

17.21 Pursuant to Sections 16.1 and 17.1 of this Decision Instrument, Eircom shall make available on its publicly available wholesale website at least six (6) months in advance of implementation (or such period as may be reasonably agreed with ComReg), information regarding the introduction of, changes to, or technical developments relating to, Eircom’s network, infrastructure or new technologies, as well as sufficient information regarding products, services, facilities and Associated Facilities which could reasonably be expected to support products, services, facilities or Associated Facilities falling within the scope of Sections 14 and 15 of this Decision Instrument, including as regards to such products, services, facilities or Associated Facilities to be offered to Eircom’s retail or downstream division. Eircom shall keep this information updated on its publicly available wholesale website. However, material amendments and changes to information may not be notified by way of such an update, but shall be notified at least six (6) months in advance as set out herein, or by agreement with ComReg, or at ComReg’s discretion.

17.22 Having regard to the obligations set out in Section 15.5 of this Decision Instrument, in respect of requests from Undertakings for a new product, service, facility or Associated Facility, or a non-pricing amendment to an existing product, service, facility or Associated Facility, Eircom shall publish on its publicly available wholesale website the relevant information referred to in that Section 15.5 at the same time as it provides the information to the requesting Undertaking.

17.23 Without prejudice to the generality of Section 17.1, the following obligations shall apply with respect to the publication of information in respect of the development of products, services, facilities and Associated Facilities;

- (i) Eircom shall publish and keep updated on its publicly available wholesale website a description of its product development process, including a description of all process steps and activities, identifying all key Milestones and Product Development Decision Points, commencing with the receipt of a written request for Access from an Undertaking, and terminating with the launch of a new or amended wholesale product, service, facility or Associated Facility;
- (ii) For each written Access request accepted by Eircom as being related to a product, service, facility or Associated Facility falling within the scope of Sections 14 and 15 of this Decision Instrument, Eircom shall publish a new or, as appropriate, a revised Product Development Roadmap on its publicly available wholesale website no later than fifteen (15) working days after receipt of the request. The Product Development Roadmap shall be kept updated and shall contain a list of all Access requests accepted by Eircom as being related to a product, service, facility or Associated Facility falling within the scope of Sections 14 and 15 of this Decision Instrument and the following detail in relation to each Access request:
 - (a) the unique reference to identify the Access request;
 - (b) a description of the request and copies of or links to all relevant documentation;
 - (c) the date by which Undertakings can submit their views on the priority of the request relative to other requests falling within the scope of Sections 14 and 15 of this Decision Instrument that have already been submitted by that Undertaking;
 - (d) the Milestones and associated target dates required to develop and launch the product, service, facility or Associated Facility to meet the Access request. Eircom shall also include a method for tracking the actual development of the product, service, facility or Associated Facility against the Milestones and associated target dates. Eircom shall inform Undertakings of any changes to such target dates at the earliest point in time after the need for such changes are identified by Eircom.

- (iii) Eircom shall publish, and keep updated, on its publicly available wholesale website, a Product Development Roadmap listing all of the Access requests accepted by Eircom as being related to a product, service, facility or Associated Facility falling within the scope of Sections 14 and 15 of this Decision Instrument and stating the priority given by Eircom to the development of each request relative to other developments of regulated products, services, facilities or Associated Facilities falling within the scope of Sections 14 and 15 of this Decision Instrument. Within eighty-five (85) working days from receipt of an Access request, Eircom shall update the Product Development Roadmap so as to identify the degree of priority that it proposes to assign to the proposed development arising from that request. In the event of the reprioritisation by Eircom of an Access request(s), Eircom shall state the objective reasons for such reprioritisation(s) in the Product Development Roadmap.

17.24 Without prejudice to Section 15.5, following a written Access request from an Undertaking (including a written request from Eircom itself) for a new product, service, facility, Associated Facility or a non-pricing amendment to an existing product, service, facility or Associated Facility, the following obligations shall apply from the date of receipt of such written request (unless otherwise agreed with ComReg):

- (i) For each written request received by Eircom and accepted by Eircom as being related to a product, service, facility or Associated Facility falling within the scope of Sections 14 and 15 of this Decision Instrument Eircom shall, at the earliest possible time, but not later than fifteen (15) working days after the receipt of the request, advise all Undertakings that the request has been received and provide them with information regarding the request as set out in Section 17.24(ii) below;
- (ii) The information shall include a unique reference number to allow tracking of the request, and all known details relevant to the request, including, but not limited to, a copy of the request, and a description of the key features and functionality requested;
- (iii) Unless otherwise agreed with ComReg, not later than forty (40) working days after receipt of the written request, Eircom shall publish an accurate description of the requested product, service, facility or Associated Facility on its publicly available wholesale website;

- (iv) Unless otherwise agreed with ComReg, not later than eighty five (85) working days after receipt of the written request, Eircom shall confirm in writing to all Undertakings whether it agrees to provide the requested new or amended product, service, facility or Associated Facility. Where the request is refused in full or in part, Eircom shall comply with Section 15.4 above in its response to the Undertaking that has made the request. In addition, Eircom shall advise all other Undertakings of a full or partial refusal and provide written reasons for its refusal at the time of such refusal. Where the product, service, facility or Associated Facility proposed by Eircom differs from the original request, Eircom shall provide the objective reasons for such differences in writing to all Undertakings within the eighty-five (85) working day timeframe;
- (v) Eircom shall, not later than eight-five (85) working days after receipt of the written request, identify the degree of priority that it proposes to assign to the development related to the Access request relative to all other developments, including Access requests and amendments proposed by Eircom, of regulated products, services, facilities, or Associated Facilities falling within the scope of Sections 14 and 15 of this Decision Instrument, and advise all Undertakings of this degree of priority. In the event of the reprioritisation by Eircom of an Access request or requests, Eircom shall advise all Undertakings of such reprioritisation;
- (vi) Eircom shall, for each such development, provide all Undertakings with all other relevant documentation including, but not necessarily limited to, any revised Industry Process Manual(s), price lists or technical manuals;
- (vii) at all stages of the product development process, Eircom shall make available and keep updated on its publicly available wholesale website, all relevant documentation describing the product, service, facility or Associated Facility which will be delivered by each development in sufficient detail to allow an Undertaking to be reasonably aware of the proposed key features, functionality and geographic reach of the product, service, facility or Associated Facility and any relevant limitations of the product, service, facility or Associated Facility and;
- (viii) Eircom shall publish on its publicly available wholesale website the prioritisation process and the criteria used by Eircom in reaching decisions with respect to the prioritisation of product developments relative to each other.

17.25 Eircom shall make information regarding the rollout of regulated MI WHQA services available on its publicly available wholesale website. In summary, Eircom shall, unless otherwise agreed by ComReg:

- (a) publish, on its publicly available wholesale website, at least three (3) months in advance, any proposed changes to the MI WHQA (including NGN Ethernet and WDM) rollout plan;
- (b) publish, on its publicly available wholesale website, the MI WHQA rollout plan within the first ten (10) calendar days of each month, and
- (c) publish the MI WHQA rollout plan with sufficient detail to allow Access Seekers to determine:
 - (i) active MI WHQA nodes;
 - (ii) the services offered at each MI WHQA node;
 - (iii) planned MI WHQA nodes (including forecast dates); and
 - (iv) the services to be offered at each planned MI WHQA node.

18. OBLIGATION OF ACCOUNTING SEPARATION

- 18.1 Pursuant to Regulation 11 of the Access Regulations, Eircom shall have an obligation to maintain separated accounts in respect of the products, services, facilities and Associated Facilities falling within the scope of this Decision Instrument. All of the obligations in relation to accounting separation, set out at Annexes 1 and 2 of ComReg Decision D08/10, applying to Eircom and in force immediately prior to the Effective Date of this Decision Instrument, and relating to products, services, facilities and Associated Facilities falling within the scope of this Decision Instrument shall be maintained.

19. OBLIGATIONS RELATING TO PRICE CONTROL AND COST ACCOUNTING

- 19.1 Pursuant to Regulation 13(1) of the Access Regulations, Eircom shall maintain appropriate cost accounting systems in respect of products, services, facilities and Associated Facilities described in Sections 14 and 15 of this Decision Instrument.
- 19.2 Pursuant to Regulation 13(1) of the Access Regulations, the prices offered or charged by Eircom to any Undertaking for Access to, or use of, the products, services, facilities or Associated Facilities described in Sections 14 and 15 of this Decision Instrument shall be cost orientated. Eircom shall, within four (4) months of the Effective date, submit to ComReg a proposal containing a revised schedule of cost orientated prices and an explanation supported by detailed calculations demonstrating how the cost orientated prices comply with this Section 19 obligation.
- 19.3 Pursuant to and in accordance with Regulation 13 of the Access Regulations, the prices offered or charged by Eircom to any Undertaking for any product, service, facility or Associated Facility described in Sections 14 and 15 of this Decision Instrument shall be calculated using a BU-LRAIC+ cost methodology.

- 19.4 Pursuant to and in accordance with Regulation 13 of the Access Regulations, the prices offered or charged by Eircom to any Undertaking for any product, service, facility or Associated Facility described in Sections 14 and 15 of this Decision Instrument shall be calculated in accordance with paragraph 19.3 using the following cost models, as appropriate and where relevant:
- (a) The Revised Copper Access Model detailed in Chapter 5 of ComReg Decision D03/16 as may be updated from time to time or replaced with equivalent effect¹⁹²²;
 - (b) the NGN Core Network model detailed in Chapter 4 of ComReg Decision D02/12 and any further developments of the NGN Core Model contained in ComReg Decision D11/18, as may be updated from time to time.
- 19.5 Without prejudice to the generality of Section 19.3, pursuant to Regulation 13 of the Access Regulations, Eircom shall ensure that it recovers no more than its actual incurred costs adjusted for efficiencies (plus a reasonable rate of return) in respect of connection fees for any product, service, facility or Associated Facility described in Sections 14 and 15 of this Decision Instrument.

20. OBLIGATIONS RELATING TO STATEMENTS OF COMPLIANCE

- 20.1 Pursuant to Regulations 8, 9, 10, 11, 12 and 13 of the Access Regulations Eircom shall submit to ComReg a written Statement of Compliance that adequately demonstrates its compliance with its regulatory obligations in respect of the Zone B MI WHQA Markets. This Statement of Compliance shall include the following:
- (i) a full and true written statement, signed by a Director of Eircom authorised to provide such statement(s) on behalf of the Board of Directors of Eircom, in which;
 - (a) the Directors acknowledge they are responsible for Eircom securing compliance with its regulatory obligations;
 - (b) the Directors confirm that, in their opinion, arrangements, structures and internal controls are in place that provide reasonable assurance that Eircom is compliant with its obligations as set out in this Decision Instrument;
 - (c) the Directors explain the basis upon which the confirmation in subparagraph 20.1(i)(b) above is made, including a description of the information relied upon and the processes followed by the Directors of Eircom in order to be satisfied that to the best of their knowledge

¹⁹²² See paragraph 10.437(a) of ComReg Document 20/06 (Final Decision)

the arrangements, structures and internal controls in place provide reasonable assurance that Eircom is in compliance with the obligations set out in this Decision Instrument;

- (ii) a description of the process of risk identification, and the controls developed to mitigate risks of non-compliance with Eircom's regulatory obligations as they relate to the categories of activities in Section 20.2 below and shall include the following in particular:
 - (a) a detailed description of the risk analysis process, to include the following:
 - (i) a description of the expertise employed by Eircom;
 - (ii) a list of all material including all relevant documentation;
 - (iii) a description of how the material and expertise was used, and
 - (iv) a description of the purpose of each process which was analysed for risks of non-compliance.
 - (b) a detailed description of the risks identified utilising the risk analysis process described in Section 20.1(ii)(a) above;
 - (c) a detailed description of the controls developed utilising the control development process described in Section 20.1(ii)(d) below;
 - (d) a detailed description of the control development process to include the following:
 - (i) a description of the relationship of each control to the underlying risk identified pursuant to Section 20.1(ii)(b) above;
 - (ii) a description of the expertise relied upon by Eircom management;
 - (iii) a list of all material including all relevant documentation used;
 - (iv) a description of how the material and expertise was used, and
 - (v) a description of the process used to assess the effectiveness of the controls.
 - (e) a description of the operation of controls including the method employed by Eircom to record and store the data produced when controls are operated;
 - (f) a description of and the identification of the repository in which the data from the operation of each control is recorded and stored.

20.2 The obligations set out in Section 20.1 shall apply, but are not limited to, the following categories of activities:

- (i) pre-provisioning, provisioning and service assurance for Zone B MI WHQA products, services, facilities and Associated Facilities;
 - (ii) product development including product enhancements and pre product development screening of Access requests;
 - (iii) product prioritisation and investment decisions;
 - (iv) access to shared resources, including IT and product development resources;
 - (v) the management of information, both Structured Information and Unstructured Information in conformance with regulatory requirements;
 - (vi) the preparation and submission of bids in response to a commercial or government request for a proposal or tender;
- 20.3 The documentation referred to in this Section 20 shall be of sufficient clarity and detail to enable ComReg, or a third party as determined by ComReg, to review the Statement of Compliance for completeness and accuracy. Such documentation and information shall also enable ComReg, or a third party as determined by ComReg, to assess Eircom's risk assessment and control and governance measures in order to enable ComReg to determine whether Eircom has provided reasonable assurance to ComReg that Eircom is compliant and will remain compliant with the obligations set out in this Decision Instrument.
- 20.4 Eircom shall ensure that any Statement(s) of Compliance provided pursuant to this Section 20 will be kept updated as required to reflect material changes to the documentation and information detailed in this Section 20. These updates shall be provided to ComReg within one (1) month of the update being made by Eircom.
- 20.5 Updates or changes to any Statement(s) of Compliance provided to ComReg must be presented such that the changes are highlighted and the Statement of Compliance documents include a Version Control and Revision History.
- 20.6 Eircom shall publish any Statement of Compliance, and updates to any Statement(s) of Compliance, on its publicly available wholesale website within one (1) month of providing it to ComReg, unless otherwise agreed with ComReg.
- 20.7 Unless otherwise agreed with ComReg, Eircom shall provide a Statement of Compliance, as referred to in this Section 20, to ComReg within six (6) months of the Effective Date of this Decision. Unless otherwise agreed with ComReg, Eircom shall also provide a Statement of Compliance:
- (i) in the case of any offer of a new MI WHQA product, service, facility or Associated Facility, at least three (3) months and five (5) working days in advance of it being made available;

- (ii) in the case of any change to an existing MI WHQA product, service, facility or Associated Facility, at least three (3) months and five (5) working days in advance of it being made available;
- (iii) as may otherwise be required by ComReg.

PART IV – MAINTENANCE OF OBLIGATIONS, WITHDRAWAL OF OBLIGATIONS, OPERATION AND EFFECTIVE DATE (SECTIONS 21 TO 26 OF THE DECISION INSTRUMENT)

21. STATUTORY POWERS NOT AFFECTED

21.1 Nothing in this Decision Instrument shall operate to limit ComReg in the exercise and performance of its statutory powers or duties conferred on it under any primary or secondary legislation (in force prior to or after the Effective Date of this Decision Instrument).

22. “SUNSET” PROVISION IN RESPECT OF SPECIFIC ELEMENTS OF THE LOW BANDWIDTH TI WHQA MARKET

22.1 In respect of specific elements of the Low Bandwidth TI WHQA Market, namely Analogue Leased Lines, Digital Leased Lines and Channelised E1 (2MB) Access, the obligation imposed by the first sentence of Section 6.2(iii) of the Decision Instrument contained in Appendix A to ComReg Decision D06/08 shall continue in force for a period of six (6) months from the Effective Date.

22.2 Pursuant to Regulations 8 and 12 of the Access Regulations, Eircom shall not withdraw access to Analogue Leased Lines, Digital Leased Lines and Channelised E1 (2MB) Access in the Low Bandwidth TI WHQA Market to which access was previously granted pursuant to or consistent with an obligation imposed by ComReg Decision D06/08 (as amended), or in respect of which access has been sought prior to the Effective Date of this Decision. This obligation is withdrawn with effect from six (6) months from the Effective Date.

22.3 Access to Analogue Leased Lines, Digital Leased Lines and Channelised E1 (2MB) Access in the Low Bandwidth TI WHQA Market provided by Eircom to any Undertaking pursuant to the obligations contained in Sections 22.1 and/or 22.2 above, shall be provided at prices no higher than those prevailing for such products, services, facilities or Associated Facilities on the Effective Date for the duration of the six (6) month period.

23. “SUNSET” PROVISION IN RESPECT OF THE HIGH BANDWIDTH TI WHQA MARKET

23.1 In respect of the High Bandwidth TI WHQA Market, the obligation imposed by the first sentence of Section 6.2(iii) of the Decision Instrument contained in Appendix A to ComReg Decision D06/08 shall continue in force for a period of six (6) months from the Effective Date.

- 23.2 Pursuant to Regulations 8 and 12 of the Access Regulations, Eircom shall not withdraw access to any products, services, facilities or Associated Facilities in the High Bandwidth TI WHQA Market to which access was previously granted pursuant to or consistent with an obligation imposed by ComReg Decision D06/08 (as amended), or in respect of which access has been sought prior to the Effective Date of this Decision. This obligation is withdrawn with effect from six (6) months from the Effective Date.
- 23.3 Access to any products, services, facilities or Associated Facilities in the High Bandwidth TI WHQA Market provided by Eircom to any Undertaking pursuant to the obligations contained in Sections 23.1 and/or 23.2 above, shall be provided at prices no higher than those prevailing for such products, services, facilities or Associated Facilities on the Effective Date for the duration of the six (6) month period.

24. “SUNSET” PROVISION IN RESPECT OF THE ZONE A MI WHQA MARKETS

- 24.1 In respect of the Zone A MI WHQA Markets, the obligation imposed by the first sentence of Section 6.2(iii) of the Decision Instrument contained in Appendix A to ComReg Decision D06/08 shall continue in force for a period of twelve (12) months from the Effective Date.
- 24.2 Pursuant to Regulations 8 and 12 of the Access Regulations, Eircom shall not withdraw access to any products, services, facilities or Associated Facilities in the Zone A MI WHQA Markets to which access was previously granted pursuant to or consistent with an obligation imposed by ComReg Decision D06/08 (as amended), or in respect of which access has been sought prior to the effective date of this Decision. This obligation is withdrawn with effect from twelve (12) months from the Effective Date.
- 24.3 The obligation imposed by Section 6.2(i) of the Decision Instrument contained in Appendix A to ComReg Decision D06/08 shall apply to, and continue in force for a period of three (3) months from the Effective Date of this Decision Instrument in respect of the Zone A MI WHQA Markets.
- 24.4 Access to any products, services, facilities or Associated Facilities in the Zone A MI WHQA Markets provided by Eircom to any Undertaking pursuant to the obligations contained in Sections 24.1 and/or 24.2 and/or 24.3 above, shall be provided at prices no higher than those prevailing for such products, services, facilities or Associated Facilities on the Effective Date for the duration of the twelve (12) month period.

25. MAINTENANCE OF OBLIGATIONS

- 25.1 Unless expressly stated otherwise in this Decision Instrument, all obligations and requirements contained in Decision Notices and Directions made by ComReg, applying to Eircom, and in force immediately prior to the Effective Date of this Decision Instrument, continue in force and Eircom shall comply with the same.
- 25.2 For the avoidance of doubt, ComReg Decision D03/09 shall remain in full force and effect until further notice by ComReg.
- 25.3 For the avoidance of doubt, to the extent that there is any conflict between a Decision Instrument dated prior to the Effective Date and Eircom's obligations set out herein, it is the latter which shall prevail.
- 25.4 If any Section(s), clause(s), or provision(s), or portion(s) thereof, contained in this Decision Instrument is(are) found to be invalid or prohibited by the Constitution, by any other law or judged by a court to be unlawful, void or unenforceable, that(those) Section(s), clause(s), or provision(s), or portion(s) thereof shall, to the extent required, be severed from this Decision Instrument and rendered ineffective as far as possible without modifying the remaining Section(s), clause(s), or provision(s), or portion(s) thereof, of this Decision Instrument, and shall not in any way affect the validity or enforcement of this Decision Instrument or other Decision Instruments.

26. WITHDRAWAL OF SMP OBLIGATIONS

- 26.1 Pursuant to Regulations 8, 9, 10, 11, 12, 13 and 18 of the Access Regulations, the following Decision Instruments, and/or ComReg Documents and/or Decisions are hereby withdrawn at the Effective Date:
- (i) Save as provided for in Sections 22, 23, and 24 of this Decision Instrument, the Decision Instrument contained in Appendix A of ComReg Document No. 08/103, ComReg Decision D06/08 (including the obligation in respect of a margin squeeze);
 - (ii) The Decision Instrument contained in Appendix A of ComReg Document No. 10/12, ComReg Decision D02/10;
 - (iii) The Decision Instrument contained in Chapter 5 of ComReg Document No. 11/22, ComReg Decision D02/11;
 - (iv) The Decision Instrument contained in Chapter 8 of ComReg Document No. 12/03, ComReg Decision D02/12 (including the obligation in respect of a margin squeeze); and
 - (v) The Decision Instrument contained in Chapter 4 of ComReg Document No. 13/75, ComReg Decision D12/13.

- 26.2 For the avoidance of doubt, and as provided for in Section 19.4 of this Decision Instrument, Chapter 4 of ComReg Decision D02/12 and any further developments of the NGN Core Model contained in ComReg Decision D11/18, shall remain in force in so far as it relates to the NGN Core Network model.
- 26.3 For the avoidance of doubt, the Sections of Annex 4 of the Decision Instrument contained in ComReg Decision D05/11 titled “Metrics associated with Supply of Services”, “Metrics associated with Designation of Service Orders” and “Metrics associated with Repair of Services” are withdrawn and replaced in accordance with Sections 10.13 and 17.13 of this Decision Instrument.

27. EFFECTIVE DATE

- 27.1 The Effective Date of this Decision Instrument shall be the date of its notification to Eircom and it shall remain in force until further notice by ComReg.

GARRETT BLANEY

CHAIRPERSON

THE COMMISSION FOR COMMUNICATIONS REGULATION

THE 24 DAY OF JANUARY 2020

Annex 9 Practical Application of Remedies in the Zone B MI WHQA Markets

- A9.1 In order to assist understanding in the practical application of the Access remedies, ComReg has set out below an explanation of how these would operate in practice in the Zone B MI WHQA Markets in the context of the trunk-terminating boundary¹⁹²³ as described in Section 5. This is to allow Access Seekers fully understand the regulated services¹⁹²⁴ that may be available to them and for Eircom to understand the remit of its regulatory obligations in the Zone B MI WHQA Markets.
- A9.2 The purpose of this Section is to explain how ComReg envisages Eircom's obligations would apply in practice in order to allow Access Seekers gain access Zone B MI WHQA products and services (refer to Access remedies being imposed as outlined in Section 10.6 above).
- A9.3 Figure 95 below depicts a stylised Aggregation Region¹⁹²⁵ where the pair of Provider Edge ('PE') Nodes are directly connected to the Aggregation Nodes within the Aggregation region.

¹⁹²³ The demarcation of the trunk market is described as LL traffic transported between 93 of Eircom's 192 NGN WEIL compatible Aggregation Nodes. These are referred to as "Trunk Nodes" here. The remaining 99 Nodes are referred to as "Non-Trunk Nodes".

¹⁹²⁴ Including Related MI WHQA Elements.

¹⁹²⁵ '**Aggregation Region**' means a group of Aggregation Areas where each Aggregation Node is directly connected to a pair of Provider Edge ('PE') Nodes or equivalent (e.g. IP backbone nodes which are situated higher in the core network hierarchy to which every Aggregation Node within an Aggregation Region is connected).

'**Aggregation Node**' or '**AGG node**' means a network concentration point for Access Paths.

'**Access Path**' means the connection from the NTU/ONT in the End User's premises to the Point-of-Handover. The Points-of-Handover for physical unbundling are the MDF (for metallic) and the ODF (for fibre) in the Exchange, and the Point-of-Handover for non-physical unbundling (virtual access) is the Wholesale Ethernet Interconnection Link at the serving Aggregation Node for the End User i.e. at the MPoP;

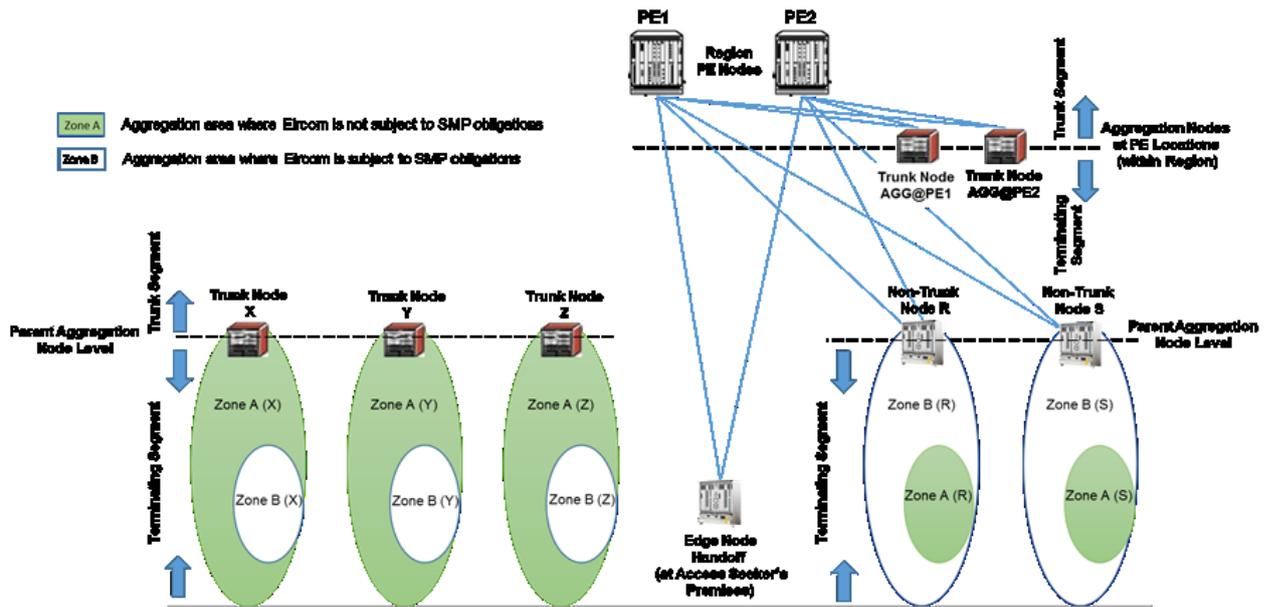
- A9.4 Provider Edge ('PE') Nodes¹⁹²⁶ are larger capacity nodes situated higher in the network hierarchy to which every Aggregation Node within an Aggregation Region is connected. There are two PE nodes in each Region. Aggregation Nodes co-located in Exchanges with PE nodes have been classified as "Trunk Nodes".
- A9.5 In addition, Aggregation Nodes are classified as Trunk Nodes where there are three or more Service Providers ('SPs')¹⁹²⁷ providing MI WHQA services that are present or sufficiently close to allow for interconnection.
- A9.6 Aggregation Nodes are classified as Non-Trunk Nodes where there are fewer than three SPs providing MI WHQA services that are present or nearby.
- A9.7 '**Zone A**' signifies those parts of an Aggregation Area¹⁹²⁸ where Eircom is not subject to SMP obligations. '**Zone B**' signifies those parts of the Aggregation Area where Eircom is subject to SMP obligations.

¹⁹²⁶ PE Nodes are always co-located with Aggregation Nodes in an Eircom Exchange. While Interconnection is not available at a PE Node, the traffic can be accessed via the Aggregation Node located in the same Exchange as the PE Node.

¹⁹²⁷ Including Eircom.

¹⁹²⁸ Aggregation Area means the geographical area served by an Aggregation Node. Note that the Aggregation Area is those Exchange area(s) as defined by Market 3a (Wholesale Local Access).

Figure 95: MI WHQA Markets – Aggregation Regions



A9.8 ComReg's position is that the scenarios where MI WHQA is subject to Access obligations are:

- (a) Traffic between access circuit in Zone B and the associated Trunk Node Interconnection (e.g. traffic between Zone B (X) and Interconnection from Trunk Node X, outlined in Figure 95 above); and
- (b) Traffic between access circuit in Zone B; and
 - (i) The associated Non-Trunk Node Interconnection (e.g. traffic between Zone B (S) and Interconnection from Non-Trunk Node S in Figure 95 above); or
 - (ii) The Trunk Node Interconnection at a PE Node location (e.g. traffic between Zone B (S) and Trunk Nodes AGG@PE1/AGG@PE2 in Figure 95 above); or
 - (iii) an Edge Node Handover¹⁹²⁹ Interconnection (e.g. traffic between Zone B (S) and Interconnection at an Edge Node Handover, also outlined in Figure 95 above).

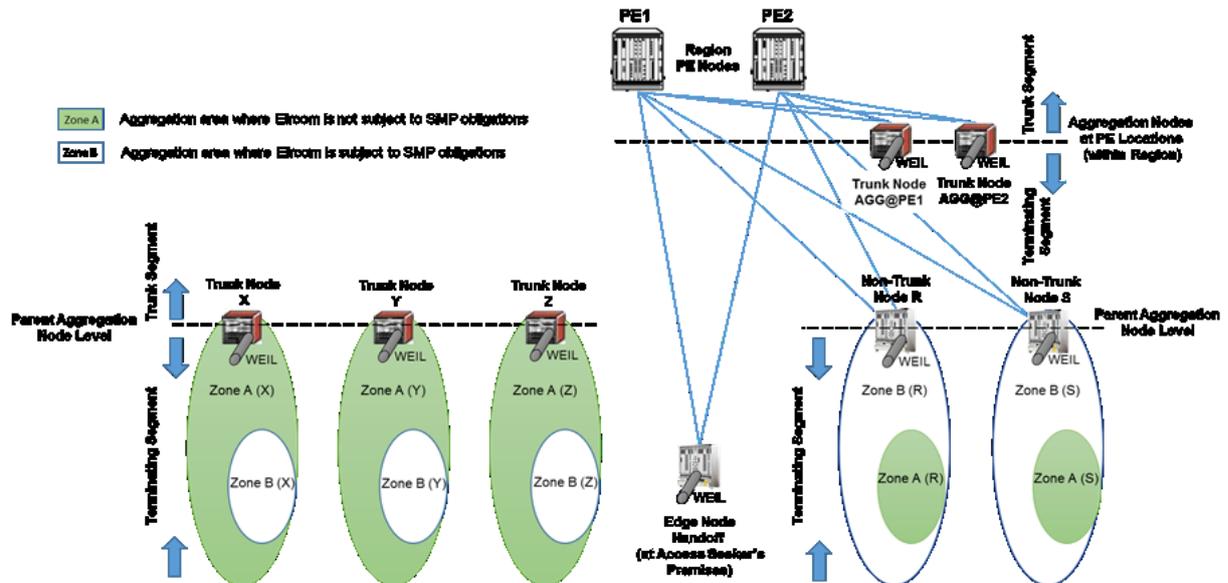
¹⁹²⁹ Edge Node Handover or ENH means the connection from the Eircom network through a dedicated Aggregation Node interface to the Access Seeker's equipment.

- A9.9 Interconnection (i.e. NGN Ethernet and WDM) in both the Zone A MI WHQA Markets and Zone B MI WHQA Markets is necessary for the provision of a regulated MI WHQA access product that terminates in the Zone B MI WHQA Markets. Co-Location and Co-Location Related Services, in all Eircom Exchanges, is required for the provision of a regulated MI WHQA access product that terminates in the Zone B MI WHQA Markets.
- A9.10 Eircom is being required to deliver MI WHQA services (e.g. data traffic) from locations in Zone B MI WHQA Markets to an appropriate Aggregation Node. Specifically traffic may be handed off at a Non Trunk Aggregation Node if the particular Access Seeker is present in that node; otherwise the traffic must be handed off at the Trunk Node co-located with a corresponding PE Node, alternatively the traffic may be handed off via Edge Node Handover at an Aggregation node at the operator's premises.
- A9.11 Regulated MI WHQA NGN Ethernet logical services will terminate on a WEIL at the appropriate Aggregation Node(s) as depicted in Figure 96 below.
- A9.12 Focusing on regulated MI WHQA NGN Ethernet services in the Aggregation Area associated with a Trunk Node X:
- (a) A regulated MI WHQA NGN Ethernet logical service from Zone A (X) WSEA is not required to be provided by Eircom;
 - (b) A regulated MI WHQA NGN Ethernet logical service from Zone B (X) WSEA to Trunk Node X, is required to be provided by Eircom, so that the service can terminate on a WEIL at Trunk Node X i.e. at the associated Aggregation Node serving the connected premises';
 - (c) A regulated MI WHQA NGN Ethernet logical service from Zone B (X) WSEA to an Edge Node (i.e. ENH at Access Seeker's premises) in the Aggregation Region is not required to be provided by Eircom.
- A9.13 From a pricing perspective, the regulated MI WHQA NGN Ethernet services available in Aggregation Area X (in Figure 96) will be 'Same Node'¹⁹³⁰.

¹⁹³⁰ 'Same Node' means that the WSEA and WEIL services are delivered from the same Aggregation Node.

Figure 96: MI WHQA Markets Aggregation Region - Regulated MI WHQA NGN Ethernet Logical Service

Regulated NGN Ethernet Logical Service		Interconnection										
		Zone A (X)	Zone B (X)	Zone A (Y)	Zone B (Y)	Zone A (R)	Zone B (R)	Zone A (S)	Zone B (S)	AGG@PE1	AGG@PE2	ENH
		WEIL	WEIL	WEIL	WEIL	WEIL	WEIL	WEIL	WEIL	WEIL	WEIL	WEIL
Access	Zone A (X) WSEA	No	No	No	No	No	No	No	No	No	No	No
	Zone B (X) WSEA	Yes	Yes	No	No	No	No	No	No	No	No	No
	Zone A (Y) WSEA	No	No	No	No	No	No	No	No	No	No	No
	Zone B (Y) WSEA	No	No	Yes	Yes	No	No	No	No	No	No	No
	Zone A (R) WSEA	No	No	No	No	No	No	No	No	No	No	No
	Zone B (R) WSEA	No	No	No	No	Yes	Yes	No	No	Yes	Yes	Yes
	Zone A (S) WSEA	No	No	No	No	No	No	No	No	No	No	No
Zone B (S) WSEA	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	



A9.14 Focusing on MI WHQA NGN Ethernet services required to be provided by Eircom in the Aggregation Area associated with Non-Trunk Node R:

- (a) A regulated MI WHQA NGN Ethernet logical service from Zone A (R) WSEA is not required to be provided by Eircom;
- (b) An Access Seeker must have the ability to connect an access circuit in Zone B (where Eircom is subject to SMP obligations) to an Interconnection circuit. A MI WHQA NGN Ethernet logical service from Zone B (R) WSEA, is required to be provided by Eircom, and can terminate either on a WEIL at:
- (c) A MI WHQA NGN Ethernet logical service, required to be provided by Eircom, from Zone B (R) WSEA can terminate on an Edge Node (i.e. ENH at Access Seeker's premises) within the Aggregation region.

A9.15 From a pricing perspective, the regulated NGN Ethernet services available in Aggregation Area R will be:

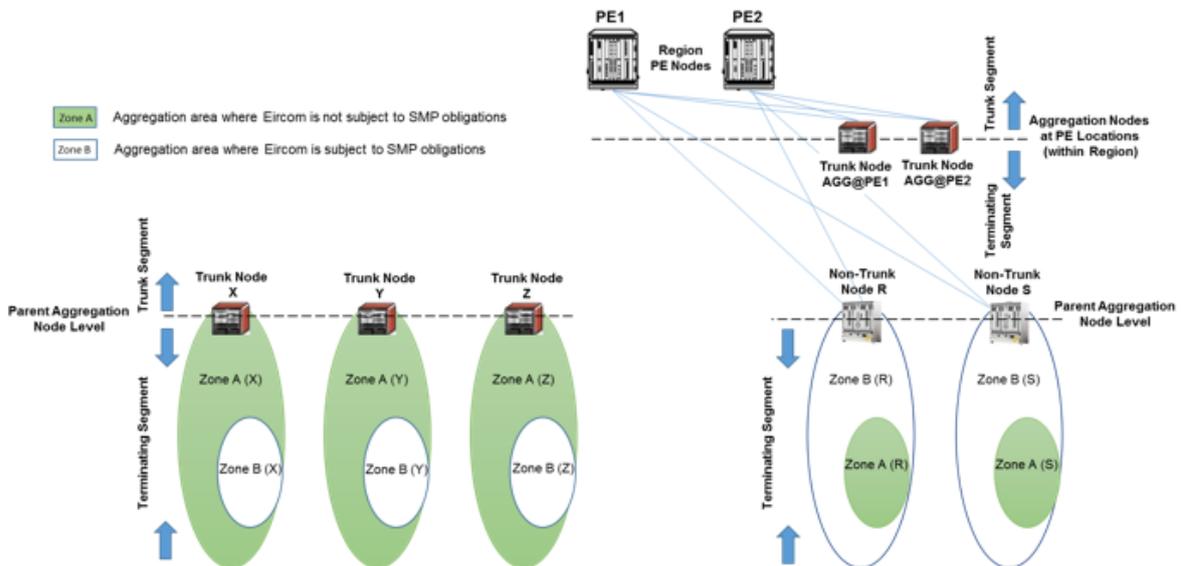
- (a) 'Same Node' i.e. connected premises parent Non-Trunks;

- (b) 'Same Region' i.e. Aggregation Node located at either of the corresponding Provider Edge Nodes within an Aggregation Region; and
- (c) 'ENH Same Region' i.e. Edge Node Handover at Access Seekers premises within an Aggregation Region.

A9.16 MI WHQA WDM services required to be provided by Eircom will terminate at the appropriate Aggregation Node(s) as depicted in Figure 97 below.

Figure 97: MI WHQA Markets Aggregations Region – Regulated MI WHQA WDM Service¹⁹³¹

Regulated WDM Service		WDM Interconnect									
		Zone A (X)	Zone B (X)	Zone A (Y)	Zone B (Y)	Zone A (R)	Zone B (R)	Zone A (S)	Zone B (S)	PE1 Exchange	PE2 Exchange
Access	Zone A (X) WDM access end	No	No	No	No	No	No	No	No	No	No
	Zone B (X) WDM access end	Yes	Yes	No	No						
	Zone A (Y) WDM access end	No	No	No	No	No	No	No	No	No	No
	Zone B (Y) WDM access end	No	No	Yes	Yes	No	No	No	No	No	No
	Zone A (R) WDM access end	No	No	No	No	No	No	No	No	No	No
	Zone B (R) WDM access end	No	No	No	No	Yes	Yes	No	No	Yes	Yes
	Zone A (S) WDM access end	No	No	No	No	No	No	No	No	No	No
	Zone B (S) WDM access end	No	No	No	No	No	No	Yes	Yes	Yes	Yes



A9.17 Focusing on MI WHQA WDM services, required to be provided by Eircom, in the Aggregation Area associated with Trunk Node X:

- (a) A regulated MI WHQA WDM service from Zone A (X) is not required to be provided by Eircom;

¹⁹³¹ Paragraph 9.64(b)(ii) of the 2018 Further Consultation: “WDM Interconnection Services (CSH or ISH); and which, in turn, may require access to: a) Co-Location, Co-Location Resource Sharing, Co-Location Rack Interconnection and Shared Services within or between Co-Location Racks”

- (b) A regulated MI WHQA WDM service from Zone B (X) can terminate as a WDM Interconnection in Zone A (X) or Zone B (X).
- A9.18 Focusing on MI WHQA WDM services, required to be provided by Eircom, in the Aggregation Area associated with Non-Trunk Node R:
- (a) A regulated MI WHQA WDM service from Zone A (R) is not required to be provided by Eircom;
- (b) A MI WHQA WDM service from Zone B (R), required to be provided by Eircom, can terminate at a WDM Interconnection associated with Non-Trunk Node R or at a WDM Interconnect associated with either of the two PE Exchange locations.
- A9.19 Eircom's NGN Ethernet and WDM network architectures are different and are not exact overlays on each other. The WDM network is used to provide the high capacity central core and the Ethernet network elements (Core/Provider Edge Nodes, and Aggregation Nodes) are usually connected via the WDM core network. There may be some Nodes connected using native Ethernet connections, particularly to sub-tended Nodes where WDM deployment may not be commercially justified. The Ethernet network is effectively a secondary network which "is built upon" the primary WDM network. ComReg position is that the NGN Ethernet Aggregation Region boundaries (refer to Table 24) apply for all MI WHQA services (where this is applicable for services which must be handed over at the PE Node Exchanges and where there is no regulatory requirement to convey traffic beyond such boundaries). To use a different boundary for each service would introduce undue complications into the operation of the proposed WDM service for little benefit to either SPs or End Users. In ComReg's opinion, this approach of using the NGN Ethernet architecture as defining regions and Exchange areas simplifies the management of MI WHQA products, services and facilities for Eircom.
- A9.20 To summarise, Eircom is being required to provide Interconnection Services at the 93 Trunk Node Exchanges in order to hand-over MI WHQA services which terminate in the Zone B areas of each individual Trunk Node aggregation Area. For MI services which terminate in the Zone B areas of the remaining 99 Non-Trunk Nodes, Eircom will be obliged to hand over this traffic either at (as requested by the Access Seeker):
- (a) the respective Non-Trunk node; or
- (b) either of the Aggregation nodes located at the PE Node Exchanges within the Aggregation region ; or
- (c) an Edge Node Handover within the Aggregation Region.

A9.21 The reasoning supporting this proposed approach is that every Aggregation Node has a physical or logical connection to both PE Nodes in its Aggregation Region. Eircom is therefore likely to have existing WDM/Ethernet transmission capacity between these nodes or to be able to more easily expand capacity as required. It would be extremely difficult to nominate any other Nodes for handover within the same Aggregation Region based on simple geographic location or distance criteria. Such Nodes could be subject to capacity constraints due to pre-existing fibre route designs and capacity/transmission arrangements which would severely hamper the introduction of new and potentially large sources and sinks of ingress and egress traffic.

A9.22 Table 24 below summarises the twelve NGN Ethernet regions and the locations of each PE Node.

Table 24: WHQA Market - Twelve NGN Ethernet Aggregation Regions
(Based on the May 2019 NGN Ethernet Rollout Plan
WEIL-WSEA_NGN_Node_Rollout_plan_V12.6_Final for Sept-19.xls)

ComReg Region Number	Eircom Region Reference	PE Node 1 Location	PE Node 2 Location
1	Urban A	Beggars Bush (BBH)	Priory Park (PRP)
2	Urban B	Blanchardstown (BDT)	Fingalas (FNG)
3	Urban C	Belcamp (BLP)	Summerhill (SRL)
4	Urban D	Nangor Road, Clondalkin (CLD)	Dolphins Barn (DBN)
5	Urban E	Churchfield (CHF)	Quaker Road (QKR)
	Provincial J	Churchfield (CHF)	Quaker Road (QKR)
6	Urban F	Limerick (LMK)	Mallow (MLW)
	Provincial K	Limerick (LMK)	Mallow (MLW)
7	Provincial N	Limerick (LMK)	Portlaoise (PGS)
8	Urban G	Mervue (MVW)	Shantalla (SLA)
9	Urban H	Priory Park (PRP)	Waterford (WTD)
	Provincial O	Priory Park (PRP)	Waterford (WTD)
	Provincial P	Priory Park (PRP)	Waterford (WTD)
10	Provincial I	Bridgend (BGE)	Rathedmond, Sligo (RTD)
11	Provincial L	Drogheda (DBC)	Mullingar (MGR)
12	Provincial Z	Roslevin, Athlone (RSL)	Rathedmond, Sligo (RTD)

100G WEIL Data Centre Handoff (DCH)

A9.23 At a ComReg hosted workshop on the Practical Application of Remedies in the Zone B Modern Interface ('MI') WHQA Market¹⁹³² (12 September 2018), an operator enquired as to how the 100G WEIL DCH are classified. The following paragraph provides clarity on this issue.

¹⁹³² Workshop on the Practical Application of Remedies in the Zone B Modern Interface ('MI') WHQA Market, Document Number 18/98, 21 November 2018.

- A9.24 Currently Eircom provide 100G WEIL DCH at nodes at two locations, which are:
- (a) Clonshaugh Data Centre (CSG): This node is designated as a 'Trunk' Node hence the rules which apply to Trunk Nodes apply to Clonshaugh Data Centre (CSG), i.e. traffic originating outside CSG and terminating on CSG is not regulated.
 - (b) Telecity Data Centre Citywest (6CR): This node is effectively an Edge Node Handover in Urban D (ComReg Region 4). Hence, all traffic from 'Non-Trunk' Zones B Region '4' terminating on 6CR is regulated.

Annex 10 List of Eircom Trunk and Non-Trunk Nodes

Table 25: List of Eircom Trunk Nodes

No.	Eircom Trunk Node	Code	No.	Eircom Trunk Node	Code
1	ARDEE	ARD	48	LETTERKENNY	LKY
2	BALBRIGGAN	BRN	49	LIMERICK	LMK
3	BALLINA	BLA	50	LONGFORD	LOD
4	BALLINASLOE	BSE	51	LUCAN BALLYDOWD	LCN
5	BALLINCOLLIG	BNC	52	MALAHIDE	MHZ
6	BEGGARS BUSH	BBH	53	MALLOW	MLW
7	BLANCHARDSTOWN	BDT	54	MERRION	MER
8	BRAY	BRI	55	MERVUE	MVW
9	BRIDGEND	BGE	56	MULLINGAR	MGR
10	CAHERDAVIN	CHD	57	NAAS	NAS
11	CARLOW	CRW	58	NANGOR ROAD	CLD
12	CASTLETROY	CTY	59	NAVAN	AUV
13	CHURCHFIELD	CHF	60	NORTH MAIN	NMN
14	CITYWEST	CWT	61	NUTLEY	NUT
15	CITYWEST HOSTING CENTRE	CWM	62	PARK WEST	PKW
16	CK-ON-SHANNON	CKN	63	PHIBSBORO	PHB
17	CLANE	CAE	64	PORTLADISE	PGS
18	CLONEE	CEE	65	PORTMARNOCK	PMK
19	CLONMEL	CLM	66	PRIORY PARK	PRP
20	CLONSHAUGH	CSG	67	QUAKER ROAD	QKR
21	CLONTARF	CLT	68	RATHEDMOND	RTD
22	COOLOCK	CLK	69	RATHLUIRC	RLC
23	CORK CENTRAL	CKC	70	ROCHESTOWN	ROC
24	CROWN ALLEY	CRZ	71	ROSCOMMON	RCM
25	CRUMLIN	CRL	72	ROSLEVIN	RSL
26	CUSTOMS HS DOCKS	CUS	73	RUSH	RUS
27	DENNEHYS CROSS	DYX	74	SANDYFORD	SND
28	DOLPHINS BARN	DBN	75	SANDYFORD AEH	SNH
29	DONABATE	DBT	76	SANTRY	SAN
30	DOORADOYLE	LKD	77	SHANNON TOWN	SHN
31	DOUGLAS	DGS	78	SHANTALLA	SLA
32	DROGHEDA	DBC	79	SHIP STREET	SHP
33	DROICHEAD NJA	DNU	80	SKERRIES	SKS
34	DUNBOYNE	DEZ	81	SUMMERHILL	SRL
35	DUNDALK	DDK	82	SUTTON	STN
36	DUNLAGHAIRE	DLA	83	SWORDS	SRD
37	EASTPOINT	EPT	84	TALLAGHT	TLH
38	ENNISCORTHY	ETY	85	THURLES	THS
39	FINGLAS	FNG	86	TRALEE	TWV
40	FOXROCK	FOX	87	TRIM	TRM
41	GALWAY	GAL	88	TULLAMORE	TLM
42	GREYSTONES	GRS	89	WALKINSTOWN	WAL
43	HETTYFIELD	HYD	90	WATERFORD	WTD
44	HEUSTON SOUTH QUARTER	HSQ	91	WELLINGTON ROAD	WRD
45	KILCOCK	KOK	92	WEXFORD	WXD
46	KILKENNY	KNY	93	WHITEHALL	WHI
47	KILLARNEY	KLN	Blank	Blank	Blank

Table 26: List of Eircom Non-trunk Nodes

No.	Eircom Non-trunk Node	Code	No.	Eircom Non-trunk Node	Code
1	ASHBOURNE	ABE	51	GRANARD	GNA
2	ARKLOW	AKW	52	GORT	GRT
3	ATHENRY	ANR	53	GOREY	GRY
4	ASKEATON	ASN	54	KNOCKBOY	KBY
5	ATHLUNKARD	ATD	55	KILDARE	KLE
6	ATHY	ATY	56	KENMARE	KME
7	BLARNEY	BAI	57	KILLORGLIN	KRG
8	BANTRY	BAY	58	KILRUSH	KRH
9	BIRR	BIR	59	KINSALE	KSL
10	BALLYBODEN	BLB	60	KANTURK	KTK
11	BELCAMP	BLP	61	LITTLE ISLAND	LED
12	DUNDALK BLACKROCK	BLR	62	LEIXLIP	LEX
13	BANDON	BND	63	LOUGHREA	LGA
14	BALLYBOFEY	BOF	64	LISTOWEL	LIS
15	BALLINROBE	BRE	65	MAHON	MAH
16	BLESSINGTON	BSN	66	MUINE BHEAG	MBG
17	BETTYSTOWN	BSZ	67	MIDLETON	MDN
18	BALLYMOTE	BTE	68	MONAGHAN	MGN
19	BUNCRANA	BUA	69	MAYNOOTH	MNT
20	CABRA	CAB	70	MOATE	MOT
21	CHARLESTOWN	CAL	71	MACROOM	MRM
22	CAVAN	CAV	72	NEWTOWNMTKENNEDY	NMK
23	CASTLEBAR	CBR	73	NENAGH	NNH
24	CARRICKMACROSS	CCS	74	NEW ROSS	NRS
25	CARNDONAGH	CDH	75	NEWLANDS CROSS	NWL
26	CLIFDEN	CDN	76	NEWCASTLE WEST	NWT
27	CELBRIDGE	CEL	77	ORANMORE	OME
28	CARRIGALINE	CGI	78	PALMERSTOWN	PAL
29	CARRIGTWOHILL	CHT	79	PORTARLINGTON	PAN
30	CLONAKILTY	CKY	80	RATHCOOLE	RCL
31	CLAREMORRIS	CMS	81	RATHMORE	RME
32	CARRICK-ON-SUIR	COS	82	RATHMINES	RMS
33	COBH	COV	83	ROSCREA	RSA
34	CASTLEREA	CRE	84	ROBERTSTOWN	RSN
35	CASHEL	CSL	85	RATOATH	RTH
36	COSTELLO	CSO	86	SKIBBEREEN	SKB
37	CEANANNUS	CSR	87	SHANKILL	SKL
38	DUNDRUM	DDM	88	TARA	TAA
39	DONEGAL	DGL	89	TULLOW	TLW
40	DUNGLOE	DLO	90	TIPPERARY	TPR
41	DUNSHAUGHLIN	DSN	91	TERENURE	TRE
42	DUNGARVAN	DVA	92	TRAMORE	TRR
43	EDENDERRY	EDY	93	TUAM	TUM
44	ENFIELD	EFD	94	WATERFORD TYCOR	TYC
45	ELPHIN	EFN	95	VIRGINIA	VGA
46	ENNIS	ENS	96	WICKLOW	WLW
47	ENNISTYMON	ETN	97	WESTPORT	WST
48	FERRYBANK	FBK	98	WELLINGTON BRIDGE	WTB
49	FERMOY	FMY	99	YOUGHAL	YHL
50	GLANMIRE	GMR	Blank	Blank	Blank

Annex 11 Respondents' Submissions

- A11.1 A non-confidential copy of Respondents' Submissions to the 2018 Further Consultation has been published with this Decision and is entitled "WHQA Market Analysis - Respondents Submissions to the 2018 Further Consultation, ComReg Document 20/06d".

Annex 12 CCPC Response

A12.1 A copy of the CCPC's response dated 25th October 2019 is set out below.

Annex 13 European Commission's Response to ComReg's Notified Draft Measures and ComReg's Consideration Thereof

A.13.1 Overview

- A13.1 This annex includes a copy of the European Commission's response (Case IE/2019/2214) to ComReg's Notified Draft Measures.
- A13.2 Following receipt of the EC's response, ComReg has taken utmost account of the EC's comments on ComReg's WHQA market analysis and these considerations are outlined below.

A.13.2 European Commission's Response



EUROPEAN COMMISSION

Brussels, 3.12.2019
C(2019)8790 final

Commission for Communications
(ComReg)
One Dockland Central, Guild Street
D01 E4X0 Dublin 1
Ireland

For the attention of:
Mr Garrett Blaney
Chairperson of the Commission

Fax: +353 1 804 9665

Subject: Case IE/2019/2214: Wholesale high-quality access provided at a fixed location in Ireland – partial deregulation (market 4)

Commission comments pursuant to Article 7(3) of Directive 2002/21/EC

Dear Mr Blaney,

1. PROCEDURE

On 5 November 2019, the Commission registered a notification from the Irish national regulatory authority (NRA), the Commission for Communications (ComReg)¹, concerning Ireland's market for wholesale high-quality access (WHQA) provided at a fixed location².

The national consultation³ ran from 22 February to 27 April 2018.

The Commission sent a request for information⁴ to ComReg on 14 November 2019 and received a reply on 19 November 2019.

¹ Under Article 7 of Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) (OJ L 108, 24.4.2002, p. 33), as amended.

² Corresponding to market 4 in Commission Recommendation 2014/710/EU of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with the Framework Directive (2014 Recommendation on Relevant Markets) (OJ L 295, 11.10.2014, p. 79).

³ In accordance with Article 6 of the Framework Directive.

⁴ In accordance with Article 5(2) of the Framework Directive.

Under Article 7(3) of the Framework Directive, NRAs, the Body of European Regulators for Electronic Communications (BEREC) and the Commission may make comments on notified draft measures to the NRA concerned.

2. DESCRIPTION OF DRAFT MEASURE

The notified draft measure would deregulate market 4 in those parts of Ireland where, following a nationwide geographical mapping exercise, effective competition is found to exist for WHQA provided at a fixed location.

2.1. Background

Ireland notified the wholesale markets for trunk⁵ and terminating segments of leased lines⁶ previously and the Commission assessed them under case IE/2008/0791⁷. ComReg's market analysis considered trunk and terminating segments as separate product markets.

Based on the three-criteria test, ComReg concluded that the **wholesale market for trunk segments of leased lines** did not present high and non-transitory barriers to entry, tended to effective competition⁸ and so was no longer susceptible to *ex ante* regulation.

However, it defined the market for **wholesale terminating segments of leased lines** as 'national' and designated Eircom Limited (Eir) as having significant market power (SMP). On the basis of that finding, it imposed the following regulatory obligations on Eir:

- access;
- non-discrimination;
- transparency;
- accounting separation; and
- price control and cost accounting.

The Commission commented on the remedies concerning wholesale leased line (WLL) products and pointed out the need to notify it of any draft measures resulting from the further consultations planned by ComReg on the cost control obligation for such products.

The final measure relating to case IE/2008/0791 was adopted on 22 December 2008, so a subsequent market analysis was due in December 2011. As no new market analysis had been carried out by then, on 6 October 2015 the Commission asked for justifications for the delay and a timetable for the outstanding notifications⁹. After considering the Irish

⁵ Corresponding to market 14 in Commission Recommendation 2003/311/EC of 11 February 2003 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with the Framework Directive (2003 Recommendation on Relevant Markets) (OJ L 114, 8.5.2003, p. 45).

⁶ Corresponding to market 6 in Commission Recommendation 2007/879/EC of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with the Framework Directive (2007 Recommendation on Relevant Markets) (OJ L 344, 28.12.2007, p. 65).

⁷ C(2008) 5686.

⁸ In this respect, ComReg notes that although Eir's market share remained high, at just under 50% by revenue, it had fallen over the previous 2 years. ComReg also took note of the increasing countervailing buyer power (due to the size of the undertakings involved and the increasing possibility of self-supply).

⁹ Ref. 7946/15/CNCT in the EU Pilot system (Ares(2015) 4112123).

authorities' response and position, and in view of the persistent delays in carrying out the market review, it sent a letter of formal notice to Ireland on 5 October 2017, in accordance with the procedure set out in Treaty on the Functioning of the European Union¹⁰. In response, the Irish authorities communicated both formally and informally several dates, and then further postponements, for the completion of the market analysis. Consequently, the market review for the notified draft measure comes approximately 8 years after its initial due date.

2.2. Market definition

The notified draft measure would define six separate WHQA markets, including two national markets for traditional interfaces and four sub-national markets for modern interfaces, as follows:

National markets for traditional interfaces

- national market for low-bandwidth traditional interface WHQA consisting of wired analogue and digital time division multiplexing (TDM) WLLs with bandwidths under 2 Mb/s. There are six competing undertakings currently active in this market, but Eir holds a market share of approximately 80%. ComReg therefore designates Eir as having SMP and proposes to maintain regulation;
- national market for high-bandwidth traditional interface WHQA consisting of wired TDM WLLs with bandwidths above 2 Mb/s. There are seven competing undertakings currently active in this market and Eir holds a smaller market share, of approximately 20%, with BT holding slightly over 50%. ComReg's analysis found that this market is in terminal decline, with active circuits having more than halved between 2015 and 2018. Consequently, it considered that the market is losing relevance and is not worthy of monopolisation. On the basis of this and the competition in the market, it does not identify an SMP operator and instead proposes to withdraw regulation, with a 6-month sunset period.

The national markets for traditional interfaces exclude:

- wholesale broadband products provided over FTTx networks;
- dark-fibre products; and
- any products with a modern interface covered by sub-national markets (see below).

Both the national and sub-national markets also exclude all wireless products¹¹.

Sub-national markets for modern interfaces

The sub-national markets all cover the same modern interface WHQA products, i.e. all wired ethernet, ethernet final mile (EFM), wavelength division multiplexed (WDM) and other modern interface leased lines of any bandwidth. They exclude wireless and dark-fibre products. The key delineation between them is geographical – they are based

¹⁰ SG(2018) D/20283C(2018)7110.

¹¹ ComReg explains this approach on the basis of perceived quality differences reflected in consumer trends. Data indicate that insufficient numbers of end-users, and access-seekers using LLs for network inputs, are substituting wired for WLLs. In its response to the request for information, ComReg highlights that only one wireless point-to-point (P2P) radio links circuit was purchased in 2018 as a network input.

on areas grouping workplace zones¹² (WPZs) that exhibit conditions of competition that differ sufficiently from those in the other markets identified.

The criteria used by ComReg to define the sub-national markets include an assessment of whether 75% of premises currently connected with leased lines in the WPZs are within 50 m of two or more alternative (non-Eir) networks.

The subnational markets are:

- **area 1** – this covers 1,582 WPZs and has 14 competing undertakings active on it and 4,950 premises connected to leased lines. It has at least three competing infrastructure providers (including Eir) within 50 m of existing connected premises at the 75% threshold, which suggests that there are no barriers to entry. Eir has a market share of under 40%. ComReg considers this market to be effectively competitive and consequently proposes to deregulate it, with a 12-month sunset period for the withdrawal of regulation;
- **area 2** – this covers 1,998 WPZs and has 14 competing undertakings currently active on it and 3,523 premises connected to leased lines. It has fewer than three competing infrastructure providers (including Eir) within 50 m of existing connected premises at the 75% threshold. This suggests that barriers to entry (and expansion) are higher than in area 1. Eir has a market share of over 60% and alternative operators have market shares of between 0% and 15% each. ComReg considers that the market is not effectively competitive, and designates Eir as having SMP;
- **area 3** – this covers 1,191 WPZs and there are at least two alternative networks (other than Eir) present on it. However, there are no currently connected leased line premises. No SMP operator is therefore identified and ComReg proposes to withdraw regulation in this market, with a 12-month sunset period for the withdrawal of regulation; and
- **area 4** – this covers 2,448 WPZs and has fewer than two alternative networks (other than Eir). There are no premises currently connected with leased lines. ComReg considers that this market is not effectively competitive and that regulation is warranted. It designates Eir as having SMP.

2.3. Finding of significant market power

ComReg designated Eir as having SMP in areas 2 and 4 (uncompetitive areas)¹³, based on the following key criteria:

- *existing competition* – ComReg examined factors such as market share, indirect constraints, vertical integration, relative strength of competitors, barriers to expansion, and pricing behaviour;

¹² WPZ is an administrative unit created by Ireland's Central Statistics Office and is designed to capture an area's 'daytime population', i.e. everybody who indicated they work or study in the area, along with people who do not work or study (and so are there during the day). There are 7,219 WPZs in Ireland.

¹³ For the purposes of this letter:

- 'competitive areas' refers collectively to the national market for high-bandwidth traditional interface WHQA and the sub-national markets for modern interface WHQA, areas 1 and 3, which will be deregulated; and
- 'uncompetitive areas' refers collectively to the national market for low-bandwidth traditional interface WHQA and the sub-national markets for modern interface WHQA, areas 2 and 4, which will remain regulated.

- *potential competition* – ComReg examined factors such as the overall size of undertakings, control of infrastructure not easily duplicated, barriers to market entry, product/services diversification, economies of scale/scope and the overall strength of potential competitors; and
- *strength of countervailing buyer power* – ComReg assessed the impact of purchasers on the competitive behaviour of providers.

ComReg considers that areas 1 and 3 are effectively competitive and proposes to withdraw regulation.

2.4. Regulatory remedies

In the uncompetitive areas, where it considers that Eir has SMP, ComReg proposes the following regulation:

Low-bandwidth traditional interface WHQA – national market

- the proposed regulatory obligations on Eir are:
 - access;
 - non-discrimination;
 - transparency;
 - price control and cost accounting; and
 - accounting separation.

ComReg is also proposing to remove certain obligations, including obligations to provide certain (legacy) access products.

With regard to price control, ComReg proposes to maintain the price obligations of cost orientation, including cost accounting. However, the margin-squeeze test obligations, currently applied between end-to-end WLL prices and wholesale partial private circuits end user links (PPC EUL) products, will be withdrawn with immediate effect from the entry into force of the notified draft measure.

Sub-national markets for modern interfaces in areas 2 and 4

- the proposed regulatory obligations on Eir are:
 - access;
 - non-discrimination;
 - transparency;
 - price control and cost accounting; and
 - accounting separation.

ComReg has also proposed to impose obligations governing statements of compliance with the above obligations.

With regard to price control, ComReg proposes to maintain the cost orientation, with the exception of the margin-squeeze test, which will be withdrawn (see above). In particular, the following proposed remedies will apply to modern interfaces in uncompetitive areas:

- the price control obligation of cost orientation, including cost accounting, will continue to apply to products, services and associated facilities, including terminating segments and interconnect links;
- cost orientation is to be based on a BU-LRAIC plus cost modelling approach; and
- with respect to terminating segments and interconnected links, Eir will submit a proposal with updated cost-oriented prices within 4 months of the adoption of the notified draft measure.

3. COMMENTS

The Commission has examined the notification and the additional information provided by ComReg and has the following comment:¹⁴

Need for forward-looking and dynamic market analysis

When delineating the exact geographical boundaries of a sub-national market, account has to be taken of whether the SMP operator acts uniformly across its network area or whether it faces appreciably different conditions of competition to a degree that its activities are constrained in some areas but not in others¹⁵.

The Commission takes note of ComReg's approach in defining four separate sub-national geographical markets for modern interfaces based on ComReg's criteria. It further notes that, while the criteria might be considered rather conservative¹⁶, variations of the selected threshold of 75% of premises connected to two or more networks do not appear to have a significant impact on the number of WPZs belonging to either the competitive or uncompetitive areas.

Nevertheless, the Commission strongly urges ComReg to undertake the next market review in good time, within the time limit, to avoid delays in its adoption, as have affected the current review. It also urges ComReg, in its next market review, to review the methodological approach to the choice of criteria and thresholds, to better reflect NRAs' regulatory practice, the common position of BEREC, and technological and market developments. This should ensure the timely, accurate and relevant delineation of sub-national markets (i.e. competitive and uncompetitive areas) and lead to further deregulation, if the current trends continue in the near future.

Under Article 7(7) of the Framework Directive, ComReg must take utmost account of the comments of other NRAs, BEREC and the Commission, and may adopt the resulting draft measure. Where it does so, it must communicate it to the Commission.

¹⁴ In accordance with Article 7(3) of the Framework Directive.

¹⁵ Commission staff working document accompanying the *Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services* (SWD(2018) 124, 27.4.2018).

¹⁶ The *BEREC report on the application of the common position on geographic aspects of market analysis* (BoR (18) 213) found that two main indicators are used to aggregate geographical units:

- the number of competitors; and
- the market share of the incumbent operator.

The former was combined with certain conditions in some cases, e.g. where the operator has a certain market share or coverage – while this 'significance threshold' was set at 10% or 15% for market share, for coverage it varied more widely between 20% and 75%. See also Table 10 in BoR (18) 213 (p. 18).

The Commission's position on this notification is without prejudice to any position it may take on other notified draft measures.

Pursuant to point 15 of Recommendation 2008/850/EC¹⁷, the Commission will publish this document on its website. If ComReg considers that, in accordance with EU and/or national rules on business confidentiality, it contains confidential information that you wish to have deleted prior to publication, please inform the Commission¹⁸ within 3 working days of receipt and give reasons for any such request¹⁹.

Yours sincerely,

For the Commission
Roberto Viola
Director-General

CERTIFIED COPY
For the Secretary-General,

Jordi AYET PUIGARNAU
Director of the Registry
EUROPEAN COMMISSION

¹⁷ Commission Recommendation 2008/850/EC of 15 October 2008 on notifications, time limits and consultations provided for in Article 7 of Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (OJ L 301, 12.11.2008, p. 23).

¹⁸ By email to CNECT-ARTICLE7@ec.europa.eu.

¹⁹ The Commission may inform the public of the result of its assessment before the end of this 3-day period.

A.13.3 ComReg's Consideration of the European Commission's Response

A13.3 ComReg has taken utmost account of the EC's comments, as set out below:

A.13.3.1 Need for forward-looking and dynamic market analysis

A13.4 In relation to the market analysis, the EC noted that:

"When delineating the exact geographical boundaries of a sub-national market, account has to be taken of whether the SMP operator acts uniformly across its network area or whether it faces appreciably different conditions of competition to a degree that its activities are constrained in some areas but not in others.

The Commission takes note of ComReg's approach in defining four separate sub-national geographical markets for modern interfaces based on ComReg's criteria. It further notes that, while the criteria might be considered rather conservative, variations of the selected threshold of 75% of premises connected to two or more networks do not appear to have a significant impact on the number of WPZs belonging to either the competitive or uncompetitive areas.

Nevertheless, the Commission strongly urges ComReg to undertake the next market review in good time, within the time limit, to avoid delays in its adoption, as have affected the current review. It also urges ComReg, in its next market review, to review the methodological approach to the choice of criteria and thresholds, to better reflect NRAs' regulatory practice, the common position of BEREC, and technological and market developments. This should ensure the timely, accurate and relevant delineation of sub-national markets (i.e. competitive and uncompetitive areas) and lead to further deregulation, if the current trends continue in the near future."

A13.5 With regard to the geographic scope of the Relevant MI WHQA Markets (Section 5.7 of the Decision), ComReg outlines the rationale for selecting 75% as the threshold for premises as being connected to two or more alternative networks, having regard to Respondents' Submissions to the 2018 Further Consultation (Annex 1.5.7 paragraphs A1.283 to A1.298), as follows:

- (a) ComReg had considered using a lower (50%) or higher (90%) level. The higher level meant that any more than 1 customer site out of 10 that was outside the 50 metre distance criteria would result in the WPZ being considered as having low density AN infrastructure present; whereas the 50% level meant that half the customer sites located in a WPZ could have a limited choice of supplier for the provision of HQA services. ComReg considered that these values were therefore extremes on a continuum of possible choices; and
- (b) ComReg carried out a sensitivity analysis using a 65% and a 60% threshold. This resulted in 2,775 (+1.46%) and 2,781 (+1.68%) competitive WPZs, respectively. These thresholds would result in 5,070 (+2.4%) and 5,107 (+3.2%) connected premises falling in competitive WPZs. Therefore ComReg considers the threshold of 75% to be a reasonable and proportionate threshold level.

A13.6 With regard to completing the next market review within the time limit, and avoiding delays in its adoption, ComReg expects that the resources and the data quality issues which contributed towards the delay in the finalisation of this Decision should not impact on the timely review of the WHQA markets in the future. In this respect, ComReg notes that it is seeking, in collaboration with SPs, to improve the data gathering processes and the accuracy of information that is necessary for the conduct of market reviews and market monitoring. Additional resources have also been made available to market analysis functions.

A13.7 With regard to having a better reflection of NRAs' regulatory practice, the common position of BEREC, and technological and market developments in the methodological approach to the choice of criteria and thresholds, ComReg is always highly cognisant of the necessity to take utmost account of such issues as part of every market analysis that it carries out, including for this Decision. For example the 2018 BEREC Report on the application of the Common Position on geographic aspects of market analysis ('**2018 Common Position**')¹⁹³³ noted that:

¹⁹³³ BoR (18) 213 https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8308-berec-report-on-the-application-of-the-common-position-on-geographic-aspects-of-market-analysis

- (a) the coverage of alternative networks was the most important criteria when defining geographic markets for NRAs surveyed (Table 6). The threshold for the number of operators “*was often set at three (or equivalently two competitors in addition to the incumbent operator)*”.¹⁹³⁴ Thus, ComReg’s choice of 2 AN networks is in keeping with the 2018 Common Position; and
- (b) A range of thresholds are applied by NRAs under the ‘Competitors’ coverage’ criteria across Markets 3a (20-75%), 3b (30-75%) & 4 (50%). Under this criteria BEREC only received 1 response to their survey of NRAs for Market 4, a 50% figure which does not provide a significant source of practice to rely on.
- A13.8 In addition to this, in Annex 1.5.7, a comparison with the threshold used in Ofcom’s market analysis decision on the Business Connectivity Market /Market 4 (65%), published after the 2018 Common Position, has been made in this Decision.
- A13.9 Furthermore, as the 2018 Common Position states:
- “NRA’s have ended up with a range of outcomes, in terms of differentiating markets and remedies geographically, reflecting differences in national conditions.”*¹⁹³⁵
- A13.10 ComReg’s position is that this Decision has reflected the methodological approaches laid out in the 2018 Common Position but has been adopted to reflect the specifics of the national conditions in Ireland.

¹⁹³⁴ Page 18; the 2018 Common Position.

¹⁹³⁵ Page 22; the 2018 Common Position.

Annex 14 Correspondence with Stakeholders post the European Commission's Response

A14.1 Copy of email correspondence between BT and ComReg, from 5th to 27th December 2019:

-----Original Message-----

From [REDACTED]
Sent: 05 December 2019 17:19
To: Eric Tomkins [REDACTED] >; Tim Lynch [REDACTED]; Malachy Fox [REDACTED]
Cc: Donal Leavy [REDACTED]; [REDACTED]; XX MICHAEL CONNOLLY [REDACTED]
Subject: Leased Lines - Request for further transparency of the WPZs per area.

Eric,

Thank you for providing the high level Zone A and Zone B information. When only shared at such a high level, we are not afforded the detail/transparency needed to determine the correctness of the assumptions made; to test the new analysis; or to assess the impact on the market/our business. Detail is needed to assess the appropriateness of exercising our legal right to determine whether to appeal this proposed Decision. We are therefore asking ComReg to make available the WPZs in each of the areas described in the Tera flow diagram on page 273 of the notification of the Decision to the European Commission. I.e. Areas A1, A2, A3, A4, A5, B1 and B2.

We note that we are not asking for operator names and providing the zones in the area do not provide such a level of information, hence we do not consider this a confidentiality issue. We are surprised that such would be considered a matter of confidentiality given the basis of the work is to say operators are available to sell services in these areas. This makes no sense at all as there is absolutely no reason for operators to wish to be secretive here; on the contrary they should be very pleased to acquire the free publicity arising from ComReg's publications.

We would note that ComReg supplied this supporting data set alongside the last notification in 1828A CSA's by Category in April 2018.

Thank you
John

John O'Dwyer

Head of Regulation BT Ireland (RoI): BT Regulatory Affairs | tel: [REDACTED] email:
[REDACTED]

-----Original Message-----

From: [REDACTED]
Sent: 20 December 2019 17:34
To: Garrett Blaney [REDACTED]
Cc: Donal Leavy [REDACTED]; Eric Tomkins [REDACTED];
[REDACTED]; [REDACTED]; XX MICHAEL CONNOLLY
[REDACTED]
Subject: BT serious concerns with the Proposed Leased Lines Decision

Dear Garrett,

This is a courtesy note, following our observations on the negative impacts of the Leased Line consultation we discussed with Peter and Shay at our meeting on November 19th last. This is the number one issue on our risk register and I am required to copy Shay on correspondence in this matter.

We are working through our analysis of ComReg's new approach, and we believe it is resulting in a Type 1 error rate of over 10%. That is to say, at least one in 10 connected premises in the proposed-to-be deregulated districts will be left with Eircom as the sole candidate HQA network provider to those sites.

This error rate stems directly from the new criteria ComReg has employed, with minimal notice and zero consultation. As per our submission, we support the broad thrust of this market review and we agree that there are parts of the Irish market that it would be appropriate to deregulate. However, we believe the criteria used by ComReg are unjustified - we assess more than half of the scale of deregulation is unjustifiable and will result in significant harm to end users. In a large number of whole districts, you propose to turn the competition clock back to the 1990's.

We are satisfied that we have clear grounds for a successful appeal; however this is not a precedent we would like to set. We suggest you urgently re-assess the Type 1 error rate.

We are available to discuss our concerns.

John O'Dwyer
Head of Regulation
BT Ireland

M: [REDACTED]

John O'Dwyer
Head of Regulation BT Ireland (RoI): BT Regulatory Affairs | tel: [REDACTED] email:
[REDACTED]

-----Original Message-----

From: Eric Tomkins [REDACTED]

Sent: 23 December 2019 15:11

To: O'dwyer,JW,John,NQL R

Cc: Donal Leavy; Walsh,S,Shay,NQ R; Evans,P,Peter,NQW R; Connolly,M,Michael,NQW6 R; Garrett Blaney

Subject: RE: [Restricted] BT serious concerns with the Proposed Leased Lines Decision

Dear John

As Garrett is out of the office, I'm responding on his behalf to your email of 20 December last concerning ComReg's analysis of the Wholesale High Quality Access (WHQA) markets.

BT has raised a number of unsubstantiated points in its email, suggesting ComReg's draft decision (as notified to and accepted by the European Commission) contains errors stemming from the adoption of 'unjustified' and 'new criteria', with 'minimal notice and zero consultation'.

We will consider, as appropriate, the matters raised as part of the adoption of the final WHQA decision. In the meantime, this email should not be construed as an acceptance by ComReg of the validity of BT's views.

As neither your 5 December email to me nor your 20 December email to Garrett were marked as being confidential, ComReg plans to publish them in due course, unless I hear otherwise from you by close of business on 3 January 2020.

Regards

Eric

From: [REDACTED]

Date: Monday 23 December 2019 at 16:51:52

To: "Eric Tomkins" [REDACTED]

Cc: "Donal Leavy" [REDACTED]

[REDACTED]
[REDACTED] "XX MICHAEL
CONNOLLY" [REDACTED], "Garrett Blaney"
[REDACTED]

Subject: RE: [Restricted] BT serious concerns with the Proposed Leased Lines Decision

Eric,

We are happy to provide our findings and to meet you to discuss them. We must also say that we strongly dispute ComReg's refusal to provide the Areas data that we have requested, and in our view should be made publicly available. The information is not commercial in nature hence we do not understand why the industry should be hindered from carrying out the verification process of checking the validity of the findings. The ramifications of the proposed regulatory changes are significant and whilst there are many aspects of the work we agree with, we strongly believe it also contains serious errors which should be resolved before it is issued.

Our team is available to meet to discuss early in the New Year and we are happy with these emails to be published minus any personal information such as contact details.

John

John O'Dwyer

Head of Regulation BT Ireland (RoI): BT Regulatory Affairs | tel: [REDACTED] email:

[REDACTED]

-----Original Message-----

From: Eric Tomkins [REDACTED]

Sent: 24 December 2019 16:25

To: O'dwyer,JW,John,NQL R

Cc: Donal Leavy; Walsh,S,Shay,NQ R; Evans,P,Peter,NQW R; Connolly,M,Michael,NQW6 R; Garrett Blaney

Subject: Re: [Restricted] BT serious concerns with the Proposed Leased Lines Decision

Hi John

For clarity, ComReg has not refused to provide the data requested in your email of the 5 December last and I would refer to my email response to you of 13 December in which I noted, amongst other things, that ComReg had not yet adopted its final decision with respect to the WHQA market analysis; and that in deciding whether or not to make the requested data available as part of its final decision it would consider whether it is appropriate to do so and having regard to any confidentiality considerations.

I also note the offer to provide BT's findings and to meet and we will consider this.

Thank you for the confirmation that BT is happy for its correspondence to be published minus any personal information.

Finally, this email should not be construed as an acceptance by ComReg of the validity of B's views.

Have an enjoyable Christmas.

Eric

Eric Tomkins | Senior Manager, Competition and Market Analysis, Wholesale | Eric Tomkins |
Bainisteoir Sinsearach, Iomaíocht & Anailís Margaidh, Mórdhíola |

An Coimisiún um Rialáil Cumarsáide

Commission for Communications Regulation

1 Lárcheantar na nDugaí, Sráid na nGildeanna, BÁC 1 D01 E4X0 One Dockland Central, Guild Street,
Dublin 1, Ireland, D01 E4X0 (Teil | Tel [REDACTED]

8 Rphost | Email [REDACTED]

: Suíomh | Website www.comreg.ie<<http://www.comreg.ie>>

-----Original Message-----

From: [REDACTED]
Sent: 27 December 2019 10:59
To: Eric Tomkins [REDACTED]
Cc: Donal Leavy [REDACTED]; [REDACTED]; [REDACTED]; XX
MICHAEL CONNOLLY [REDACTED]; Garrett Blaney [REDACTED]
Subject: RE: [Restricted] BT serious concerns with the Proposed Leased Lines Decision

Eric,

Thank you for your email of 24th Dec and it would be most helpful to have the Areas information (which clearly already exists) before the decision and with sufficient time for operators to verify or otherwise their findings. Our studies show considerable error with some of the chosen de-regulated WPZs. This is a complex market review and we note the admissions of errors in the 2018 consultation leading to significant changes in the number of Small Areas in Zone A which we have only learned with the publication of the final documentation over a year later. It is wholly reasonable for operators to be allowed an appropriate opportunity to verify the findings in this final version.

Thanks

John

John O'Dwyer

Head of Regulation BT Ireland (RoI): BT Regulatory Affairs | tel: [REDACTED] email:
[REDACTED]

A14.2 Copy of a letter from ComReg to BT, dated 8th January 2020:

8 January 2020

Mr John O' Dwyer
Head of Regulation
BT Ireland
BT Communications Ireland Ltd
Grand Canal Plaza
Dublin 2

Re.: your correspondence concerning ComReg's WHQA Market Analysis

Dear John,

I refer to your email correspondence of 5 December 2019 and subsequent correspondence of 20, 23 and 27 December concerning the draft Wholesale High Quality Access ('WHQA') market analysis decision as notified to the European Commission on 5 November 2019 ('Draft Decision').

As you will be aware, the publication of the Draft Decision by the European Commission on its website does not open a further public consultation. BT's further correspondence has been considered by ComReg in this light.

I address in turn below the issues you raise in this correspondence concerning information on WPZs and alleged errors in ComReg's analysis. I also refer to my email responses to the above correspondence of 13, 23 and 24 December.

Information on the WPZs

In your email of 5 December, BT sought further information on the Work Place Zones ('WPZ') that are assigned to, and make up, each of the four Relevant MI WHQA Markets.

Figure 66 (Flowchart of the 2019 Tera Algorithm) in the Draft Decision summarises the process as follows:

- Steps 1 – 4 correspond to the Area 1 and Area 2 MI WHQA Markets in the Draft Decision where there is current demand.
- Areas A1, A2 and A3 make up the Area 1 MI WHQA Market.
- Area B1 makes up the Area 2 MI WHQA Market.
- Steps 5 and 6 correspond to the Area 3 and Area 4 MI WHQA Markets.
- Areas A4 and A5 correspond to the Area 3 MI WHQA Market.
- Area B2 corresponds to the Area 4 MI WHQA Market.



It is ComReg's intention to complement the information provided in the Draft Decision by including in its final Decision more detailed information regarding the assignment of the WPZs to Relevant MI WHQA Markets (Area 1-4 MI WHQA Markets). This will include information on the particular test in the 2019 Tera Algorithm that has informed the WPZ as falling within a particular category (A1-A5 or B1-B2). ComReg does not consider that it is required, or that it would be appropriate, to provide this information to one operator when the public consultation phase and the notification to the European Commission have concluded, and ComReg's decision-making and deliberative process, that will lead to the adoption of its final decision, is ongoing.

Alleged Type 1 error rate of over 10%

In your correspondence of 20 December 2019, BT alleges that ComReg's approach to market definition *"is resulting in a Type 1 error rate of over 10%...at least one in 10 connected premises in the proposed-to-be deregulated districts will be left with Eircom as the sole candidate HQA network provider to those sites."* BT sees this as *"stem[ming] directly from the new criteria ComReg has employed, with minimal notice and zero consultation..."* with BT stating that the criteria are *"unjustified"*, and alleging that *"more than half the scale of deregulation is unjustifiable."*

ComReg understands that by a 'Type 1 error rate', BT refers to Type 1 statistical errors where a true null hypothesis is erroneously rejected: *i.e.*, a false positive. In the context of the MI WHQA geographic market analysis, this would for example involve erroneously finding a WPZ to be part of Markets 1 or 3 (Zone A) when in fact that WPZ should be part of Markets 2 or 4 (Zone B).

First, in terms of the *"new criteria"* that ComReg would have used for the purpose of the Draft Decision, it is not at all clear what BT means by this. No new criteria have been added by ComReg as compared with the proposals which were the subject of the 2018 Further Consultation. Rather, some parameters were amended, including Small Areas ('SAs') being replaced by WPZs (which are a function of SAs); the distance criterion (changed from 100 metres to 50 metres); and the use of 'islands' to enhance the contiguity of the relevant geographic MI WHQA markets. Far from being made absent consultation, these changes result from ComReg's further detailed and extensive analysis and investigations it completed on foot of its consideration of Respondents' Submissions to the 2018 Further Consultation.

Second, BT's assessment of 'Type 1 Error rate' reflects a misunderstanding by BT of the methodology employed by ComReg to delineate the various geographic markets. In particular, that 10% of connected premises in Zone A would only have Eircom as an HQA network provider, does not amount to a 'Type 1 Error' as you contend. In this regard, BT appears to take the erroneous view that connected premises are the geographic unit; in fact the 2019 Tera Algorithm assesses competition in WPZs in accordance with ComReg's methodology as set out in the Draft Decision. Under the test used by ComReg, a WPZ will be deregulated where 75% of connected premises in that WPZ are within 50 metres of two or more alternative networks or where there is no demand (there is no connected premises) yet two alternative networks are present.



Therefore, it is entirely consistent with the methodology applied by ComReg that 10% of connected premises in Zone A could have Eircom as the only network within 50 metres of them. Accordingly, such a finding is not a Type 1 Error.

For the avoidance of doubt, ComReg, as set out in the Draft Decision, is satisfied that the application of the 75% proportionality criterion to identify differences in competitive conditions for WPZs that contain connected premises is adequate and appropriate. This is because it strikes a reasonable and fair balance between ensuring that competitive areas are not subject to unreasonable regulation and that areas with insufficient competition have regulated MI WHQA services available. Furthermore, using such a criterion is in keeping with regulatory best practice and ComReg also notes that in its comments, the European Commission considered the 75% proportionality criterion to be 'conservative'¹. There is in this regard no basis for your contention that "*more than half the scale of deregulation is unjustifiable.*"

Data accuracy

In your correspondence of 27 December 2019, reference is made to "*admissions of errors in the 2018 consultation leading to significant changes in the number of Small Areas in Zone A*" and that operators should be allowed an appropriate opportunity to verify the findings in this final version.

ComReg notes that the analysis used in the Draft Decision is based on information provided by Service Providers ('SPs') to ComReg, with such information gathered by ComReg using its statutory information gathering powers. ComReg has used reasonable endeavours to ensure the accuracy of this information, including having engaged with individual SPs (including BT) to correct erroneous information.

Finally, ComReg wishes to note that it has engaged fully and transparently over two consultations with all stakeholders and given due consideration to all views received, including where views and submissions were made outside the formal consultation process. Following receipt of the European Commission's comments letter, ComReg is now in the final stage of adopting its decision, which will be published in the normal way on ComReg's website.

I hope that the above has clarified ComReg's position to your satisfaction. In light of the reference in your email correspondence to a potential appeal of ComReg's final decision, please note that all of ComReg's rights in respect of this matter are strictly reserved.

Yours sincerely



Eric Tomkins
Senior Manager - Competition & Market Analysis
Wholesale Division

¹ C(2019)8760; European Commission Comments on Case IE/2019/2214.

A14.3 Copy of a letter from BT to ComReg, dated 10th January 2020:



Eric Tomkins
 Senior Manager
 Competition & Markets Analysis
 Wholesale Division
 Commission for Communications Regulation (ComReg)
 One Dockland Central
 Guild Street
 Dublin D01 E4XO

10th January 2020

Dear Eric,

Thank you for your letter of the 8th January 2020. We would like to address some of the points raised in your letter and also provide a better explanation of what we described as the Type 1 error issue and where you indicated that we were not clear.

Before we go into detail, we would like to record that there are many aspects of the draft decision that we support; our overriding concerns are (a) the magnitude of change, including the lack of key data and time for BT, in common with the rest of the industry, to assess and prepare for such a profound change in the Irish market; and (b) our analysis of outcomes in the de-regulated area has simply left too many customers exposed to single supply. We have already raised the issue with you of the logistics of attempting to find alternative supply from Eircom in what would be a very truncated period and when all operators will be seriously stretched in any case.

Additionally, as you will be aware, on the 9th January we issued a separate email to ComReg copied to the Industry Engagement Forum and other known operators not on this distribution (i.e. a distribution list of many Irish operators including the incumbent) providing further information as to our concerns and to indicate to others the consequences of what we believe will happen.

I now wish to address the specific points in your letter of the 8th January.

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 Shay Walsh (MD)
 Peter Evans
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- 1 **Information on the WPZs** – we understand the meanings of the zones as this is explained in the draft decision, but what is not transparent is what the actual WPZs are in which of the four areas (A1, A2, A3 and A4) as defined by ComReg or the seven outcomes described by the Tera model (A1, A2, A3, A4, A5, B1&B2). We believe that this information should not be confidential as it does not identify customers but it does help us verify / ‘sanity check’ the workings for underlying realism. It is clearly in the interests of customers that the outcomes are correct and as such we are at a loss to understand why ComReg is reluctant to release this information now. We had always expected that any data provided to BT would be supplied to others and would expect that to be the norm where operators seek such information. Hence our request for information on the WPZs per area is maintained and this should be available to the industry.
- 2 **Alleged Type 1 error rate of over 10%** - Please see Annex A to this letter which sets out our reasoning in more detail. In summary, we do not consider there is any underlying difference in principle between ComReg and BT on this matter although of course there will always be plenty of scope for argument over parameters such as economic dig distance, the threshold of minimum supply and so forth. As you will see from Annex B, we assess these “worst case outcomes” to apply to [REDACTED] BT Connected premises.
- 3 **Data Accuracy** – We note that your response has not addressed the point we were making which addresses the admission in The Tera document clause 2.1 (Page 5) concerning the presentation of the wrong set of results in the 2018 consultation. We consider this error should have been highlighted to stakeholders long before the notification to the European Commission and more broadly that ComReg was intending to make major changes to the algorithm and its constituent parts.
- 4 Whilst we acknowledge there have been two public consultations in 2016 and 2018, the changes from the 2016 to 2018 were fundamental in nature and of a large scale, tantamount to starting again in the M1 submarket and highlight the importance of consultation. The magnitude of change from the 2018 consultation to the publication of the draft Decision in 2019 has also been of significant scale, but this time ComReg is not providing an opportunity for parties to review these changes. Whilst there are some aspects of the analyses with which we are supportive, there are other aspects where we have serious doubts based on our preliminary analyses such as the supposed presence and ability of rival networks to offer service in competition with Eircom.

The leased line market is widely accepted to be intrinsically difficult to analyse but the consequences of wrong regulation will potentially have widespread repercussions in a critical sector of the Irish economy. We urge ComReg therefore to give appropriate consideration to the points that we and other stakeholders are making, and the very real impact on end users of the “Type 1” outcomes we are highlighting.

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Yours sincerely



John O'Dwyer
Head of Regulation – BT Ireland

Email: [REDACTED]
Tel: [REDACTED]

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Annex A - Observations On The Type I Error Designation And The Threshold Of Premises Competitively Served

You are perfectly correct in saying that there is no Type I error at the level of the WPZ all assuming that the underlying data are accurate and that the algorithm can truthfully map the competitive dynamics of supply. It is inevitable that within any WPZ classified into Zone A that there will be a number of premises that do not meet the minimum threshold of two competitors as well as the incumbent within economic distance of supply. That is where the threshold comes in. There will be corresponding 'errors' (Type II) for WPZs in Zone B where premises are actually competitively served but Eircom is regulated nevertheless.

At the level of premise therefore – and presuming we could actually undertake an economic assessment based on each premise individually - we would have a definitive list which would in principle take out what we called Type I and Type II errors.

We do not believe there is any dispute between us here, in principle, and as you noted in the Draft Decision, BT actually supported the use of SAs as they are likely to minimise these errors. (The issue is rather more complicated than that to do with what we would call 'middle ground' areas rather than the extremes of very high density or very low density where likely both geographic units would work equally well. Ultimately this is an empirical issue.)

You noted the fact that the Commission commented on the comparatively high threshold (75%) which you have used and some NRAs adopt lower values. We believe this is a really important matter and make the following observations. First, from our circumstantial knowledge of a number of NRAs, the level of analysis is far from robust and it is very likely that they are not aware that changing the threshold will alter the balance between the preponderance of Type I and Type II errors. So, for example, a very low threshold might 'throw' a lot more WPZs from Zone B to Zone A and vice versa and the absolute numbers of each will shift. Second, there is a real policy issue here in terms of the welfare loss to consumers of setting a threshold which favours one type of error over another. Arguably in our view NRAs should be more concerned about Type I errors than Type II. Third, the 'correct' threshold is linked to country-specific circumstances including the impact of 'spill-over' effects for example of average pricing where it is practiced and the ability of players to have the knowledge and capability to price discriminate according to particular geographic areas and business locations. Fourth, it is important to look at the size of the threshold in the context of other parameters in the algorithm. Arguably a higher threshold is appropriate in a larger geographic unit which has greater chance of underlying heterogeneity in competitive conditions and also if actual premises are used than a wider potential set of supply points, some of which are not going to take leased lines anyway. In this context we note that ComReg has shifted in both of these parameters

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from the 2018 Consultation in the direction of justifying a higher rather than lower threshold.

The gist in summary is that we do not believe the Commission has really said anything particularly helpful or useful here based on what other NRAs may have done. It is interesting to compare ComReg's use of 75% with the slightly lower threshold of 65% which Ofcom used historically. (A new multi-service access Consultation has just come out which we have not yet had time to digest.)

There are two additional points we would like to make here. Firstly, in assessing the SMP status beyond the market definition stage, Ofcom also did a detailed analysis of the average number of competitors in a particular area and not just the threshold. Second, Openreach is in any case subject to a blanket regulatory structure even in areas where they do not nominally have SMP and which preclude excessive or discriminatory pricing. There is a safety net in the UK which is very important and likely mitigates against Type I errors of any source.

With this background, I would like to explain where we are coming from and why we are so surprised at the apparent implications of the Draft Decision. Where a premise is in a Zone A WPZ but does not meet the threshold then either it is served by Eircom alone or Eircom plus one other AN. The threshold is of course a minimum and some premises will be served by more than 3 potential suppliers and many WPZs will comfortably exceed the minimum threshold anyway of 75%.

We do not know what the actual coverage is at the minimum threshold across all Zone A WPZs but it must be in excess of 75%. The residual sites are then split into the two categories as described above. In general, we would assume that the majority of sites would be served by Eircom plus one AN as it would be perverse to have a large contingent of sites only served by Eircom – this would in itself indicate some element of intra-WPZ heterogeneity of competitive conditions.

However, our analysis comes up with [REDACTED] only potentially served by Eircom with no realistic prospect of a competitive alternative. While Eircom might not in the final instance refuse outright to supply us with a circuit, experience in other markets such as broadband has demonstrated that we can [REDACTED]

This seems to be a worrying proportion to our mind but we are not able with the information to hand able to pin this down to the multitude of factors which have changed between the 2018 and current algorithms.

More broadly and this is the principal point that we wished to convey to you, even where we are potentially able to source circuits from other suppliers, our discussions to date with these ANs has been entirely consistent with our assessment unfortunately.

BT Ireland is certified to International Standards: Quality Standard ISO 9001:2008 and Environmental Standard EN 14001:2004



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It is far from clear that many or indeed any of them have both the technical capability and commercial incentive and priority to bring forward an alternative wholesale service to Eircom. They too are struggling to make sense of the DD for their own existing customer base at wholesale (if they exist) and retail levels.

I cannot emphasise enough to you that the implementation of commercial plans for companies like BT is very difficult, time consuming and expensive. It is a completely different set of issues for example to consumer broadband as customers often have multiple sites and require higher levels of resilience and so forth.

Our position in summary is that even if competitive supply was available to replace or augment that of Eircom as ComReg presumes, [REDACTED]

[REDACTED] manner given the magnitude of the changes from what we envisaged from the 2018 Consultation. Here it is not an issue of economics or statistics whatsoever purely one of logistical implementation and there has been a large shift of premises ostensibly in Zone A in 2018 and now Zone B and vice versa. (In passing it is not always the case that a shift to Zone B will mean there are no issues to be addressed as contracts are often multi-site potentially spanning both Zones.)

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Annex B – E-Mail Sent to Industry - BT serious concerns with the Proposed Leased Lines Decision (Please note the large table was re-formatted to fit the page and no content was changed).

Dear Eric

I've taken the liberty of cc'ing the Industry Engagement forum on this email, as the outcome of your market review will have profound implications for customers of all leased line operators – not just BT.

We believe the draft decision as published in November 2019 and proposed for implementation this month represents a major change from what preceded it, and that industry needs access to the supporting data to properly assess its impact. We also believe there is a high risk of unintended consequences to over 1000 Connected Premises sites that currently enjoy regulatory protection. We are aware that the consultation period has closed and that ComReg has since implemented substantial data corrections along with changes to the geographic basis criteria used without consultation that have driven this volume of new outcomes

The draft decision notice indicates a level of deregulation that is similar to the 2018 draft decision. This superficial similarity masks very substantial changes, with localities being re-designated from B to A, and vice versa. ComReg propose to finalise this decision without further consultation, while providing minimal notice and inadequate supporting data.

	Count of Customer Premises	Zone Change	Magnitude of Change
Consultation Connected Premises	8473	Unknown	Unknown
BT live MIA connected premises (National)	1***	***	22%
All Business Eircodes – Dublin Only	38748	10292	27%
All Business Eircodes - National	272100	34349	13%

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Given the profound impact this will have, we suggest the absence of reasonable notice and material gaps in the supporting data provided for this major change is not consistent with your duty of care.

We do not consider this a harmless process acceleration. ComReg’s most significant criterion was to test that at least 75% of connected premises could be served by at least three HQA providers. ComReg might plausibly expect that would lead to a manageable number of worst case outcomes – if 75% of sites can be reached by three networks, then surely no more than 5%-7.5% of sites in the district will be left with only 1.

What might be reasonably assumed		
OpenEir +2 or More	OpenEir +1	OpenEir Only
75%+	17.5% -20%	5%-7.5%

We assess the actual rate of worst case outcomes is 300% higher, and hundreds of Zone A BT connected premises in Ireland are set to have no economic alternative to Eircom MIA access.

Analysis of BT's Connected Prems in all Zone A

WPZs		
Open Eir + 2 or More	OpenEir + 1	Open Eir Only
77%		23%

Our analysis is of course is based on a narrower data set that that collected and refined by ComReg over the course of this market review. However, we believe our sample base is a reliable proxy for the market as a whole, as we have incorporated data from major network operators. ComReg’s draft decision deregulates districts containing 4950 customer connected premises – and our analysis indicates more than 1000 live end user sites will be exposed to an unregulated and sole access supplier.

We believe that the magnitude of change and the apparent volume of Type 1 outcomes necessitate a further short period of consultation. We also ask that ComReg communicate the WPZ’s by Area number, so that industry and our customers can understand the criteria which determined their designation.

Regards

Michael Connolly
BT Ireland

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T: [REDACTED]
M: [REDACTED]
BT Meet Me [REDACTED]



This email contains information from BT Communications Ireland Limited that may be privileged or confidential. And if it's meant only for the person above. And if that's not you, we're sorry - we must have sent it to you by mistake. Please e-mail us to let us know - and don't copy or forward it to anyone else. Thanks.

BT Communications Ireland Limited, 2 Grand Canal Plaza, Upper Grand Canal Street, Dublin 4, GRO number 141524

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Directors:
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A14.4 Copy of a letter from BT to ComReg, dated 20th January 2020:



Eric Tomkins
 Senior Manager
 Competition & Markets Analysis
 Wholesale Division
 Commission for Communications Regulation (ComReg)
 One Dockland Central
 Guild Street
 Dublin D01 E4XO

20th January 2020

In Confidence

RE: ComReg draft Leased Lines Decision

Dear Eric,

Following our meeting of 13 January 2020, we would like to further provide ComReg with the remaining 'difficult supply' cases of sites where we can only realistically source wholesale from Eircom. These figures are in addition to those 20 examples provided at the meeting and highlight the supply challenge we would face from the latest proposals. We are more than happy to provide follow-up information on any of these or other supply problem cases if requested

Separately we are still seeking, and once more request to be provided with the WPZ information per area (A1, A2, A3 and A4 as described by ComReg document and areas A1, A2, A3, A4 A5, B1 and B2 in Annex 4 Figure 13 the new Tera algorithm) to be published to stakeholders as soon as possible and most emphatically before the publication of the decision. Please note it is the breakdown in the TERA algorithm that is needed at this level of granularity.

We remain concerned here for many reasons and wish to try to pin down the source of why such a large percentage of our off-net installed base within the proposed de-regulated areas do not appear to have an alternative access provider to Eircom. The only realistic way to do this is to find out which of the TERA areas our circuits are associated with.

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We also wish to see this in a wider market context to rule out whether or not BT itself has been comparatively 'unlucky' in serving sites which are in WPZs in Zone A. Along with the WPZs above we therefore request that ComReg provides the market volumes (total counts only) of connected premises for each of the TERA areas in Figure 13 of the Tera document.

Yours sincerely



John O'Dwyer
Head of Regulation – BT Ireland

Email: [REDACTED]
Tel: [REDACTED]

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A14.5 Attachments to BT Letter dated 20th January 2020 are not published for confidentiality reasons.

A14.6 Copy of a letter from ComReg to BT, dated 22nd January 2020:

22 January 2020

Mr John O' Dwyer
 Head of Regulation
 BT Ireland
 BT Communications Ireland Ltd
 Grand Canal Plaza
 Dublin 2

Re.: your further correspondence concerning ComReg's WHQA Market Analysis

Dear John,

I refer to previous correspondence concerning the draft Wholesale High Quality Access ('WHQA') market analysis decision as notified to the European Commission on 5 November 2019 ('Draft Decision'), in particular your letters of the 10 and 20 January last, my letter of the 8 January and email correspondence received from BT on 5, 20, 23 and 27 December 2019. I also refer to the meeting, held at BT's request, with ComReg on 13 January last and the materials submitted by BT on that occasion seeking to evidence BT's concerns that the Draft Decision causes a "Type 1 Error rate" in excess of 10%. I will respond to your email of 9 January 2020 to the Industry Engagement Forum under separate cover in due course.

Although as stated in my letter of 8 January, the publication of the Draft Decision by the European Commission on its website does not open a further public consultation, ComReg has reviewed the contents of your letter of 10 January and the additional materials provided on 13 January, which will duly be taken into account by the Commission when adopting its final decision. For now, ComReg's position remains as stated in my letter of 8 January. In addition, I note the following:

- **Information on the WPZs:** As noted in my letter of 8 January, ComReg intends to provide additional information on the allocation of WPZs to particular MI WHQA geographic markets in its final Decision. Furthermore, ComReg is considering BT's request in its 20 January letter to provide the number of Connected Premises in each of the steps of the 2019 Tera Algorithm. ComReg is satisfied that there is no requirement on its part to provide such information in advance of this.
- **Alleged Type 1 error rate of over 10%:** ComReg's analysis of the Connected Premises in Zone A does not support BT's contention that Eircom is likely to be the only Service Provider capable of providing MI WHQA services for [redacted] of the Connected Premises. Furthermore, in relation to the sample Connected Premises provided by BT on 13 January ComReg has found that they are correctly in Zone A. In particular, of the sample provided [redacted]

[redacted]



With respect to the list of Connected Premises provided by BT in its letter of 20 January, such Connected Premises data has been provided by BT to ComReg (for the relevant time periods) in its responses to the various statutory requests for information that were issued by ComReg during the conduct of its analysis, with such information factored into the analysis in the Draft Decision.

- **Data accuracy:** Please see paragraphs 5.235 and A1.118 of the Draft Decision where ComReg has addressed the issues of the errors in the map published as part of the 2018 Further Consultation. As noted in Section 2.2 of the draft 2019 Tera Report, the error in the duplication of Connected Premises (which arose as a direct result of inaccurate data provided by Service Providers) did not have a material impact on the network proximity analysis used to inform the assessment of the Zone A and Zone B MI WHQA Markets. This is because the duplicated premises are the same premises and the same geographic location is therefore used in the network proximity analysis. Furthermore, the use of the 300k database instead of the 15K database in the 2018 Further Consultation to ascertain potential demand resulted in 5% of SAs being considered for potential demand where no such demand was likely to arise. In any event, as noted in the Draft Decision, having considered Respondents' Submissions, ComReg considered that current demand was a more appropriate indicator of future demand and has dropped the use of potential demand from its assessment.
- **Magnitude of changes:** ComReg is satisfied that it has complied with legal requirements to consult on its proposed measures, and to take account of comments received, including by way of amendments as appropriate.

ComReg is now in the final stage of adopting its decision, which will be published in the normal way on ComReg's website. As noted previously ComReg intends to publish the BT and ComReg correspondence on this matter in its final Decision (redacted as appropriate for confidential information).

I hope that the above has clarified ComReg's position to your satisfaction. In light of the reference in your email correspondence to a potential appeal of ComReg's final decision, please note that all of ComReg's rights in respect of this matter are strictly reserved.

Yours sincerely

Eric Tomkins
Senior Manager - Competition & Market Analysis
Wholesale Division

A14.7 Copy of a letter from Eircom to ComReg, dated 18th December 2019:

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Citywest Business Campus
Dublin 24 D24 HX03
T +353 1 671 4444
eir.ie

Donal Leavy
Director - Wholesale
Commission for Communications Regulation
One Dockland Central
Guild Street
Dublin, D01 E4X0

18th December 2019

Re: ComReg's review of the WHQA market

Dear Donal,

eir welcomes the publication of ComReg's draft measures with regard to the Wholesale High Quality Access (WHQA) provided at a fixed location, as notified to the Commission on 5 November 2019, coming as it does after such a prolonged period following the implementation of the most recent decision pertaining to this market, published in 2008. Nonetheless, eir wishes to express a number of concerns in relation to this proposal.

eir maintains its view that ComReg has failed to sufficiently or adequately capture the competitive nature of the market. This is due largely to the exclusion of wireless leased lines from the modern interface product market as well as changes to the treatment of publicly owned MANs and the decision not to map eir's network. eir does not believe that the analysis supporting ComReg's revised conclusions meets the threshold required to determine market boundaries in the context of an *ex ante* assessment.

While eir welcomes a number of the adjustments that have been made to the mapping methodology since the 2018 Consultation, including the change of geographic unit, the reordering of the test to interrogate demand side data first and the introduction of additional tests to address contiguity issues, we remain concerned that the restrictive criteria for determining whether a Work Place Zone (WPZ) is competitive or otherwise will result in numerous WPZs being misclassified as Zone B. In the 2018 Further Consultation, the publicly owned MANs, in particular "Competitive" MANs were taken as being equivalent to two alternative networks. This proposal reflected the open access and pricing obligations placed on enet by virtue of State Aid Guidelines and eir considers that this was the appropriate approach.

Directors: Carolan Lennon, Stephen Tighe

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Incorporated in Jersey Number 116389

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In February 2019, the Department for Communications, Climate Action and Environment (DCCAE) published an Analysys Mason report on pricing and access arrangements for the MANs and requested that ComReg report on the implementation of this review. ComReg then advised eir that it intended to consider what implications, if any, this might have on the timing of its analysis of Market 4 but that it still intended to notify its draft proposals to the Commission in Q2 2019.

Although the review is only mentioned briefly, it appears tied to ComReg's revised position that enet's MANs are effectively under common ownership and as such its assets, both public and private, should be treated as one network. We are unsure as to the level of analysis conducted since February in this regard, but ComReg states that it *"has considered this issue and decided on balance, to treat the assets under the control of enet – both public and private – in the similar fashion to the assets under the control of other vertically integrated SPs, i.e. as one network."*

eir understands that open access to the MANs on an equality of treatment, non-discriminatory and transparent basis to all service providers is still being monitored and reviewed by ComReg at the request of the Minister for Communications, Climate Action and Environment. In addition, a number of recommendations by Analysys Mason to improve the operation of the MANs have already been implemented. On a forward looking basis and given the level of regulatory oversight of the publicly owned MANs, eir is of the view that it remains appropriate to consider the public and private assets of enet separately in the context of this market review.

In addition, eir again notes that its ducts and poles are regulated in a separately defined market and as such passive access products are available to all operators including eir. It does not appear to us that ComReg has taken upstream remedies into account in its analysis of the WHQA market, particularly with regard to the new distance criterion of 50m used in its mapping methodology.

In this regard, we note that the European Commission, in its comments on ComReg's notified measures, has remarked that the geographic criteria *"might be considered rather conservative"* and urges ComReg to *"undertake the next market review in good time, within the time limit, to avoid delays in its adoption, as have affected the current review"* and within the next market review to *"review the methodological approach to the choice of criteria and thresholds, to better reflect NRAs' regulatory practice, the common position of BEREC, and technological and market developments"*. In light of the Commission's comments, we ask ComReg to therefore confirm it will in fact undertake and complete a market review within three years of the publication of the final Decision as per the requirements under the existing Framework.

Given the remaining issues with regard to the mapping methodology, the conservative criteria employed and the lack of an interim review mechanism, we do not believe that the geographic delineation accurately reflects current or indeed prospective competition in the WHQA market.



eir therefore remains of the view that ongoing monitoring of the geographic market segmentation is necessary in order to recognise definite competitive developments over the period of the review, including the highly-publicised National Broadband Plan rollout. ComReg states, in its proposed measures, that it *“does not intend to update the map prior to the next market review as it considers that the boundaries are sufficiently stable and regulatory certainty is better promoted by maintaining them”*. However, we note the Commission’s comments with respect to BIPT’s notified measures for Market 4 (Case BE/2019/2208) that *“it is important to ensure that the regulatory approach will adequately reflect the increasing level of infrastructure competition, which can already be observed in different parts of the country until the next market review”* and that the Commission has urged BIPT to amend the final measure to mandate updating the list of areas subject to lighter regulation on a regular basis. eir considers that a similar approach must also be appropriate in the context of the Irish market.

While the notified measures for Belgium differ in that the wholesale market is national in scope with geographic differences accounted for in the design of the remedies, with more competitive areas subject to lighter regulation, we note that BIPT has expressed similar concerns to those expressed by ComReg with regard to geographic segmentation over the period of the review. These concerns are related to the potential risk that a more dynamic approach could be problematic for access seekers who might be subject to subsequent price changes of wholesale products. However, the Commission considers the risk to be limited considering that the criteria which reflect the long term presence of 3 competing fibre infrastructures should ensure a sufficient level of stability. eir considers that, in a similar fashion, a regular review process, combined with a sunset period of 6 months for Zone B WPZs, that are deemed newly competitive through this process, is sufficient to alleviate concerns around regulatory certainty in the Irish case.

We believe that a regular review should entail active monitoring of the WPZ designations by ComReg and that updates to the designations need to be published on a quarterly basis at least, so that competitive developments can be accurately reflected in a timely manner. We also request that ComReg provide industry with the mapping model so as to allow for regular stakeholder input to this review process.

With regard to the proposed remedies, eir notes that there appears to be an inconsistency in the proposed Decision between the timelines for the notification of pricing and material pricing amendments or changes and updates to any Statements of Compliance (SoCs) to reflect material changes. Section 17.9 requires that eir *“shall notify ComReg in writing with the information to be published at least five (5) working days in advance of any such publication taking place, that is, three (3) months and five (5) working days prior to any amendments or changes coming into effect.”* The period of 3 months and 5 working days applies to changes to existing products and the introduction of a new product. However Section 20.7, as currently drafted, requires that SoCs shall be provided to ComReg *“(i) in the case of any offer of a new MI WHQA product, service, facility or Associated Facility, seven (7) months in advance of it being made available; (ii) in the case of any change to an existing MI WHQA product, service, facility or Associated Facility, three (3) months in*



advance of it being made available". The timelines in Section 20.7 appear to be a drafting error as the timelines for the provision of a SoC should be aligned with the transparency obligations in Section 17. We therefore request that ComReg correct the text in the finalised Decision such that the SoC shall be provided 5 working days and 3 months in advance of a change or new product being made available.

eir would also like to clarify its understanding of the proposed requirements in relation to WDM Interconnection Services. As per Figure 89 (a) & (b), the services are depicted as having an access connection and an Interconnection Service end. It is our understanding that this is intended to represent the existing WDM based services that open eir currently provides i.e. WUP Service. As such, eir sees this simply as one end to end service, with no differentiation between the access end and the interconnection point, and will continue to be ordered as one full point to point service, that is to say that one order is placed by the Operator. We therefore understand this to mean that there is no change to the existing product. However, for the purpose of certainty, we request confirmation in this regard from ComReg.

As per Figure 90, the services are depicted as a 'Hub and Spoke' type service, with the Hub being the WDM Interconnect element, the customer access tails being the spoke elements. As such, eir believes that this would be a new service and that the requirement in this regard would be to allow for the Interconnect element to be ordered in isolation to the access elements. To initially connect one customer end to the Interconnect Service, this would comprise of two separate orders rather than the one order that would be required to initiate delivery of a standard point to point WDM service as per figure 89. Again, for the purpose of certainty, we request confirmation of this from ComReg. eir presumes that, from an assurance perspective, a point to multi-point WDM product would have separate SLAs i.e. access and Hub SLA elements and could have separate ownership of the elements within the point to multipoint product. Again, for purposes of clarity for all stakeholders, we ask that ComReg confirm if this is indeed the case or if it is envisaged that ownership of the product elements are by the same operator.

I look forward to hearing from you in the near future.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'G. Healy'.

Gary Healy
Directory of Regulatory and Public Affairs

A14.8 Copy of response from ComReg to Eircom, dated 17 January 2020:



17 January 2020

Mr Gary Healy
Director of Regulatory and Public Affairs
Eircom Limited
2022 Bianconi Avenue
Citywest Business Campus
Dublin 24 D24 HX03

Re: WHQA Markets Review

Dear Gary

Thank you for your letter of 18 December last in respect of ComReg's review of the Wholesale High Quality Access (WHQA) markets.

In your letter you outline Eircom's concerns that ComReg's analysis of the WHQA markets as set out in the draft measures notified by ComReg to the European Commission ('Draft Decision') on 5 November 2019 fails to capture the markets' competitive nature. You also raise a number of queries on the proposed remedies.

Please note that in the interest of transparency, both your letter and this response will be published as Annexes to the Final Decision.

Competitive nature of the WHQA Markets

In setting out the reasons why, in Eircom's view, the Draft Decision fails to assess the competitive nature of the WHQA markets, you refer in particular to the exclusion of wireless P2P radio links from the scope of the relevant WHQA markets, the use of overly restrictive criteria to delineate competitive markets, as well as the lack of provision for interim reviews.

I note that generally speaking, those concerns are not new issues but rather a reiteration of the views submitted by Eircom in submissions it made during the consultation process. ComReg is satisfied that, on the basis of its analysis, its Draft Decision adequately captured the extent and nature of competition in WHQA markets in the State. In particular, as set out in the Draft Decision:

- Wireless P2P radio links do not form part of the relevant WHQA markets; please see ComReg's detailed rationale set out in Sections 4 and 5 of the Draft Decision.

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- ComReg did not consider it necessary to “map Eircom’s network” in order to assess the nature and extent of competition in WHQA markets. As explained in ComReg’s Draft Decision, ComReg’s assumptions as regards the reach of Eircom’s network are consistent with materials published by Eircom itself, which confirm that Eircom has the largest network offering nationwide services and “*unrivalled nationwide availability*”.¹
- ComReg’s Draft Decision to treat the publicly owned assets under the control of Enet in the same manner as other private assets was informed by careful consideration of all the relevant facts available to ComReg. Furthermore, the sensitivity analysis conducted by ComReg as regards the impact of considering the publicly owned MANs with independent backhaul as one or two Alternative Networks shows that this issue does not have a particularly material impact on the scope of the relevant MI WHQA geographic markets, or on the question of SMP in them.²
- ComReg took into account the existence of obligations imposed on Eircom in the separate WLA market to provide access to ducts and poles (as set out in ComReg Decision D10/18). However, the take up of Eircom’s Duct and Pole offers has been so small as to have no material impact on the WHQA markets.³

The European Commission’s comments that ComReg’s geographic criteria “*might be considered to be rather conservative*” [Emphasis added], or the absence of an interim review mechanism, do not mean, as you appear to contend, that “*the geographic delineation [does not] accurately reflect current or indeed prospective competition in the WHQA market*”. ComReg will, of course, take utmost account of the European Commission’s comments in adopting its final Decision.

As regards Eircom’s view that ComReg should carry out regular reviews of the designation of WPZs, please see paragraph A1.228 of the Draft Decision which addresses Eircom’s previous submissions on this matter. As Eircom is aware, ComReg has initiated a programme to automate the collection of data for HQA markets on a quarterly basis. This, once completed, should facilitate close monitoring of these markets and data collection for the next review thereby assisting with its timely completion and market monitoring more generally.

As Eircom would be aware, by contrast with the draft measures for Market 4 notified by the Belgian National Regulatory Authority (“NRA”) BIPT, the European Commission did not make comments to ComReg that an interim review mechanism ought to be provided for. The differences between the draft measures notified by the BIPT and those notified by ComReg for Market 4 are, in this regard, much more fundamental than you acknowledge in your letter.

¹ <https://business.eir.ie/product/next-generation-connectivity/#tab-2>

² Please see paragraphs 5.286 to 5.288 of the Draft Decision for further information.

³ Please see paragraphs 5.308 to 5.311 of the Draft Decision for further information.



In particular, in Belgium, the BIPT defined a national market for all WHQA services in which the incumbent Proximus has been designated as having SMP and proposed to lift pricing regulation in some exchanges that meet certain competition criteria. In the Belgian case, updating the list of exchanges subject to lighter regulation would not accordingly affect the delineation of the relevant market subject to regulation.

In contrast, in Ireland, ComReg's Draft Decision identifies 4 separate MI WHQA geographic markets, two of which are deemed to be competitive and are to be no longer subject to regulation (following a sunset period). This is a much more significant level of deregulation. As ComReg sets out in its Draft Decision, the average retail contract utilising MI WHQA services is 3-5 years in duration and often involve many connections in disparate geographic locations. As such, ComReg is of the view that regulatory certainty is promoted by maintaining the scope of the relevant MI WHQA markets for the duration of the review.⁴ As noted above, ComReg will continue to closely monitor the HQA markets.

Remedies – Notification timelines

ComReg notes your comments regarding inconsistencies between the timelines for notifications of changes to products as part of the Transparency obligations imposed by the Decision, and the submissions of updated Statements of Compliance ("SoC"). Whether any amendments are required to the draft Decision Instrument will be considered by ComReg when making its final decision.

Remedies – WDM Interconnection services

Regarding Eircom's specific queries on requirements in the Draft Decision concerning WDM Interconnection services (set out in paragraphs A1.539 to A1.553 of the Draft Decision), ComReg confirms as follows:

- The WDM Interconnection service as depicted in Figure 89 of the Draft Decision may be provided using Eircom's existing WDM WHQA service (WUP) which ComReg considers inherently supports the WDM Interconnection Service: see Paragraph A1.459 (a) of the Draft Decision. The Draft Decision accordingly allows Eircom to discharge its obligation to provide WDM Interconnection services by providing Operators with access to single end-to-end WDM WHQA services (e.g. WUP), which can be ordered as one full end-to-end service (i.e. one order placed by the Operator).
- The Hub and Spoke services depicted in Figure 90 of the Draft Decision are new MI WHQA services which the Draft Decision requires Eircom to develop within 9 months of receiving a request: see paragraph A1.549 (b) of the Draft Decision. Eircom is also correct that in that case, the WDM Interconnect element could be ordered in isolation to the WDM access connections, and that from an assurance

⁴ See paragraphs A1.228 to A1.233 of the Draft Decision



perspective, a point to multi-point WDM WHQA product could have separate SLAs. However, this is a matter for Eircom and stakeholders to negotiate during the SLA Negotiation Period. Finally, although the stylised example in Figure 90 of the Draft Decision, depicts the same Operator having ownership of the Interconnect element and the access connections, this does not preclude an Operator from submitting an access request involving separate ownership of the Interconnection and access elements within the point-to-multipoint product.

I trust that the above addresses the issues and queries raised in your letter.

Yours sincerely

Donal Leavy
Director – Wholesale

Annex 15 2018 Corrected Map of Zone A and Zone B

A15.1 The corrected 2018 map above is available at the following link:

<https://siteviewer.comreg.ie/ComReg1808b>

Annex 16 List of Acronyms

Table 27: List of Acronyms used in this Decision

Acronym	Full Title
3CT	Three Criteria Test
AAC	Average Avoidable Cost
AC	Alternating Current
AFI	Additional Financial Information
AFS	Additional Financial Statement
AN	Alternative Network
ANM	Access Network Model
AS	Access Seeker
AS	Accounting Separation
ATC	Average Total Cost
ATM	Asynchronous Transfer Mode
AVC	Average Variable Cost
BAFO	Best And Final Offer
BCMR	Business Connectivity Market Review
BCRD	Broadband Cost Reduction Directive
BEREC	Body of Economic Regulators for Electronic Communications
BU	Bottom Up
CAT	Competition Appeals Tribunal
CATI	Computer Aided Telephone Interview
CBP	Countervailing Buying Power
CCA	Current Cost Accounting

CCMA	County and City Managers Association
CCPC	Competition and Consumer Protection Commission
CCTV	Closed Circuit Television
CEI	Civil Engineering Infrastructure
CGA	Current Generation Access
CGAC	Collective Geographic Assessment Criteria
CoS	Class of Service
CPE	Customer Premises Equipment
CSH	Customer sited Handover
CSO	Central Statistics Office
DC	Direct Current
DCC	Dublin City Council
DCCAE	Department of Communications, Climate Action & Environment
DI	Decision Instrument
DSL	Digital Subscriber Line
EC	European Commission
ECN	Electronic Communications Network
ECS	Electronic Communications Service
ED	Electoral District
EFM	Ethernet Final Mile
ENH	Edge Node Handover
EOI	Equivalence of Inputs
EOO	Equivalence of Outputs
ERG	European Regulators Group (replaced by BEREC)

EU	European Union
EUL	End User Link
FACO	Fixed Access and Call Termination
FR	Frame Relay
FTTC	Fibre to the Cabinet
FTTH/B	Fibre to the Home/Building
FTTx	Fibre to the x
FVCT	Fixed Voice Call Termination
FWA	Fixed Wireless Access
FWALA	Fixed Wireless Access Local Area
GN	Government Network
HB	High Bandwidth
HCA	Historic Cost Accounts
HDSL	High Speed Digital Subscriber Line
HFC	Hybrid Fibre Cable
HHI	Herfindahl Herchshmann Index
HM	Hypothetical Monopolist
HMT	Hypothetical Monopolist Test
HQA	High Quality Access
HQA Provider	Operators offering HQA services
IA	Internet Access
IBH	In Building Handover
ICT	Information and Technology

IP	Internet Protocol
ISDN	Integrated Services Digital Network
ISH	In-Span Handover
JVCo	Joint Venture Company
KPI	key Performance Indicator
LAAA	Local Authority Administrative Area
LB	Low Bandwidth
LEA	Local Electoral Area
LL	Leased Line
LLRO	Leased Line Reference Offer
LLU	Local Loop Unbundling
LRAIC	Long Run Average Incremental Cost
LRAIC plus	Long Run Average Incremental Cost plus
LRIC	Long Run Incremental Cost
MAN	Metropolitan Area Network
MEA	Modern Equivalent Asset
MGA	Modified Greenfield Approach
MI	Modern Interface
MLA	Main Link Access
MLD	Main Link Distance
MMDS	Multichannel Multiservice Distribution System
MNO	Mobile Network Operator
MP&BTF	Mobile Phone and Broadband Taskforce

MPLS	Multiprotocol Label Switching
MRLS	MapRoad Licensing System
MSE	Management Services Entity
MST	Margin Squeeze Test
MVCT	Mobile Voice Call Termination
NBP	National Broadband Plan
NDA	Non-Disclosure Agreement
NG	Next Generation
NGA	Next Generation Access
NGN	Next Generation Network
NRA	National Regulatory Authority
NSA	Network Sharing Agreement
NTU	Network Termination Unit
OAo	Other Authorised Operator
ODF	Optical Distribution Frame
OSS	Operational Support Systems
P2P	Point to Point
PABX	Private Automated Branch Exchange
PDH	Plesiochronous Digital Hierarchy
PE	Provider Edge
PoA	Price on Application
PoH	Point of Handover
PoP	Point of Presence
PPC	Private Partial Circuit

PSTN	Public Switched Telephone Network
QKDR	ComReg Quarterly Key Data Report
RAP	Regulated Access Product
RCBS	Retail Business Connectivity Services
RGM	Regulatory Governance Model
RIA	Regulatory Impact Assessment
RIO	Reference Interconnect Offer
RMO	Roads Maintenance Office
ROM	Rough Order of Magnitude
SA	Small Area
SaaS	Software as a Service
SDH	Synchronous Digital Hierarchy
SEO	Similarly Efficient Operator
SIP	Session Internet Protocol
SIR	Statutory Information Request
SLA	Service Level Agreement
SME	Small to Medium Enterprise
SMP	Significant Market Power
SoC	Statement of Compliance
SOR	Statement of Requirement
SP	Service Provider
SSNIP	Small but Significant Non-transitory Increase in Price
TD	Top Down
TDM	Time Domain Multiplex

TI	Traditional Interface
TII	Transport Infrastructure Ireland
TL	Transport Link
VDSL	Very High Speed Digital Subscriber Line
VEA	VDSL Ethernet Service
VoIP	Voice over Internet Protocol
VPN	Virtual Private Network
WAN	Wide Area Network
WCA	Wholesale Central Access
WCS	Wholesale Circuit Emulation Service
WDEA	Wholesale Dublin Ethernet Access
WEA	Wholesale Ethernet Access
WEIL	Wholesale Ethernet Interconnection Link
WES	Wholesale Ethernet Service
Wholesale LL	Wholesale Leased Line (generic term for wholesale service)
WHQA	Wholesale High Quality Access
WLA	Wholesale Local Access
WLL	Wholesale Leased Line (refers to Eircom wholesale product)
WPZ	Workplace Zone
WREA	Wholesale Regional Ethernet Access
WSEA	Wholesale Symmetrical Ethernet Access
WSEA	Wholesale Symmetrical Ethernet Access
WUP	Wholesale Uncontended Product

xDSL	x Digital Subscriber Line (any DSL technology)
xWDM	Wavelength Division Multiplexed (coarse or dense)
ZONE A	Geographic Area relating to Zone A MI WHQA markets
ZONE B	Geographic Area relating to Zone B MI WHQA markets