



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

3.6 GHz Band Transition Progress Report 2020

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1: Introduction and Background

1. On the 16 December 2019, ComReg published its 3.6 GHz Band Transition Progress Report for 2019 as Document 19/115.¹ In that document, ComReg provided the background to the 2017 3.6 GHz Band Spectrum Award (“Award”)², a summary of ComReg’s 3.6 GHz Band Transition Principles and Framework, and an update on the progress of the 3.6 GHz Band Transition for 2019. That information has not been repeated in this Report and readers are referred to Document 19/115 if they wish to access that information.
2. The purpose of this report is to provide interested parties with an update on the progress of 3.6 GHz Band Transition and associated Transition Activities in 2020 by Existing Licensees and Winning Bidders. While transition in some areas remains, due in the main to the rollout of services by Winning Bidders proving slower than ComReg had anticipated, a substantial amount of the spectrum in the award, in some cases all of it, is available for use by the Winning Bidder and is being deployed in the provision of services such as higher speed FWA and, more recently, 5G services.
3. Appendix 1 of this report shows the Lots³ which have commenced as of 3 December 2020 under the Winning Bidders’ 3.6 GHz Band Liberalised Use Licences.

¹ ComReg Document 19/115 – 3.6 GHz Band Transition Progress Report 2019 – published 16 December 2019. <https://www.comreg.ie/publication-download/3-6-ghz-band-transition-progress-report-2019>

² <https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/3-6ghz-band-spectrum-award/>

³ The 3.6 GHz Band spectrum award consisted of 594 lots spread over nine geographic regions (four rural and five urban), see ComReg Document 17/38 – Information Notice: Results of the 3.6 GHz Band Spectrum Award – published 22 May 2017.

2: Progress update on the 3.6 GHz Band Transition

4. ComReg has actively engaged with Winning Bidders and Existing Licensees since the completion of the Award in order to develop and implement appropriate Transition Plans. ComReg has placed particular importance on areas where Winning Bidders have sufficiently developed plans to roll-out new services.
5. ComReg has also encouraged Winning Bidders and Existing Licensees to engage and develop mutually agreeable Transition Plan Proposals, which ComReg would then consider with a view to finalising a Transition Plan.
6. In December 2017, ComReg requested that Winning Bidders submit detailed Transition Plan Proposals by which to develop Localised Transition Plans (“LTPs”). The current position is summarised below:
 - Meteor Mobile Communications Limited (trading as “eir”) (“Meteor”) ⁴ and Vodafone Ireland Limited (trading as “Vodafone”) (“Vodafone”) provided their respective Transition Plan Proposals to ComReg in 2019.
 - Dense Air Ireland Limited (“Dense Air”) has yet to submit a Transition Plan Proposal.
 - Imagine Communications Ireland Limited (“Imagine”) has not submitted a Transition Plan Proposal as ComReg has commenced 100% of the Lots won by Imagine.
 - As of 1 September 2020, Three Ireland (Hutchison) Limited’s (trading as “3”) (“3IRL”) Lots are now fully commenced following PermaNet Limited’s (“PermaNet”) migration from the 3.6 GHz Band.

2.1 Localised Transition Plans

7. To date, one set of LTPs has been developed and implemented, being those required for the transition by Imagine from 3.6 GHz Band Lots awarded to Vodafone.

⁴ In light of ComReg’s preference for Winning Bidders to engage with Existing Licensees to develop mutually agreeable Transition Plan Proposals, ComReg notes that Eir is engaging with relevant Existing Licensees with a view to progressing Transition by coordinating and agreeing Transition Activities.

8. In April 2019, Vodafone submitted its final Transition Plan Proposal to develop LTPs for the rollout of new services across ten sites using 3.6 GHz Band spectrum previously held by Imagine under the FWALA licensing scheme. ComReg consulted on the proposal, and on 25 June 2019, ComReg implemented LTPs for Vodafone's rollout of these ten sites. Those LTPs required Imagine to complete all relevant Transition Activities by 5 November 2019.
9. Upon receipt of a joint request from Imagine and Vodafone, ComReg extended the relevant Commencement and Transition Dates and all Transition Activities were expected to be completed by 2 February 2020. Due to the Covid-19 pandemic, those Transition Activities were suspended by the agreement of both parties. ComReg continues to engage with Imagine and Vodafone to determine when they will restart their Transition Activities in line with the LTPs.

2.2 Transition Activities – Existing Licensees

Existing Licensees

10. Progress has also been made in the orderly transition of the Existing Licensees from the 3.6 GHz Band, including:
 - e-Nasc Éireann Teoranta ('Enet'), Lighthouse Networks Ltd (trading as Lightnet), PermaNET, and Western Broadband Networks Ltd (trading as WestNet) have all completed their transition from the 3.6 GHz Band;
 - Ripplecom Communications Ltd ("Ripplecom") has migrated from over 87% of the spectrum it originally licensed under its 3.6 GHz Band Transition Unprotected Licence ("TUL")⁵. Ripplecom is currently licensed to use 25 MHz of 3.6 GHz Band spectrum in one Transition Service Area ("TSA")⁶;

⁵ A Licence in the form as set out in Schedule 4 of the Wireless Telegraphy (3.6 GHz Band Licences) Regulations 2016, which entitles the holder to keep and have possession of Apparatus for the provision of FWA services in one or more than one FWALA Service Area on a Non-Interference and Non-Protected Basis, subject to the terms and conditions set out therein.

⁶ Under Transition Licences existing licensees are permitted to operate in local service areas, referred to as Transition Service Areas ("TSAs"), where they previously operated under the 3.6 GHz Band FWALA licensing scheme which ceased following the Award on 31 July 2017. At the start of Transition, all TSAs had a 20 km radius boundary around a defined centre point. As Transition has progressed, the area of some TSAs has been reduced to reflect completion of Transition activities which affect only part of a TSA and to facilitate ongoing Transition Activities in the remainder of the TSA.

- Imagine has migrated from 40% of the TSAs originally licensed under its 3.6 GHz Band Transition Protected Licence (“TPL”)⁷, and has reduced its spectrum usage by 39% in the TSAs licensed under its current TPL.

2.3 3.6 GHz Band spectrum availability

Winning Bidders

11. Significant progress has been made in the orderly transition of the 3.6 GHz Band and this progress has facilitated the commencement of spectrum rights for all new 3.6 GHz Band licensees to varying degrees:

- On 1 September 2018, ComReg commenced 100% of the Lots won by Imagine;
- On 1 September 2020, ComReg commenced 100% of the Lots won by 3IRL;
- As of 3 December 2020, ComReg has commenced 97% of the Lots won by Meteor;
- As of 3 December 2020, ComReg has commenced 79% of the Lots won by Dense Air; and
- As of 3 December 2020, ComReg has commenced 77% of the Lots won by Vodafone. For 2% of Vodafone’s Lots not yet commenced, ComReg offered to commence those Lots in July 2018 but this was declined by Vodafone.

Figure 1 below shows the percentage of commenced lots by each Winning Bidder as of 3 December 2020.

⁷ A Licence in the form as set out in Schedule 4 of the Wireless Telegraphy (3.6 GHz Band Licences) Regulations 2016, which entitles the holder to keep and have possession of Apparatus for the provision of FWA services in one or more than one FWALA Service Area, subject to the terms and conditions set out therein.

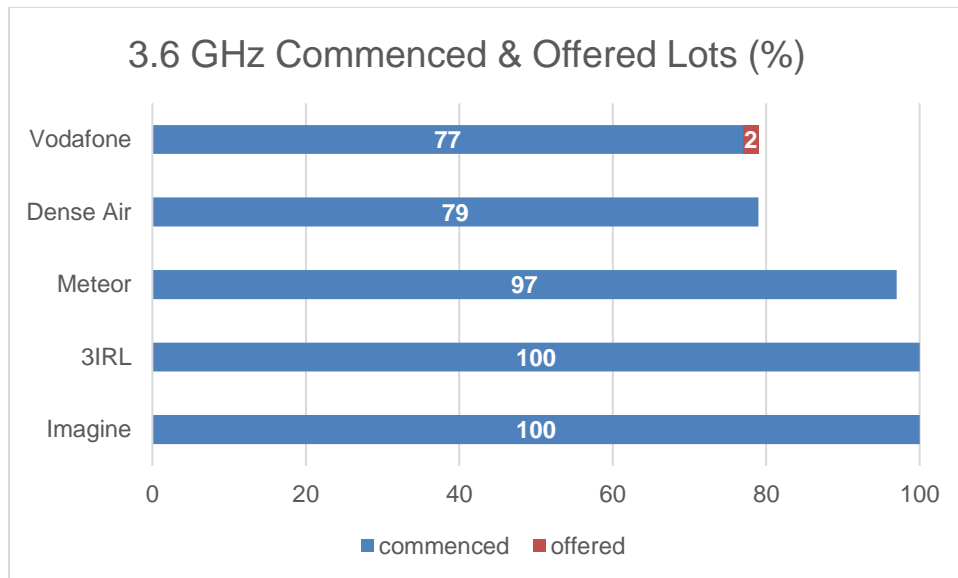


Figure 1: 3.6 GHz Commenced & Offered Lots (%)

2.4 Commercial services

12. While the rollout of services by Winning Bidders has been slower than ComReg had anticipated, a substantial amount of the 3.6 GHz Band spectrum has been made available for use by Winning Bidders, which has enabled Winning Bidders to launch higher speed FWA⁸ and, more recently, new 5G services.⁹

⁸ In February 2019, Imagine launched its plans for a fixed wireless broadband network in rural areas, see <https://www.irishtimes.com/business/technology/imagine-plans-300m-wireless-broadband-network-1.3792296>

⁹ For example:

- In November 2020, Eir stated that it provides 5G coverage across 111 towns and cities Ireland: <https://www.techcentral.ie/eir-claims-5g-mobile-coverage-for-45-of-the-population/>.
- In September 2020, 3IRL launched commercial 5G services: <https://www.newstalk.com/news/three-ireland-launches-5g-network-1082507>; and
- In July 2020, Vodafone deployed in 57 sites across 11 counties: <https://www.siliconrepublic.com/comms/vodafone-5g-ireland-ericsson-dss>.

3: 3.6 GHz Band Spectrum Lease Licences

13. Following the publication of four Spectrum Lease Determinations¹⁰ in 2020, ComReg issued 3.6 GHz Band Spectrum Lease Licences to Imagine which allowed it to lease 3.6 GHz Band spectrum from Dense Air, Meteor, 3IRL, and Vodafone at various locations for short three-month periods. The Lease Licences have assisted Imagine with its 3.6 GHz Band Transition Activities and have improved the delivery of services for consumers during the Covid-19 situation.

¹⁰ See:

- ComReg Document 20/51 – Spectrum Lease Determination: Lease of spectrum rights in the 3.6 GHz band from each of Meteor Mobile Communications Limited, Three Ireland (Hutchinson) Limited, and Vodafone Ireland Limited to Imagine Communications Ireland Limited. – published 19 June 2020;
- ComReg Document 20/77 – Spectrum Lease Determination: Lease of spectrum rights in the 3.6 GHz band from each of Meteor Mobile Communications Limited, Three Ireland (Hutchinson) Limited, and Vodafone Ireland Limited to Imagine Communications Ireland Limited – published 25 August 2020;
- ComReg Document 20/87 – Spectrum Lease Determination: Proposed lease of spectrum rights in the 3.6 GHz band from Dense Air Limited to Imagine Communications Ireland Limited – published 22 September 2020; and
- ComReg Document 20/97 – Spectrum Lease Determination: Proposed leases of spectrum rights in the 3.6 GHz band from each of Meteor Mobile Communications Limited, Three Ireland (Hutchinson) Limited, and Vodafone Ireland Limited to Imagine Communications Ireland Limited – published 13 October 2020.

4: Next Steps

14. ComReg will continue to actively engage with Winning Bidders and Existing Licensees in order to develop and implement appropriate Localised Transition Plans in line with the principles of the Transition licensing framework. Additionally, ComReg will commence Lots for Winning Bidders as they become available following the completion of necessary Transition Activities.
15. ComReg intends to publish non-confidential, substantive material relating to 3.6 GHz Band Transition following the completion of transition.

Appendix 1: Commencement of Lots under 3.6 GHz Band Liberalised Use Licences

A 1.1 Following completion of Transition Activities by Winning Bidders and Existing Licensees in the areas and frequency ranges affected, ComReg has commenced Lots in Regions under 3.6 GHz Band Liberalised Use Licences as follows. The tables below show the frequency assignments and associated regions for each 3.6 GHz Band Liberalised Use Licence granted to date, and the status of the associated Lots as of 3 December 2020.

A 1.2 The colours in the tables indicate the following:

Green – Lots that have commenced.

Pink – Lots that have not yet commenced.

Amber – Lots that ComReg offered to commence but were declined by the relevant licensee.

Blue – Lots no longer refunded in line with para 2.75 of the IM: Delayed availability of Lots caused by Winning Bidder.

Black – Lots that are not applicable to the Licensee.

Dense Air									
	FREQUENCY RANGE		3580 - 3585 MHz	3585 - 3590 MHz	3590 - 3595 MHz	3595 - 3600 MHz	3600 - 3605 MHz	3605 - 3610 MHz	3610 - 3615 MHz
		3410 - 3435 MHz							
	LOT	A1	B22	B23	B24	B25	B26	B27	B28
REGION	Borders, Midlands and West								
	South West								
	East								
	South East								
	Dublin City and Suburbs								
	Cork City and Suburbs								
	Limerick City and Suburbs								
	Galway City and Suburbs								
	Waterford City and Suburbs								

Imagine													
	FREQUENCY RANGE	3560 - 3565 MHz	3565 - 3570 MHz	3570 - 3575 MHz	3575 - 3580 MHz	3580 - 3585 MHz	3585 - 3590 MHz	3590 - 3595 MHz	3595 - 3600 MHz	3600 - 3605 MHz	3605 - 3610 MHz	3610 - 3615 MHz	3615 - 3620 MHz
	LOT	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29
REGION	Borders, Midlands and West												
	South West												
	East												
	South East												

Meteor																					
REGION	LOT	FREQUENCY RANGE	3615 - 3620 MHz	3620 - 3625 MHz	3625 - 3630 MHz	3630 - 3635 MHz	3635 - 3640 MHz	3640 - 3645 MHz	3645 - 3650 MHz	3650 - 3655 MHz	3655 - 3660 MHz	3660 - 3665 MHz	3665 - 3670 MHz	3670 - 3675 MHz	3675 - 3680 MHz	3680 - 3685 MHz	3685 - 3690 MHz	3690 - 3695 MHz	3695 - 3700 MHz		
					B29	B30	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45
REGION	Borders, Midlands and West																				
	South West																				
	East																				
	South East																				
	Dublin City and Suburbs																				
	Cork City and Suburbs																				
	Limerick City and Suburbs																				
	Galway City and Suburbs																				
	Waterford City and Suburbs																				

Three																							
REGION	LOT	FREQUENCY RANGE	3700 - 3705 MHz	3705 - 3710 MHz	3710 - 3715 MHz	3715 - 3720 MHz	3720 - 3725 MHz	3725 - 3730 MHz	3730 - 3735 MHz	3735 - 3740 MHz	3740 - 3745 MHz	3745 - 3750 MHz	3750 - 3755 MHz	3755 - 3760 MHz	3760 - 3765 MHz	3765 - 3770 MHz	3770 - 3775 MHz	3775 - 3780 MHz	3780 - 3785 MHz	3785 - 3790 MHz	3790 - 3795 MHz	3795 - 3800 MHz	
					B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60	B61	B62	B63	B64
REGION	Borders, Midlands and West																						
	South West																						
	East																						
	South East																						
	Dublin City and Suburbs																						
	Cork City and Suburbs																						
	Limerick City and Suburbs																						
	Galway City and Suburbs																						
	Waterford City and Suburbs																						

Vodafone																							
REGION	LOT	FREQUENCY RANGE	3475 - 3480 MHz	3480 - 3485 MHz	3485 - 3490 MHz	3490 - 3495 MHz	3495 - 3500 MHz	3500 - 3505 MHz	3505 - 3510 MHz	3510 - 3515 MHz	3515 - 3520 MHz	3520 - 3525 MHz	3525 - 3530 MHz	3530 - 3535 MHz	3535 - 3540 MHz	3540 - 3545 MHz	3545 - 3550 MHz	3550 - 3555 MHz	3555 - 3560 MHz	3560 - 3565 MHz	3565 - 3570 MHz	3570 - 3575 MHz	3575 - 3580 MHz
					B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19
REGION	Borders, Midlands and West																						
	South West																						
	East																						
	South East																						
	Dublin City and Suburbs																						
	Cork City and Suburbs																						
	Limerick City and Suburbs																						
	Galway City and Suburbs																						
	Waterford City and Suburbs																						