



Commission for  
**Communications Regulation**

# **Response to Consultation on the Proposed Release of the 410-415.5 / 420-425.5 MHz Sub-band**

## **Response to Consultation**

**Reference:** ComReg 17/105

**Date:** 08/12/2017

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## Chapter 1

# 1 Introduction

- 1 The Commission for Communications Regulation (ComReg) is the statutory body responsible for the regulation of the electronic communications (telecommunications, radiocommunication and broadcasting networks), postal and premium rate sectors in Ireland in accordance with European Union (EU) and Irish law.
- 2 ComReg manages the radio frequency spectrum (“radio spectrum” or “spectrum”) and the national numbering resource, among other responsibilities. Radio spectrum is a valuable national resource underpinning important economic, social and communications activities.
- 3 In response to its Radio Spectrum Management Strategy 2016 (ComReg 16/49<sup>1</sup>), ComReg noted the interest in the 410-414 MHz / 420-424 MHz sub-band and suggestions that it could be commercially or operationally beneficial to release spectrum rights of use for this band. ComReg further noted that it would commence a public consultation on the future use of the band. To this end, ComReg referenced its plans to conduct a consultation in its current Action Plan.
- 4 During its analysis of the 410-414 / 420-424 MHz band, ComReg noted that there is unused spectrum either side of the 410-414 / 420-424 MHz sub-band. Therefore, ComReg proposed to make the amount of available spectrum symmetrical and make available 2 x 5.5000 MHz, from 410-415.5 MHz / 420-425.5 MHz (*“the 400 MHz band”*).
- 5 ComReg, in Document 17/67<sup>2</sup>, carried out a preliminary consultation on the award of spectrum rights of use in the 400 MHz band on a technology neutral basis and explored, at a high level and amongst other things, likely demand for this spectrum along with possible uses and how spectrum rights of use might be assigned.
- 6 There were 12 respondents to Document 17/67. These respondents were:
  - Eircom Limited (trading as “eir” and “open eir”) and Meteor Mobile Communications Limited (“MMC”) (collectively referred to as “eir Group”)
  - Electricity Supply Board Networks Ltd. (“ESBN”)

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<sup>1</sup> <https://www.comreg.ie/publication-download/response-to-consultation-15131-on-comregs-radio-spectrum-management-strategy-2016-2018>

<sup>2</sup> <https://www.comreg.ie/publication-download/consultation-proposed-release-410-415-5-420-425-5-mhz-sub-band>

- European Utilities Telecom Council (“EUTC”)
  - Huawei Technologies Co. Ltd. (“Huawei”)
  - Joint Radio Company Ltd. (“JRC”)
  - L.M. Ericsson Ltd. (“Ericsson”)
  - M2M Smart Grid Communications Lab (“M2M”)
  - Nokia Corporation (“Nokia”)
  - Sensus
  - Sigma Wireless Communications Ltd. (“Sigma Wireless”)
  - Vodafone Ireland Ltd. (“Vodafone”)
  - WHP Telecoms Ltd. (“WHP”)
- 7 The purpose of this Response to Consultation is to summarise the views of submissions received to Document 17/67, set out ComReg’s preliminary views on certain issues raised pursuant to Document 17/67, and outline how it intends to further advance the process of assigning rights of use in the 410-415.5 / 420-425.5 MHz sub-band.
- 8 Throughout this document, ComReg has had regard to the statutory functions, objectives and duties relevant to its management of the radio frequency spectrum, the most relevant of which are summarised in Annex 1. ComReg has also had regard to all relevant information available to it, which includes all submissions received to Document 17/67.
- 9 ComReg notes all views expressed by respondents to Document 17/67. ComReg will form a preliminary view on the matters discussed in the next consultation phase (scheduled for Q2 2017) having considered these responses along with other relevant evidence including any expert advice it may obtain in the intervening period (See Section 6 - “Next Steps”). In particular, ComReg will prepare a draft RIA on the assignment process for the 400 MHz band which will be informed by the various responses received to this consultation. ComReg will address certain issues as appropriate in this document.

## Chapter 2

# 2 Potential Uses of the band

### Summary of ComReg's position in Document 17/67

10 In Document 17/67, ComReg set out its preliminary views on the following potential uses for the 400 MHz band:

- Smart Metering and Smart Grids;
- Public Protection and Disaster Relief (PPDR); and
- Other potential uses (Digital Mobile Radio (DMR) / TETRA Enhanced Data Services (TEDS)).

11 ComReg asked the following questions on the potential uses of the band in order to form a view as to whether the release of rights of use in the 400 MHz band is necessary, and to inform any award design considerations as part of that release.

Q. 1 Do you agree with ComReg's analysis of potential uses outlined above? If not, please provide supporting evidence for your view.

Q. 2 Do you have any suggestions for additional potential uses? Please provide reasons and evidence to support a potential use case.

### Views of Respondents

12 11 respondents commented on the above in relation to:

- a) potential uses outlined in Document 17/67; and
- b) other additional potential uses.

### Potential uses outlined in Document 17/67

13 M2M Smart Grid Communications Lab, EUTC, JRC, WHP, Sensus and Sigma Wireless agree with ComReg's identification of smart metering and smart grids as potential uses.

14 M2M Smart Grid Communications Lab further submits that an additional potential use case is a dedicated National Internet of Things (IoT) Network to support critical applications such as Health, Industrial and Energy sectors. M2M contends that operation in the licenced 400 MHz band is ideal for such a network and that a number of technologies are under development to address these requirements. For such a network, M2M states that a minimum of 2 x 500 kHz is required.

- 15 Huawei agrees with the identification of smart metering as a potential use but also believes that it is a good candidate for PPDR and DMR applications.
- 16 Ericsson submits that, in its view, that the proposal to use this spectrum for smart metering fails to consider alternative solutions for smart metering or the potential for high availability broadband services in this band. However, it agrees with ComReg in the identification of this band for the potential use of smart grid and recommends that ComReg should not discount this band as having value in the PPDR market.
- 17 Nokia agrees that Broadband PPDR (BB PPDR) may be best served in other bands as evident with emergency services network (ESN) migration in other countries. Further, Nokia notes that the use of TETRA TEDS is not the best implementation of this band, in its view, for the widest value chain and resultant stakeholders.
- 18 eir Group does not agree with ComReg's preliminary view that this spectrum is unsuitable for the potential use of PPDR, DMR and TETRA TEDS. In particular, eir Group:
- supports the Radio Spectrum Policy Groups (RSPG)<sup>3</sup> recommendation that an exclusive designation of spectrum to smart grids and smart meters is not necessary;
  - criticises ComReg's preliminary analysis that smart grid and smart metering were the only suitable applications for the 400 MHz band; and
  - is of the opinion that ComReg's preliminary view is not consistent with Regulation 16(1) of the Framework Regulations (SI 333 of 2011) to "*take the utmost account of the desirability of technological neutrality in complying with the requirements of the Specific Regulations having particular regard to those designed to ensure effective competition*".
- 19 ESN submitted that:
- there are suitable alternative bands available to deliver on smart metering requirements;
  - the use of this band for narrowband technologies would be inefficient and believes that the band should be used for wide band technologies to facilitate smart grid applications;
  - PPDR, DMR and TETRA are unsuitable in this band in its view.

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<sup>3</sup> eir Group do not reference the supporting document. In that regard, ComReg notes that this view is expressed by the RSPG Report on Strategic Sectoral Spectrum Needs.



## ComReg's Position

- 20 In relation to the concerns expressed by eir Group, that “*ComReg appears to express a bias towards the use of this spectrum for smart metering applications*” and its concerns regarding the potential exclusive designation of the 400 MHz spectrum to smart metering, ComReg notes for the avoidance of any doubt, the award for 400 MHz spectrum will be conducted in a manner which respects the principles of service and technology neutrality.
- 21 However, prior to putting in place measures to assign spectrum rights of use it is necessary for ComReg to assess potential uses of the spectrum in order to design an award process that can accommodate all such uses. Having regard to potential uses is important in designing any award process in order to provide flexibility for different potential users (and technologies) to acquire the amount and combination of spectrum rights of use that best meets their needs. For example, such considerations could be relevant to inform lot size, award format, competition caps and the amount of spectrum available.
- 22 eir Group will be familiar with this approach, having participated in a number of recent spectrum awards. For example, ComReg recalls that the recent 3.6 GHz award was service and technology-neutral but recognised that the band offered significant potential for the provision of wireless broadband networks and services, including fixed wireless, small cells (i.e. mobile) and backhaul links in wireless broadband access networks or combinations thereof. While ComReg did not favour any particular use, it was important to consider a range of possible uses in order to ensure that the design of the award did not preclude any particular outcome. This assessment is important in promoting the most efficient outcome.
- 23 Similarly, Document 17/67 recognises that this band offers significant potential for the provision of smart metering and smart networks and seeks the views of stakeholders in identifying other potential uses including their views on PPDR, DMR and TETRA Enhanced Data Services (TEDS). Document 17/67 set out ComReg's preliminary views which were based on the responses it received to its radio spectrum strategy<sup>4</sup>. Further, Document 17/67 sought views from interested parties on potential uses of the spectrum in order to allow any award process to facilitate the broadest range of potential uses having regard to its objective to ensure the efficient assignment and use of the radio spectrum.

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<sup>4</sup> <https://www.comreg.ie/publication-download/submissions-to-consultation-15131-on-comregs-draft-radio-spectrum-management-strategy>

- 24 In particular, in Document 17/67, ComReg noted that *“The potential uses identified here are ComReg’s preliminary views. ComReg has not made a decision on the future use of this band and all comments regarding the potential uses identified above are welcome. ComReg is open to suggestions from interested parties on uses for the band other than those listed above.”*
- 25 In that regard, ComReg’s position remains unchanged with regard to the proposal that licences in the 400 MHz band would be awarded on a service and technology neutrality basis, such that all technologies and services that comply with any proposed technical standards would be permitted. In addition, the said licences would not require the provision of any particular technology or service.
- 26 ComReg notes that certain respondents (M2M Smart Grid Communications Lab, EUTC, JRC, WHR, Sensus, and Sigma) generally agreed with the proposed potential uses as set out in Document 17/67.
- 27 ComReg notes that Huawei and eir Group believe that PPDR, DMR and TETRA could be good candidates for implementation within the band.
- 28 ComReg also notes M2M Smart Grid Communications Lab’s suggestion that another potential use is for a national IoT network.
- 29 As stated earlier, for the avoidance of any doubt, the award for the 400 MHz spectrum will be conducted in a manner which respects the principles of service and technology neutrality. The winning bidder/applicant will determine how best it wishes to use its spectrum rights of use, subject to licence conditions.
- 30 Based on responses received and the apparent level of interest shown in the 400 MHz band, ComReg considers that there is sufficient justification to further develop the proposed release of spectrum rights of use in the 400 MHz band.

## Chapter 3

# 3 Key Aspects of the Proposed Award of Spectrum

## 3.1 National Licences

### Summary of ComReg's position in Document 17/67

31 Document 17/67, proposed to make 400 MHz spectrum available on a national basis and posed the following question:

Q. 3 Do you agree with ComReg's proposal for national licences? Please provide reasons and supporting evidence for your answer.

### Views of Respondents

32 11 of the 12 respondents provided views on the proposal for national licences. All 11 respondents agreed that 400 MHz spectrum should be made available on a national basis.

### ComReg's position

33 As stated at paragraph 8 of this document, ComReg will form a preliminary view on this matter in the next consultation phase.

## 3.2 Lot Size

### Summary of ComReg's position in Document 17/67

34 In Document 17/67 ComReg proposed to make available 2 x 5.500 MHz divided into 11 lots of 2 x 500 kHz with the following questions.

Q. 4 Is 2 x 500 kHz an appropriate lot size? Are there larger lot sizes that are equally preferable and suitable to all technologies and potential users? Please provide reasons and supporting evidence for your answer.

Q. 5 What is the requisite amount of spectrum required for each of the potential uses as set out in Chapter 2? Is there a risk of the spectrum not being used to deliver the preferred service (or left completely unused) if a licensee is assigned less than the amount they require? Please provide reasons and supporting evidence for your answer.

## Views of Respondents

- 35 ComReg received differing views regarding lot size.
- 36 Sensus, Sigma Wireless and M2M Smart Grid Communications Lab agree with lot sizes of 2 x 500 kHz.
- 37 WHP Telecom observes that 2 x 500 kHz is suitable for DMR, narrowband UHF and WiMAX type applications but argued that a larger bandwidth is required if a successful applicant wishes to deploy CDMA or LTE technologies. Further, WHP submits that the assignment process should allow applicants to require several contiguous blocks as otherwise the award might run the risk of spectrum being left sterile.
- 38 EUTC submits that 2 x 3 MHz is required to deliver a smart grid solution, citing that some countries (not identified) are seeking 2 x 5 MHz. Similarly, JRC submits that the Smart Grid service requires 2 x 3 MHz of paired contiguous spectrum rights of use and that the release process should be designed to deliver 2 x 3 MHz of spectrum rights of use to the Smart Grid service at a minimum.
- 39 ESNB does not believe that 2 x 500 kHz is an appropriate lot size. Rather, ESNB submits that the 400 MHz award should ensure wideband users have access to spectrum requiring a minimum of 2 x 1.25 MHz carriers.
- 40 Nokia observes that although 500 kHz may serve certain needs, it may also hinder employment of a wider value chain of broadband services (for example, monitoring substations or low latency services). In addition, given the growth of smart grid applications, it argues that any constraint on bandwidth may impact meeting the service level agreements (SLA) required.
- 41 Ericsson submits that while there is nothing in principle preventing a single licence holder from acquiring 10 individual lots in order to have a 2 x 5 MHz licence, the probability of this happening is greatly reduced as it is easier for another party to hinder this strategy by bidding aggressively for just 1 or 2 lots.
- 42 eir Group believes that arguments may be made for larger lot sizes. However, eir Group has no objection to 2 x 500 kHz lots provided there is no constraint or cap on the quantity of spectrum rights of use that a bidder may acquire. This would preserve the flexibility for a 2 x 5 MHz block to be acquired by a single bidder. This it argues is also fully aligned with the principle of technology neutrality.

## ComReg's Position

- 43 Firstly, ComReg observes that a number of respondents (Ericsson, ESNB, Nokia and JRC) expressed concern that a lot size of 2 x 500 kHz might not be sufficient to allow for the rollout of certain services.

- 44 For the avoidance of doubt, 2 x 500 KHz does not represent the maximum amount of spectrum available for any applicant / bidder. As noted in Document 17/67 the lot size represents the smallest building block that potential users may use to aggregate spectrum into larger amounts. In that regard, certain award formats allow bidders to aggregate lots into packages of spectrum that would constitute larger blocks in line with a bidder / applicants respective business plans. To the extent that a bidder / applicant is exposed to the risk that it may win unwanted subsets of its demand, there are award design measures available to ComReg to mitigate or eliminate this risk. For example, and contingent on the final award design, an applicant / bidder with a minimum requirement of 2 x 3 MHz could be able to apply / bid for a package of six 2 x 500 kHz lots subject to any caps that may be in place. In such circumstances packages are either accepted in their entirety or rejected but never accepted in part, eliminating the risk of winning unwanted subsets of demand. ComReg intends to further develop its proposals with regard to such matters during the next consultation phase of the award.

### 3.3 Channel Bandwidth

#### Summary of ComReg's position in Document 17/67

- 45 In Document 17/67, ComReg proposed not to restrict potential licensees to specific bandwidths, but instead proposed to allow potential licensees to use their blocks with whatever bandwidth they wish.

Q. 6 Do you agree with ComReg's proposal on channel bandwidth? Provide reasons and supporting evidence for your answer.

#### Views of Respondents

- 46 ComReg received 12 responses regarding channel bandwidth.
- 47 In summary, all respondents largely agree with ComReg's proposal not to specify a channel bandwidth.
- 48 ESNB does not favour ComReg's statement in paragraph 54 of Document 17/67 that the proposal for channel bandwidth could "*allow up to 11 licensees to deploy different technologies in the band*", further arguing that this would cause multiple licensees to operate multiple narrowband applications to the detriment of wideband applications such as smart grid.

- 49 JRC argues that a channel bandwidth of 12.5 kHz or 25 kHz would readily support smart grid technology and services, however for the service to be deployed effectively a wide band service utilising 2 x 3 MHz is required. JRC further contends that as ComReg in it's view has identified smart grid as the only relevant application there is no spectrum excess demand and that ComReg should allocate 2 x 3 MHz of the band to smart grid applications.

### **ComReg's Position**

- 50 In response to ESNB, ComReg refers to its clarification in section 3.2 of this document – that a single user may acquire spectrum rights of use in more than one lot subject to any potential spectrum competition cap ComReg might put in place.
- 51 JRC's observation that ComReg has identified smart grid as the only relevant application for this band is incorrect. ComReg clearly identified smart metering as another potential use. Further, ComReg's views that DMR or PPDR type applications were unsuitable for this band were only presented on a preliminary basis.

## **3.4 Licence Duration**

### **Summary of ComReg's position in Document 17/67**

- 52 ComReg noted that it will continue to establish the appropriate duration of spectrum rights in accordance with its statutory objectives, powers and duties (including regulation 9(6) of the Authorisation Regulations), and on a case by case basis having regard to the particular facts and circumstances of the matter at hand. ComReg asked the following in relation to licence duration.

Q. 7 Considering the likely technologies that will be deployed in this spectrum, please provide information on the asset life of the network elements.

### **Views of Respondents**

- 53 Eleven respondents provided views on this topic:
- Ericsson and Nokia state that the expected lifetime of the assets are 8 and 10+ years respectively;
  - Sigma Wireless, Sensus, WHP, Huawei and M2M Smart Grid Communications Lab believe that licences should be of 15 years or more;
  - ESNB and JRC request a licence duration of 25 years or longer;
  - eir Group recommends a short lifetime as this would allow ComReg to facilitate alternative uses of the spectrum band as technology develops.

## ComReg's Position

- 54 As outlined in Document 17/67, ComReg considers a number of important factors when determining an appropriate licence duration. These include:
- the likely technologies that will be deployed using the spectrum;
  - an appropriate period for return on investment; and
  - the asset life of the network elements of the various technologies to be deployed.
- 55 ComReg is mindful of the need for regulatory certainty and efficient infrastructure investment provided by a spectrum licence of an appropriate duration. In setting licence durations, it is important for ComReg to strike an appropriate balance between offering investment certainty to licensees while also not potentially tying up spectrum for unduly long periods, which would stifle the potential for other interested parties to obtain access to this spectrum in the future. ComReg will take due account of the responses received in relation to licence duration and will further develop proposals during the next consultation phase of the award.

## Chapter 4

# 4 Award Mechanism and Fee Structure

## 4.1 Award Mechanism

### Summary of ComReg's position in Document 17/67

- 56 In Document 17/67, ComReg discussed possible options for an award mechanism.
- 57 A key objective for ComReg in designing an award mechanism is to encourage the efficient use and ensure the effective management of the radio frequency spectrum. In broad terms, ComReg noted that there are two main ways in which spectrum can be assigned via (a) administrative assignment and (b) a market mechanism.
- 58 ComReg sought views from interested stakeholders in relation to the same with the following question.

Q. 8 What are your views on the most appropriate assignment mechanism for rights of use in the 400 MHz band? How does this mechanism encourage the efficient use and ensure the effective management of the radio spectrum? Please provide reasons and supporting evidence for your answer.

### Views of Respondents

- 59 Respondents were mixed in their views as to how the available spectrum should be assigned.
- 60 Sigma Wireless and Sensus agree that a market mechanism such as an auction is appropriate where demand exceeds supply.
- 61 Vodafone believes that an auction would be the most efficient way of assigning this spectrum, noting that auctions should provide a level playing field for all interested parties and would be a suitable mechanism to prevent speculative acquisition and / or spectrum hoarding.
- 62 eir Group shares ComReg's preference for the use of a market mechanism to assign rights to use spectrum in this band, particularly where demand is likely to exceed supply. It contends that an application stage would determine if an auction is necessary. eir Group further submits that, in its opinion, the auction format should be a CCA or a SMRA to facilitate outcomes that require different aggregate quantities of spectrum.



- 63 Nokia notes that both dedicated carrier assignment via auction and also administrative assignment are suitable. However, Nokia contends that the award of these spectrum rights of use should not be wholly focused on monetization given the socio-economic benefits for smart grid enablement. Nokia further qualifies that is not to say revenue streams cannot be facilitated, from either outright purchase or as a managed service.
- 64 ESNB considers that the administrative allocation of these spectrum rights of use to it in order to deploy Smart Grid is the optimum outcome. In particular, ESNB contends that the 400 MHz band has the potential to attract speculative bids whereby a party wishes to acquire spectrum rights of use and then hopes to find a use for it. ESNB claims that such speculative purchasing is likely to result in no usage of the spectrum at all. ESNB give the examples of the 400 MHz and 1785 - 1805 MHz ranges that were previously assigned using an auction and never utilised.
- 65 ESNB further notes, and without prejudice to the above views, that if a competitive mechanism was determined by ComReg to be the more suitable, then an auction would prove the best option.
- 66 WHP notes that market mechanisms are an effective way of ensuring maximum benefit from spectrum and ensuring that only serious bidders are involved. However, WHP argues that with the type of potential uses identified for this band, the connection between investment and revenues generated is less clear. WHP does not believe that demand will exceed supply for this sub-band and so maintains that an auction would result in the lots being awarded at the minimum price, resulting in little revenue and possibly some “unused allocations”. Given the potential importance to critical national infrastructure of the spectrum rights of use under consideration, an administrative assignment may be more appropriate than an auction in this instance.
- 67 JRC notes that a minimum of 2 x 3 MHz of spectrum should be allocated to the smart grid service via an administrative award process. ComReg in parallel could choose to award the remainder of the sub-band on a technology neutral basis via a competitive process, however, based on its perceived lack of excess demand, JRC contends that it is questionable whether such a process would be effective.

### **ComReg’s Assessment**

- 68 ComReg notes ESNB’s concerns in relation to the use of auctions to determine spectrum rights of use in the 400 MHz and 1785 -1805 MHz and subsequent use of that spectrum. However, such matters do not arise from the decision to assign spectrum using a market mechanism instead of administrative assignment. Rather, these matters relate to the design features of the award process and the conditions attached to same.

69 In particular, ComReg observes ESBNs concerns regarding inefficient use of the 400 MHz band are matters especially relevant in the context of:

- a) what should be the appropriate rollout and usage obligations on potential 400 MHz rights holders by which to ensure the efficient use of their respective rights;
- b) the consequences for licensees for non-compliance with such obligations;<sup>5</sup> and
- c) ComReg's proposals on fees and fee structure. In particular, spectrum usage fees (SUFs) serve an important role in ensuring the efficient use of spectrum by incentivising and encouraging the return of unused or underutilised spectrum rights.<sup>6</sup>

70 These matters are independent of the mechanism used to assign the spectrum (auction or administrative assignment) and such matters could arise in either case if items (a) – (c) are not sufficiently considered when designing an award process. In that regard, ComReg will fully consider the above and form a preliminary view on same as part of the next consultation phase.

## 4.2 Spectrum Fees

71 In Document 17/67 ComReg noted its approach to setting spectrum fees. ComReg's current approach to setting spectrum fees is set out in Section 7.6 of its Spectrum Strategy Statement and, in particular, that:

- spectrum fees for rights of use are an important tool by which ComReg can ensure the efficient use of such rights; and
- the level of the spectrum fee (and any minimum price) will continue to be determined on a case by case basis in light of the relevant circumstances of the spectrum award (such as the particulars of the rights of use/spectrum band, and international benchmarks.)

72 ComReg posed the following question.

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<sup>5</sup> In relation to (b) and (c), ComReg would draw particular attention to:

- regulation 17(10) of the Framework Regulations; and
- regulations 16 and 17 of the Authorisation Regulations relating to enforcement – compliance with obligations and suspension or withdrawal of authorisation, rights of use for radio frequencies or rights of use for numbers, respectively.

<sup>6</sup> For example, the final applicable fee for the 400 MHz and 1785 - 1805 MHz awards was payable in full before the relevant licences were issued (i.e. payment of fees was entirely upfront). In more recent awards, ComReg has taken the approach of splitting the fees between an upfront Spectrum Access Fee (SAF) and annual Spectrum Usage Fees (SUFs) paid over the duration of the licence.

Q. 9 What are your views on ComReg's current approach to setting fees/minimum prices and the factors that inform the level at which a minimum price is set in an award? Please provide reasons and supporting evidence for your answer.

## Views of Respondents

73 Regarding ComReg's approach to setting fees as set out in section 4.9 of consultation Document 17/67:

- Sigma Wireless and Sensus propose that ComReg consider the mechanisms used for the pricing of other national licences in similar bands such as digital trunking. Both respondents counsel against pricing mechanisms that are based upon a count of network elements as this would be disadvantageous to those wishing to deploy smart meters and smart grids.
- eir Group and WHP believe that the initial fee should be low so as to invite interest, but not too low so as to invite frivolous bidders. Huawei also favours this approach to enable successful business models and to support the required investments.
- ESNB contends that the reserve price should be very low as, in its view, the threat of collusion is very low. ESNB maintains that a split of 50% between upfront fees and ongoing fees should provide the optimum solution.
- JRC reiterates its view that demand for this spectrum will be low and so contends that annual fees should be set. Such annual fees should, in its view, be based only on the direct effort needed to administer the spectrum.
- Nokia agrees on the methods used to determine minimum price but states that the price structure should be best agreed with potential stakeholders to ensure there is no choking of demand.

## ComReg's Assessment in Relation to Award Mechanism and Spectrum Fees

74 ComReg notes and welcomes the various views expressed by respondents and, as indicated in paragraph 9 of this document, ComReg will form a preliminary view on this matter during the next consultation phase.

## Chapter 5

# 5 Other Issues Raised

## 5.1 EIRP Limit and Guard Bands

75 In Document 17/67, ComReg proposed (though did not specifically ask for comment on) an EIRP limit of 50 W and for applicants to internalise guard bands that their choice of technology may require.

76 ComReg received 4 responses regarding the above issues:

- Sigma Wireless and Sensus agree with the proposals set out by ComReg on the condition that all systems using this spectrum should comply with relevant standards for out-of-band emissions.
- ESNB agrees with ComReg's proposal to internalise guard bands in spectrum assignments provided that users obtain sufficient spectrum to deliver their services whilst simultaneously being able to incorporate a guard band. ESNB agrees with ComReg's proposal for a 50 W EIRP limit.
- eir Group submits that in order to have a truly technology neutral approach, ComReg must establish a clear process on how interference mitigation can be addressed between differing technologies. eir Group references CEPT ECC documents in relation to the BEM to be adhered to.

### ComReg's Assessment

77 ComReg notes the views expressed and will analyse the suitability of introducing a BEM or perhaps some other coordination technique(s). ComReg will finalise its views on this issue in the next consultation phase.

## 5.2 Use it or lose it conditions

78 eir Group proposes that ComReg impose *use it or lose it* conditions. eir Group give the example of the 3.6 GHz award where the coverage obligation could be expressed as the rollout of 78 sites<sup>7</sup> anywhere in the State within 3 years of the licence commencement date, as set out in Table 3 of ComReg Document 16/71<sup>8</sup>.

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<sup>7</sup> 78 sites is the aggregate number of regional rollout base stations required for a national licensee holding up to and including 100 MHz in the 3.6 GHz band.

<sup>8</sup> [https://www.comreg.ie/media/dlm\\_uploads/2016/08/ComReg-1671.pdf](https://www.comreg.ie/media/dlm_uploads/2016/08/ComReg-1671.pdf)

## ComReg's Assessment

79 Unlike the recent 3.6 GHz award process, where it was known that the spectrum was being made available for Mobile Fixed Communications Networks, the spectrum proposed for release in this award is not subject to an EU harmonising decision. ComReg is releasing the spectrum on a technology neutral basis and so comparisons with the 3.6 GHz award or associated steps or processes inevitably has certain limitations. Consequently, ComReg believes it would be premature at this point to comment on the possible introduction of *use it or lose it* conditions, but will revisit the matter of these conditions more generally during the next consultation phase.

## 5.3 Third Party Uses

80 In Document 17/67, ComReg stated that the spectrum may be available for third party use, whereby licensees can allow third parties to use the spectrum without the need for individual licensing by each third party user.

81 Sensus and Sigma Wireless both commented on this issue, stating that, in their opinion, it is very important for a licensee to:

- be able to provide services to a third party who purchases and retains title to transceivers used in conjunction with such services without the need for the party to apply to ComReg for its own license or to register its transceivers with ComReg; and
- to grant rights of use to a third party under a commercial arrangement between the licensee and the third party without the need for the third party to apply to ComReg for its own license or to register its transceivers with ComReg.

## ComReg's Assessment

82 The current third party business radio regulations<sup>9</sup> are informative in this regard. In these regulations, the definition of a licensee is as follows:

*“Licence” means a Licence under section 5 of the Act of 1926, to keep, have possession of install, maintain, work and use apparatus in a specified place in the State;*

*“Licensee” means any of the following:*

- (i) *the holder of a Licence (“the Primary Licensee”);*

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<sup>9</sup> <http://www.irishstatutebook.ie/eli/2005/si/646/made/en/print>

(ii) a person with whom the Primary Licensee has entered into a contract relating to the use of the apparatus in conformity with a Licence granted under these Regulations (“the Secondary Licensee”).

- 83 The regulations further provide that “Nothing in these Regulations shall absolve the Licensee from any requirement in law to obtain such additional consents, permissions, authorisations or licences as may be necessary for the provision the service and for the exercise of his or her rights or discharge of his or her obligations under the Licence.”
- 84 ComReg’s preliminary view at this point is that the proposed scheme is likely to closely mirror the Third Party Business Radio conditions.

## 5.4 Configuration of the Spectrum

- 85 In Document 17/67, ComReg proposed that the spectrum should be made available for FDD operation as it would ensure consistency with both the extant ECC Decisions<sup>10</sup> as well as other services deployed in the 400 MHz to 470 MHz band. The introduction of both FDD and TDD has the potential to cause technical compatibility issues including guard bands and restricted blocks. ComReg’s initial proposal is to make this band available for FDD operation only; this is a matter that will be explored further in the next consultation.

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<sup>10</sup> ECC Decisions (04)04 and (06)06

## Chapter 6

# 6 Next Steps

- 86 ComReg intends to procure services to assist in the design of a suitable spectrum award process and to advise it on an appropriate fee structure. This initial consultation has revealed considerable interest in the award of the 400 MHz band and, taking all views expressed into account, ComReg will publish a further consultation, scheduled for Q2 2018 which will progress the award further.

## Annex: 1 Legal Basis

A 1.1 The Communications Regulation Acts 2002-2011 (the “2002 Act”), the Common Regulatory Framework (including the Framework and Authorisation Directives as transposed into Irish law by the corresponding Framework and Authorisation Regulations), and the Wireless Telegraphy Acts 1926 to 2009 set out, amongst other things, powers, functions, duties and objectives of ComReg that are relevant to the management of the radio frequency spectrum in Ireland.

A 1.2 Apart from licensing and making regulations in relation to licences, ComReg’s functions include the management of Ireland’s radio frequency spectrum in accordance with ministerial Policy Directions under section 13 of the 2002 Act, having regard to its objectives under section 12 of the 2002 Act, Regulation 16 of the Framework Regulations and the provisions of Article 8a of the Framework Directive. ComReg is to carry out its functions effectively, and in a manner serving to ensure that the allocation and assignment of radio frequencies is based on objective, transparent, non-discriminatory and proportionate criteria.

A 1.3 Regulation 10(1) of the Authorisation Regulations provides that, notwithstanding Section 5 of the Wireless Telegraphy Act, 1926, but subject to any regulations under Section 6 of that Act, ComReg may only attach those conditions listed in Part B of the Schedule to the Authorisation Regulations.

A 1.4 Regulation 19 of the Authorisation Regulations permits ComReg to impose fees for spectrum rights of use which reflect the need to ensure the optimal use of the radio frequency spectrum. ComReg is required to ensure that any such fees are objectively justified, transparent, non-discriminatory and proportionate in relation to their intended purpose and take into account the objectives of ComReg as set out in Section 12 of the 2002 Act and Regulation 16 of the Framework Regulations.

A 1.5 Under Section 5(1) of the 1926 Act, ComReg may, subject to that Act, and on payment of the prescribed fees (if any), grant to any person a licence to keep and have possession of apparatus for wireless telegraphy in any specified place in the State. Section 5(2) provides that, such a licence shall be in such form, continue in force for such period and be subject to such conditions and restrictions (including conditions as to suspension and revocation) as may be prescribed in regard to it by regulations made by ComReg under Section 6.



A 1.6 There is a legal requirement to be authorised to provide an electronic communications network or service in Ireland. Under Regulation 4(1) of the Authorisation Regulations, any undertaking intending to provide an electronic communications network or service shall, before doing so, notify ComReg of its intention to provide such a network or service, following which that undertaking will be deemed to be authorised under Regulation 4(4). The General Authorisation contained in Document 03/81R58 sets out the general conditions of authorisation.