



Commission for  
**Communications Regulation**

# **3.6 GHz Band Spectrum Award - questions and answers and related matters**

Information Notice

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**An Coimisiún um Rialáil Cumarsáide  
Commission for Communications Regulation**

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## **Additional Information**

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# Contents

<b>Section</b>	<b>Page</b>
1 Introduction.....	5
2 Questions and answers from the 3.6 GHz Band Spectrum Award Workshop 7	
2.1 Introduction .....	7
3 Questions and Answers submitted in accordance with Section 3.3.1 of the IM 19	
3.1 Introduction .....	19
4 Other matters .....	35
5 Next Steps.....	37

# Annexes

## Section

## Page

Annex 1: Correspondence from GSMA and ComReg's response to same 38

Annex 2: DotEcon's assessment of GSMA's letter of 13 September 2016 39

## Chapter 1

# 1 Introduction

- 1.1 In Document 16/71<sup>1</sup>, and following consultation on its proposals in Document 16/22<sup>2</sup>, ComReg published its Information Memorandum (IM) setting out the processes and procedures for the 3.6 GHz Band Spectrum Award Process.
- 1.2 The processes and procedures that ComReg will employ in the 3.6 GHz Band Spectrum Award implement ComReg's Decision D04/16 as detailed in Document 16/57<sup>3</sup>. Interested Parties are referred to Document 16/57 and to previous documents in the consultation process for a description and summary of ComReg's 3.6 GHz Band Spectrum Award proposals, as reflected in its Decision D04/16 contained in Chapter 8 of Document 16/57.
- 1.3 This Information Notice relates to the following two matters:
  - the publication of questions properly submitted to the 3.6 GHz Band Spectrum Award and ComReg's final responses to same; and
  - ComReg's consideration of correspondence received from an interested party relating to the reserve price benchmarking report (Document 16/70b) from ComReg's independent award design consultants, DotEcon.
- 1.4 In relation to the first matter and in accordance with the questions and answers procedures as set out in the IM, ComReg sets out in this document its final answer to each of the questions properly submitted in the question and answer phase of the 3.6 GHz Band Spectrum Award process. These include:
  - questions received at the 3.6 GHz Band Spectrum Award Workshop held on 14 September 2016 ("Workshop"); and
  - questions submitted in accordance with Section 3.3.1 of the IM.
- 1.5 In total, ComReg received 42 questions before the deadline of 16:00 hours (local time) on 28 September 2016. This total includes 18 questions received

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<sup>1</sup> ComReg Document 16/71 – 3.6 GHz Band Spectrum Award, Information Memorandum - published 24 August 2016.

<sup>2</sup> ComReg Document 16/22 – 3.6 GHz Band Spectrum Award, Draft Information Memorandum - published 16 March 2016.

<sup>3</sup> ComReg Document 16/57 – Response to Consultation and Decision on 3.6 GHz Band Spectrum Award D04/16 - published 11 July 2016.

at the Workshop and 24 questions received in accordance with Section 3.3.1 of the IM.

1.6 In relation to the second matter, this document sets out ComReg's consideration of the correspondence received from the GSMA dated 13 September 2016 relating to Document 16/70b. In light of this correspondence, ComReg is publishing, alongside this Information Notice, a Benchmarking Update from DotEcon as Document 16/88.

1.7 This Information Notice is structured as follows:

- **Chapter 2:** lists the questions raised by attendees at the Workshop and sets out ComReg's final answer to each;
- **Chapter 3:** lists the questions submitted in accordance with Section 3.3.1 of the IM and sets out ComReg's final answers to each;
- **Chapter 4:** sets out ComReg's consideration of the GSMA correspondence having considered DotEcon's assessment of same;
- **Chapter 5:** sets out information on the next steps in the Award Process;
- **Annex 1:** contains the correspondence received from GSMA and ComReg's response to same; and
- **Annex 2:** provides DotEcon's consideration of the GSMA correspondence.

1.8 For the avoidance of doubt:

- all provisional answers issued by ComReg on its website are superseded by the corresponding final answers set out in this document;
- the Information Memorandum published on 24 August 2016, as clarified by (i) the answers set out in this document and (ii) any other amendments communicated by ComReg to Interested Parties and/or Bidders after the publication of this document, should be relied upon by Interested Parties in preparing their Applications and by Bidders in preparing for the Award Process.

## Chapter 2

# 2 Questions and answers from the 3.6 GHz Band Spectrum Award Workshop

## 2.1 Introduction

- 2.1 ComReg held the Workshop on 14 September 2016 in the Spencer Hotel in Dublin. For those unavailable to attend in-person a live webinar was available to Interested Parties.
- 2.2 On 16 September 2016, ComReg made the presentation slides and the webinar recording of the Workshop available on its website<sup>4</sup>. The webinar recording captures the questions raised and ComReg's provisional response to these questions on the day at the Workshop.
- 2.3 In the interests of transparency and clarity, ComReg sets out below in written form the questions raised on the day in anonymised format and ComReg's final answers to same.
- 2.4 It should be noted that the questions and final answers in written form below are not transcribed *verbatim* from the workshop. With the aim of providing clarity to all interested parties, editorial changes have been applied to the questions to remove colloquial phrasing while maintaining the substantive points of the question. Similar editing has also been applied to ComReg's final answers and, where appropriate, additional information (e.g. references to the IM) has been included.

### 2.1.1 Question and Answer to Workshop Question 1

#### Question

- 2.5 The licence duration for the 3.6 GHz Band Liberalised Use Licence is 15 years. If, for example, a Bidder wins some spectrum and the EU moves to a licence duration of 25 years, as is being discussed in the media, what will be the impact on the award? Will the price of the Spectrum Usage Fee continue over 25 years? Will it remain at 15 years? Will there be some further calculations?

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<sup>4</sup> <http://www.comreg.ie/industry/radio-spectrum/spectrum-awards/3-6ghz-spectrum-award/> .

## Answer

- 2.6 By way of background, ComReg observes that the notion of a 25 year duration of a right of use for harmonised radio spectrum forms part of the European Commission's recently issued proposals for a Directive of the European Parliament and of the Council establishing the "European Electronic Communications Code". Given that the final form of these proposals is entirely unclear, including any national legislation that would seek to implement same, it is neither possible nor appropriate for ComReg to make any comment at this juncture except to say that it would, of course, act in accordance with its statutory functions, objectives, powers and duties applicable at the relevant time.

### 2.1.2 Question and Answer to Workshop Question 2

#### Question

- 2.7 If demand (based on Bidders' Initial Bids) does not exceed supply, then the Main Stage will not be progressed and the spectrum will be assigned to the Bidders. If that happens, at what price are the spectrum rights of use assigned?

#### Answer

- 2.8 Paragraph 2.60 of the IM provides that where the Main Stage of the Award Process is not required, the Base Price for a 3.6 GHz Band Liberalised Use Licence is the sum of the Reserve Prices for all Lots in all Regions to be included in a 3.6 GHz Band Liberalised Use Licence.
- 2.9 The Main Stage of the Auction will not be required if, for every Lot Category, the total number of Lots in that Lot Category specified in Bidders' Initial Bids is less than or equal to the number of Lots available in the Lot Category. Where this occurs, each Bidder will automatically become a Winning Bidder and will be awarded the Lots it applied for with its Initial Bid at the Reserve Price per Lot in each Lot Category.
- 2.10 Bidders will be notified of the number of Lots won and the Base Price for that Package of Lots.
- 2.11 As set out in Section 3.6.2 of the IM, Assignment Bidders may be required to pay an additional amount on top of their Base Price ("Additional Price") for their specific frequency assignments.



### 2.1.3 Question and Answer to Workshop Question 3

#### Question

2.12 If demand (based on Bidders' Initial Bids) is only exceeded in one Region, do all Lots go forward to the Main Stage or just that Region?

#### Answer

2.13 As described in Section 3.4.3 of the IM, if there is excess demand in one Lot Category, all Lot Categories will be included in the Main Stage of the Auction, regardless of whether there was excess demand in the respective Lot Category at the Qualification Stage.

2.14 As set out in paragraph 3.118 of the IM, Lots in different Lot Categories may be substitutes for at least some Bidders. Therefore, even if there is no excess demand for a Lot Category on the basis of Initial Bids, some Bidders may increase their demand for Lots in such a Lot Category if the price for other Lot Categories (which they preferred at Reserve Prices based on their Initial Bids) increases.

### 2.1.4 Question and Answer to Workshop Question 4

#### Question

2.15 Are Eligibility Points transferrable within and between Regions during the Main Stage?

#### Answer

2.16 Yes. Bidders can switch Eligibility between different Lot Categories.

2.17 As set out in paragraph 3.137 of the IM, during the Primary Bid Rounds a Bidder may reduce demand in one Lot Category and use the associated Eligibility to increase its demand in other Lot Categories (either within the same Region or in one or more different Regions), subject to the constraints arising from the application of the Competition Caps and the Activity Rules set out in Section 4.2.2 of the IM. As set out in paragraph 3.136 of the IM, a Bidder's Eligibility can never increase during the Main Stage.

2.18 During the Supplementary Bids Round, a Bidder may Bid for any Package of Lots, subject to not breaching the Competition Cap in any Region and all relevant constraints on the Supplementary Bid Amount (as set out in Section 4.2.3 of the IM) being satisfied.

## 2.1.5 Question and Answer to Workshop Question 5

### Question

- 2.19 Can a Bidder submit a Relaxed Primary Bid that is greater than Initial Eligibility?
- 2.20 Does this also apply in the Supplementary Round for the Relative Cap?
- 2.21 Does the Relaxed Primary Bid have to comply with the 150 MHz Competition Cap?

### Answer

- 2.22 During the Primary Bid Rounds, a Bidder may submit a Relaxed Primary Bid for a Package of Lots with Eligibility greater than its Initial Eligibility (the Eligibility of the Package of Lots included in its Initial Bid), provided that the requirements for submitting the Relaxed Primary Bid are satisfied. The requirements for submitting Relaxed Primary Bids are described in detail in Section 4.2.2 of the IM.
- 2.23 It will also be possible for a Bidder to submit Supplementary Bids for Packages of Lots with Eligibility that exceeds the Bidder's Initial Eligibility. Packages of Lots with Eligibility greater than the Bidder's Initial Eligibility will be subject to a Relative Cap, with the Package of Lots specified in the Bidder's Initial Bid being the constraining package, and Reserve Prices being the constraining prices. Note that a Final Price Cap will also apply to the Bid Amounts for these packages, with the relevant cap on the Bid Amount being the lower of the Relative Cap and the Final Price Cap. The constraints on Supplementary Bid Amounts are described in detail in Section 4.2.3 of the IM.
- 2.24 Please also see the Explanatory Memorandum (Document 16/23) for further information on the bidding constraints arising from the Initial Bid.
- 2.25 As set out in paragraph 4.12, all Bids during the Main Stage of the Auction are subject to a Competition Cap of 150 MHz in each Region. For the avoidance of doubt, this includes Relaxed Primary Bids.

## 2.1.6 Question and Answer to Workshop Question 6

### Question

- 2.26 In relation to the Alliance negotiations, after the Main Stage every Winning Bidder will be informed who the other Winning Bidders are and they will know the quantity of each Lot that the other Winning Bidders have bought, or have won. They will then be free to go and try and work out an Alliance that might work for them in the Assignment Round. They may have to have quite free

ranging conversations with the other Winning Bidders, and that might involve expressing views on preferences for the assignments. Some of those discussions might be successful, some might not. In any event, they will involve quite an exchange of information.

- 2.27 **(WQ 6A)**: Are there any restrictions on the content of those discussions that have to be held at that time?
- 2.28 **(WQ 6B)**: During those discussions, it may become very obvious, that there is an assignment outcome that would be suitable for all Winning Bidders, and with which all Winning Bidders would be happy. Is it possible, or is there a way that the Winning Bidders can bring that outcome forward and skip the Assignment Round, rather than be forced to go through a bidding mechanism and risk a different outcome?

### Answer

- 2.29 In relation to Workshop Question 6A, ComReg refers to Section 3.3.5 of the IM generally and paragraphs 3.77 to 3.79 in particular. ComReg would also stress that the rules set out in Section 3.3.5 apply in addition to the restrictions which arise under Irish and EU competition law which continue to apply regardless of this Award Process (see paragraph 3.60 of the IM in this regard).
- 2.30 Accordingly, it is the sole responsibility of actual or potential Alliance members to make their own informed assessment about such matters, including the potential advantages and disadvantages of participating in, or seeking to form and participate in, an Alliance and, from a competition law perspective, what information may be exchanged and what arrangements can be entered into.
- 2.31 In relation to Workshop Question 6B, ComReg confirms that it will run the Assignment Round in the circumstances described in the IM. In the event that all Winning Bidders devise a mutually-acceptable frequency plan during the period provided for the formation of Alliances, then ComReg observes that they could all submit zero bids in the Assignment Round and propose said frequency plan during the Negotiation Phase. Any such proposal also needs to comply with the rules for the Negotiation Phase as set out in Section 4.3.11 of the IM, including paragraph 4.223 of the IM which details the requirement that any such frequency assignment proposal ensures that each Winning Bidder receives contiguous blocks of spectrum (above and below State Services) in accordance with the amount of spectrum awarded to them in each Region in the Main Stage.

## 2.1.7 Question and Answer to Workshop Question 7

### Question

2.32 Will the Workshop slides be published?

### Answer

2.33 This question was submitted via the webinar. ComReg provided a written response to this question through the webinar portal during the Workshop as follows:

*“Yes – they will be made available on the ComReg website in due course”*

2.34 ComReg published the slides and the webinar recording on Friday 16 September 2016. These are available on ComReg’s website and can be accessed at the following link:

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

## 2.1.8 Question and Answer to Workshop Question 8

### Question

2.35 Do Winning Bidders know the identity of the other Winning Bidders at the end of the Main Stage? If not, how would an Alliance be formed for assignment?

### Answer

2.36 Yes, this is detailed in Section 4.2.6 of the IM. The results of the Main Stage will be announced to all Bidders. For the avoidance of doubt, the identity of each Winning Bidder and the number of Lots won by each Winning Bidder in each Region will be made available to all Bidders at the end of the Main Stage.

2.37 The procedure for forming an Alliance for the Assignment Stage and the applicable restrictions are set out in Sections 3.6.1 and 4.3.2 of the IM.

## 2.1.9 Question and Answer to Workshop Question 9

### Question

2.38 Will the final frequency plan be made public at the end of the auction?

## Answer

2.39 As set out in Section 4.4.1 of the IM, at the end of the Auction (if an Auction is required) the results of the Auction (including the final frequency plan) will be released to all Bidders and, in tandem, made public.

### 2.1.10 Question and Answer to Workshop Question 10

#### Question

2.40 If one or more of the Alliance members is either unable or unwilling to increase their Deposit, can the deadline be extended if one or more of them fails to meet that obligation? Does ComReg have the option to extend that three day window?

#### Answer

2.41 As set out in paragraph 4.156 of the IM, if a deposit call is issued, ComReg will specify a deadline not less than three Working Days from the giving of notice of the deposit call by which time the required funds must have been received as cleared funds in the bank account specified by ComReg. Therefore, ComReg reserves its discretion to provide for more than three Working Days before which funds must have been received, depending on the circumstances pertaining at the end of the Assignment Round.

2.42 As set out in paragraph 4.210 of the IM, ComReg also reserves the discretion to void all of an Assignment Bidder's Assignment Bids if, following the completion of the Assignment Round but before the results of the Assignment Round have been announced, the Leading Member of said Assignment Bidder has not provided the required funds by the deadline set by ComReg.

### 2.1.11 Question and Answer to Workshop Question 11

#### Question

2.43 Are there defined rules as to how much the deposit calls will be and when such calls will be made? At what point does ComReg decide you need to make that deposit?

#### Answer

2.44 Yes. The IM sets out the procedure for deposit calls and ComReg refers Interested Parties to the relevant sections of the IM for the definitive text. In general terms and by way of summary ComReg may call for a deposit:

- during the Primary Bid Rounds (see paragraphs 4.97 to 4.101 of the IM)

- where a Bidder's Deposit falls below 50% of its highest Bid made so far in the Auction, ComReg reserves the right to require the Bidder to increase its Deposit to at least 50% and not more than 100%<sup>5</sup> of its highest Bid.
- following the Supplementary Bids Round (see Section 4.2.5 of the IM)
  - ComReg reserves the right to issue a Deposit Call of up to 100%<sup>5</sup> of a Bidder's highest Bid at this point; and
- following the Assignment Round (see Section 4.3.8 of the IM)
  - ComReg reserves the right to issue a Deposit call of up to 100%<sup>5</sup> of the amount required to ensure that the Assignment Bidders Deposit is equal to the sum of its Base Price and the amount of its highest Assignment Bid.

## 2.1.12 Question and Answer to Workshop Question 12

### Question

2.45 In terms of the Assignment Round, what role, if any, does the A-Lot play, in terms of determining the Assignment Options? If a Winning Bidder had an A-Lot and some B-Lots, would it try and stack them all the bottom end?

### Answer

2.46 As set out in paragraph 4.162 of the IM, the purpose of the Assignment Stage is to determine the specific frequencies to be assigned to Winning Bidders in the Award Process in relation to the frequency-generic B-Lots only.

2.47 As set out in paragraph 4.166 of the IM, A-Lots have specific predetermined frequency assignments. Therefore, frequency assignments for A-Lots do not need to be determined in the Assignment Stage. The Winning Bidder for an A-Lot in the Main Stage would be automatically assigned the spectrum rights of use for spectrum in the range 3 410 MHz to 3 435 MHz which will be made available as a single frequency-specific lot per Region.

2.48 An Assignment Bidder would be unable to make an A-Lot contiguous with any B-Lot, because a portion of the band (3 435 – 3 475 MHz) is currently licensed

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<sup>5</sup> The Bidder may be required to increase its Deposit above 100% of its highest Bid if monies held by ComReg are subject to negative interest rates. Any such increase will simply reflect the deficit in the Deposit held by ComReg which would otherwise result from a negative interest rate applied to Exchequer Notes held by ComReg. See Section 3.3.3 of the IM.

for use by State Services. This frequency range separates all A-Lots from the B-Lots.

### **2.1.13 Question and Answer to Workshop Question 13**

#### **Question**

2.49 Has the CCA mechanism been used already in Europe for this type of award?

#### **Answer**

2.50 The CCA format has been widely used across Europe for spectrum auctions. For example, a CCA has been used in:

- Switzerland (February 2012);
- Denmark (June 2012)
- the Netherlands (December 2012);
- the United Kingdom (February 2013); and
- Slovenia (April 2014).

2.51 ComReg previously used a CCA format for its Multi-Band Spectrum Award (“MBSA”) in 2012 and similar rules are used for the present award.

### **2.1.14 Question and Answer to Workshop Question 14**

#### **Question**

2.52 Will bidders know if there has been a default on the deposit that results in a different number of unallocated lots?

#### **Answer**

2.53 As described in paragraph A7.39 of the IM, the implications of the Final Price Cap do not provide an absolute guarantee in relation to particular winning outcomes. For example, if an exceptional event results in certain Bids or Bidders being excluded from consideration, this could affect the analysis described in Annex 7 by altering the number of provisionally unassigned Lots as of the end of the Primary Bid Rounds.

2.54 Though unlikely, such an event or any other unanticipated event cannot be ruled out. ComReg reserves the right to make a Deposit Call after the Supplementary Bids Round and, in the case that one or more Bidders failed to

meet this Deposit Call, it is possible that their Bids could be excluded from the determination of Winning Bids.

- 2.55 Section 4.1.5 of the IM provides that should an exceptional circumstance arise during any stage of the Auction, ComReg has the discretion to take steps (including cancelling or rescheduling a round) that are appropriate and proportionate to the exceptional circumstances that have arisen and which further the objectives of the Award Process. ComReg, at its absolute discretion, will determine whether a situation of exceptional circumstance has arisen. Any such decision would be made by ComReg in accordance with its statutory functions, objectives and duties.

### **2.1.15 Question and Answer to Workshop Question 15**

#### **Question**

- 2.56 What is ComReg going to do with any unassigned Lots after the award?

#### **Answer**

- 2.57 ComReg set out its position on the unsold Lots in its Decision (Document 16/57). Specifically, ComReg retains its discretion regarding how it might treat any unsold Lots depending on the factual circumstances arising from the Award Process, save for the decision that unsold Lots will not be considered for assignment for a reasonable period after the Award Process and, in any event, will not be considered for assignment for a period of at least 2 years.

### **2.1.16 Question and Answer to Workshop Question 16**

#### **Question**

- 2.58 How will the auction software be made available and how will the mock auctions work?

#### **Answer**

- 2.59 ComReg will host mock auctions for Bidders using the Electronic Auction System (EAS). This allows Bidders to have access to the EAS and gain experience of how to use the system and familiarise themselves with it in advance of the Main Stage and/or Assignment Stage of the Auction (if required).
- 2.60 A mock auction will be available for all Bidders but will be held separately for each individual Bidder. Other participants in a Bidder's mock auction will be strictly limited to staff from ComReg and/or the Award Implementation



Consultant (DotEcon). These participants will engage in a range of fictional strategies and budgets in order to give the Bidder exposure to the Auction Rules and experience of how the EAS operates given different scenarios that may arise.

- 2.61 Mock auctions will take place remotely, where the Bidder will log onto the EAS using authentication credentials provided by ComReg. Telephone support will be available to a Bidder if any issues or difficulties arise during the mock auction. Bidders may be able to participate in more than one mock auction, where the need arises. ComReg retains discretion to facilitate additional mock auctions as required.
- 2.62 ComReg is working with DotEcon to investigate the potential for allowing Bidders to conduct their own mock auctions independently and at a time that may be more convenient. This would allow Bidders to test their own IT facilities and procedures whilst familiarising themselves with the EAS system. ComReg cannot commit, at this time, to this facility being made available as the feasibility of the solution is still being investigated with DotEcon.
- 2.63 Finally, Bidders will be provided, well in advance of the Auction, with access to a standalone version of the winner and price determination software that can be used to process test cases. This should help Bidders with understanding the mechanics of the winner and price determination procedure.

### **2.1.17 Question and Answer to Workshop Question 17**

#### **Question**

- 2.64 You intend to allocate a price to each package of B-Lots in each round. In each Primary Bid Round of the Main Stage will the Auctioneer set prices for a package size of 5 MHz, a package size of 10 MHz, 15 MHz, 20 MHz, 25 MHz etc... all the way through to 145 MHz and 150 MHz ?

#### **Answer**

- 2.65 The Auctioneer does not set prices for every possible Package of Lots. As described in paragraphs 4.40 to 4.48 of the IM, a Primary Bid is made by specifying the number of Lots in each of the Lot Categories that a Bidder wishes to acquire at the prevailing Round Prices. The auctioneer sets the price per Lot in each Lot Category. The Bidder can then select the number of Lots that it wishes to bid for in each Lot Category.
- 2.66 This allows Bidders to build a Package that best suits their individual requirements. The Primary Bid Amount associated with a Bidder's preferred Package of Lots (calculated as the sum of the prevailing Round Prices

associated with the Lots included in the selected Package) will be shown by the EAS to the Bidder prior to submitting a Bid.

- 2.67 In the Supplementary Bids Round, a Bidder can bid for multiple Packages and choose the Bid Amount for each Package at its discretion, subject to the constraints detailed in Sections 3.5.2 and 4.2.3 of the IM. As described in paragraph 4.116 of the IM, each individual Supplementary Bid specifies a Package of Lots (the number of Lots in each Lot Category that a Bidder wishes to acquire) and a Bid Amount for that Package.

### **2.1.18 Question and Answer to Workshop Question 18**

- 2.68 A question was submitted via the webinar portal in relation to an example on slide 97 of the Workshop slides. The question was not clear and the querist stated that it would work through the example some more and thanked ComReg.
- 2.69 ComReg noted, in its provisional answers published on its website on 26 September 2016, that as set out in Section 3.3.1 of the IM, the Question and Answer phase of the Award Process is open until 16:00 hours (Irish time) on 28 September 2016 should any interested party have further questions on the Award Process.

## Chapter 3

# 3 Questions and Answers submitted in accordance with Section 3.3.1 of the IM

## 3.1 Introduction

- 3.1 This chapter sets out ComReg's final answers to each of the questions submitted in accordance with Section 3.3.1 of the IM.
- 3.2 As per paragraph 3.35 of the IM, ComReg is now publishing all questions received together with their associated final answers on an anonymous basis.
- 3.3 ComReg notes that the text of some questions submitted has been amended to:
- align the capitalisation of defined terms with the IM;
  - divide questions into sections where that facilitates clarity;
  - remove information likely to identify the querist; or
  - correct what were obvious typographical errors.

### 3.1.1 Question and Answer to Question 1

#### Question

- 3.4 In order to prepare robust business cases, and in particular to determine workload and cash flow requirements where fixed equipment replacement is necessary, clarification is required regarding the proposed timelines for transition from existing frequency plans to a new frequency plan under a Transition Protected Licence (TPL).
- 3.5 Please provide an indicative acceptable timeframe for the completion of Transition Activities under the TPL.

#### Answer

- 3.6 Until the outcome of the Award Process is known and the deadline for submitting Transition Plan Proposals in accordance with paragraphs 3.207 to 3.209 of the IM has passed, ComReg will not be in a position to provide indicative timeframes for the completion of Transition Activities under a 3.6

GHz Band Transition Protected Licence, as the extent of any such Transition Activities will depend on this information.

- 3.7 This issue has been discussed in ComReg's consultation documents regarding the 3.6 GHz Band Award. See, in particular, paragraph 7.23 of Document 16/57 and paragraphs 7.30, 7.31, 7.32 and 7.47 of Document 15/140.

### **3.1.2 Question and Answer to Question 2**

#### **Question**

- 3.8 If, in order to accommodate Transition Protected Licence (TPL) Transition Activities, an Applicant is willing to accept a licence which is comprised of 2 non-contiguous blocks of frequencies, will such a request be accommodated during the Assignment Stage of the Auction?

#### **Answer**

- 3.9 The Assignment Stage is an integral part of the Award Process and, for the avoidance of doubt, any Transition Activities will not be considered prior to completion of the Auction.
- 3.10 As set out in paragraphs 3.165, 4.162 and 4.166 of the IM, the purpose of the Assignment Stage is to determine the specific frequencies to be assigned to Winning Bidders in relation to the frequency-generic B-Lots. A-Lots do not need to be taken into account in the Assignment Stage as the frequencies associated with A-Lots are fixed.
- 3.11 In that regard, the Auction Rules specify that ComReg will not accommodate any requests for the non-contiguous assignment of B-Lots during the Assignment Stage. Specifically:
- for the Assignment Round, paragraph 4.169 specifies that each Assignment Bidder will be awarded a contiguous block of spectrum within a Region in accordance with the number of B-Lots it wins in that Region in the Main Stage; and
  - for the Negotiation Phase, paragraph 4.223 specifies that any frequency assignment proposed will be subject to all Winning Bidders receiving contiguous blocks of spectrum (above and below State Services), in accordance with the amount of spectrum awarded to them in each Region in the Main Stage.
- 3.12 However, following the conclusion of the Award Process, and as discussed in paragraph 2.46 of Document 16/70, such requests can be assessed by

ComReg in the context of its spectrum trading framework (Document 14/10) which applies to all RSPB bands, including the 3.6 GHz Band.

### 3.1.3 Question and Answer to Question 3

#### Question

- a) Is there any restriction on the type of radio technology that can be used in the 3.6 GHz Band? In particular, can we use any type of duplexing, i.e. both FDD and TDD?
- b) If we want to operate radio equipment in an FDD duplexing mode, will the spectrum packaging allow/permit the use of FDD operation, providing we bid for the appropriate lots during the spectrum assignment phase?
- c) We realise the spectrum is auctioned on an unpaired or TDD basis, but believe there can be some advantage running services in a paired arrangement. Can this be accommodated during the assignment process?

#### Answer

3.13 The technical conditions for a 3.6 GHz Band Liberalised Use Licence are detailed in Sections 2 and 3 of Part 4 of the indicative 3.6 GHz Band Liberalised Use Licence (as set out in Schedule 1 to the Draft Regulations in Annex 2 to the IM).

3.14 In line with the technical conditions of the 3.6 GHz Band EC Decision, Section 2(2) of Part 4 of the indicative 3.6 GHz Band Liberalised Use Licence provides that:

- Only Terrestrial Systems compatible with the 3.6 GHz EC Decision can be worked and used in the 3.6 GHz Band;
- In the 3 400 – 3 600 MHz frequency range of the 3.6 GHz Band, the preferred duplex mode of operation is TDD; and
- In the 3 600 – 3 800 MHz frequency range of the 3.6 GHz Band, the duplex mode of operation is TDD.

3.15 Therefore, in the 3 600 – 3 800 MHz frequency range of the 3.6 GHz Band, TDD is the only duplex mode of operation that can be deployed.

3.16 However, in relation to the 3 400 – 3 600 MHz frequency range of the 3.6 GHz Band, the FDD mode of operation is permitted provided the Licensee complies with the Licence conditions. In this regard, ComReg refers to paragraph 4.43 of Document 16/57.

3.17 In relation to questions 3(b) and 3(c), Section 3.1 of the IM clarifies that the available spectrum right of use will be awarded on a regional basis using a TDD band plan using two types of Lots (A-Lots and B-Lots).

3.18 The rules on the Assignment Stage, as set out in Sections 3.4 and 4.3 of the IM, state that ComReg will not accommodate any requests for the non-contiguous assignment of B-Lots during the Assignment Stage. Specifically:

- for the Assignment Round, paragraph 4.169 of the IM specifies that each Assignment Bidder will be awarded a contiguous block of spectrum within a Region in accordance with the number of B-Lots it wins in that Region in the Main Stage; and
- for the Negotiation Phase, paragraph 4.223 of the IM specifies that any frequency assignment proposed will be subject to all Winning Bidders receiving contiguous blocks of spectrum (above and below State Services), in accordance with the amount of spectrum awarded to them in each Region in the Main Stage.

### **3.1.4 Question and Answer to Question 4**

#### **Question**

3.19 What technologies are in use in the state services section of the band, is there any guard band within this band or any obligation on the state services for them to use the same synchronisation recommendation with adjacent spectrum holders in Lots A and B.

#### **Answer**

3.20 As set out in paragraph 4.13 of ComReg Document 15/140, State Services in the 3.6 GHz Band relate to airborne communications systems in the frequency range 3 435 – 3 475 MHz consisting of microwave links from aircraft to fixed and mobile receiving stations around Ireland.

3.21 Due to the confidential nature of the State Services, ComReg is not in a position to release information on, among other things:

- the exact radio frequencies licensed for State Services; and
- the frequency separation between these frequencies and the edges of the Award Spectrum at 3 435 MHz and 3 475 MHz.

- 3.22 Regarding synchronisation, ComReg confirms that the licences<sup>6</sup> issued to the relevant State Services' body do not contain a synchronisation obligation or recommendation in relation to synchronisation with licences in adjacent frequency ranges such as 3.6 GHz Liberalised Use Licences. Among other things, ComReg notes that the 3.6 GHz EC Decision is without prejudice to the protection and continued operation of other existing uses in this band and that State Services is an existing use in the 3.6 GHz Band.
- 3.23 Finally, ComReg commissioned Plum Consulting to conduct a detailed adjacent channel coexistence study which modelled potentially critical interference scenarios between potential mobile/fixed communications networks (MFCN) and existing State Services in the 3.6 GHz Band.<sup>7</sup> As set out in paragraph 4.16 of Document 16/57, ComReg notes that:
- the Plum study concluded that coexistence is possible in most scenarios for both the use of the restrictive and permissive block edge masks;
  - the study also recommended that, in the unlikely event of interference from State Services into MFCN base station receivers, additional filtering at the MFCN base station would be a potential solution to mitigate such issues; and
  - co-existence between State Services and FWA operators in the 3.6 GHz Band occurs in practice under the current licensing scheme<sup>8</sup>.

### 3.1.5 Question and Answer to Question 5

#### Question

- 3.24 With reference to paragraph 1.6 of the IM, if the Applicant is a wholly owned subsidiary company and the parent company holds a General Authorisation does the applicant require a GA in its own right?

#### Answer

- 3.25 Yes. If the Applicant is a separate legal entity to its parent company and it is intended that the Applicant will be providing an electronic communications

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<sup>6</sup> Paragraph 4.27 of Document 16/57 indicates that the licence for State Services in the 3.6 GHz Band is issued pursuant to the Wireless Telegraphy (Radio Link Licence) Regulations 2009.

<sup>7</sup> Noting that the MFCN modelling parameters were based on the 2014 3.6 GHz EC Decision 2014/276/EU and ECC Report 203, while the State Services modelling parameters were based on confidential data provided by the responsible State body.

<sup>8</sup> Noting that the current scheme has been in operation since 2003 (roughly 13 years) with no adverse interference reported.

network or an electronic communications service then the Applicant is required, before providing same, to notify ComReg of its intention to do so. See, in particular, Regulation 4 of the Authorisation Regulations.

### 3.1.6 Question and Answer to Question 6

#### Question

3.26 With reference to paragraph 2.25 of the IM, please explain the types of instances that you are mindful of when saying that it may be 'outside of ComReg's reasonable control to make any or all awards'?

#### Answer

3.27 To give context to the above question, ComReg notes that the full text of paragraph 2.25 provides:

*"It should be noted that circumstances outside ComReg's reasonable control could lead to ComReg being unable to make any or all Lots in the 3.6 GHz Band available for inclusion in a 3.6 GHz Band Liberalised Use Licence of a Winning Bidder by the commencement date of 1 August 2017."*

3.28 ComReg refers to footnote 23 of the IM which identifies that the circumstances referred to in paragraph 2.25 of the IM include, for example, delayed access to certain Lot(s) caused by Transition Activities of Existing Licensees.

### 3.1.7 Question and Answer to Question 7

#### Question

3.29 In paragraph 2.25 of the IM, how can a Bidder assess the risk of ComReg not being able to make 'any or all' Lots available?

#### Answer

3.30 The risk of delayed access to any or all Lots beyond 1 August 2017 is a matter for Interested Parties to assess themselves. Information from the IM which may be relevant in any such assessment includes the following:

- Paragraph 2.25 of the IM which notes that circumstances outside of ComReg's reasonable control could lead to it being unable to make any or all Lots in the 3.6 GHz Band available for inclusion in a 3.6 GHz Band Liberalised Use Licence of a Winning Bidder by the commencement date of 1 August 2017;



- footnote 23 of the IM which notes that such circumstances include, for example, delayed access to certain Lot(s) caused by the Transition Activities of Existing Licensees;
- Section 3.8 of the IM which sets out the Transition Rules for the Award Process, including paragraph 3.211 which notes that ComReg will:
  - formulate and implement a Transition Plan, following appropriate consultation or discussion with Winning Bidders and Existing Licensees;
  - take appropriate and effective measures to ensure that there is no undue delay in the availability of liberalised 3.6 GHz Band spectrum rights of use; and
- Section 2.4.7 of the IM which provides for the refund or adjustment of Licence Fees due to the delayed commencement of Lots.

3.31 In assessing the extent of any Transition Activities and the impact this may have on access to Lots, Interested Parties may also wish to consider the existing spectrum assignments and service areas of the Existing Licensees, which can be viewed online on ComReg's Interactive FWALA Map<sup>9</sup>.

### 3.1.8 Question and Answer to Question 8

#### Question

3.32 In paragraph 2.26 of the IM, ComReg in this clause informs Interested Parties that they are *'Expressly put on notice of the potential for delayed access to any and all Lots in the 3.6 GHz Band'*. This is alarming for potential Bidders so please clarify if this warning relates to Lots that are not currently allocated to existing operators (Greenfield) or whether it relates to spectrum currently held by other operators (Brownfield)?

#### Answer

3.33 As stated in paragraphs 2.25 and 2.26 of the IM, the potential for delayed access to Lots relates to any and all Lots in the 3.6 GHz Band. This therefore includes spectrum currently assigned (so called Brownfield) and spectrum not currently assigned (so called Greenfield).

3.34 Until the outcome of the Award Process is known and the deadline for submitting Transition Plan Proposals in accordance with paragraphs 3.207 to

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<sup>9</sup> <http://siteviewer.comreg.ie/fwala/> .

3.209 of the IM has passed, ComReg will not be in a position to provide information on the nature and extent of any Transition Activities and the impact this may have on the availability of all Lots in the 3.6 GHz Band.

### **3.1.9 Question and Answer to Question 9**

#### **Question**

3.35 (With reference to paragraph 2.72 of the IM) This point refers to '*a pro-rata deduction if the winner has to wait for spectrum*'. How can a Winning Bidder get access to some but not all of the spectrum it is entitled to?

#### **Answer**

3.36 With Package bidding, a Winning Bid may be comprised of one or more Lots.

3.37 Where a Winning Bid contains more than one Lot, it is possible that some Lots in that Winning Bid could be subject to delayed access while other Lots are not. In this circumstance, a Winning Bidder would get access to some Lots with the anticipated commencement date of 1 August 2017, but with the remaining Lots having a later commencement date(s). Please also see the response to Question 7 above.

### **3.1.10 Question and Answer to Question 10**

#### **Question**

3.38 (With reference to paragraph 3.15 of the IM) ComReg can vary the timelines depending on circumstances. Should these 'circumstances' cause an extended delay will ComReg refund monies until the process resumes?

#### **Answer**

3.39 Paragraph 3.15 of the IM refers to the indicative timelines in Table 9 of the IM for the first two stages of the Award Process (i.e. the Application Stage and the Qualification Stage), and notes that ComReg may vary these indicative timelines, as may be necessary, in order to take into account any changed or unforeseen circumstances.

3.40 The extent to which these indicative timelines may be varied will, of course, depend on the nature and extent of the changed or unforeseen circumstances arising. Similarly, the requirement for and nature of any additional measures, such as those referred to in the question, to appropriately address the changed or unforeseen circumstances will also depend on the nature and extent of the changed or unforeseen circumstances arising.

3.41 Given that the nature and extent of these circumstances cannot be anticipated at this time, it is not possible to specify what may or may not be appropriate measures to address same. That being said, ComReg notes that:

- a refund of monies until the process resumes may be an appropriate measure in some circumstances (e.g. where there would be a substantial delay to the process);
- if exceptional circumstances arise during any stage of the Auction, it has the discretion to take steps or measures in running the Award Process which are appropriate and proportionate to the exceptional circumstances which have arisen and which further the objectives of the Award Process; and
- any steps or measures would be taken by ComReg in accordance with its statutory functions, objectives and duties.

### **3.1.11 Question and Answer to Question 11**

#### **Question**

3.42 Paragraph 3.38 refers to Authorised Agents. Please confirm that this only applies to Applicants that are not registered Irish companies. If not, is the requirement for €20m professional indemnity for the company's advisors or is it from the company or from both. If the company is required to have such cover in place how is this requirement to be demonstrated to ComReg?

#### **Answer:**

3.43 No, this is not the case. Each Bidder that is a body corporate must nominate one, or more authorised agents regardless of whether or not it is a registered Irish company.

3.44 In the ordinary course, it is only the board of directors of an Irish registered company that can bind the company. In order to make the bidding process efficient, it is necessary that one, or more individuals are authorised to bind the Bidder.

3.45 ComReg notes that Article 10 of Directive 2009/101/EC, in relation to authorisation to bind a company, is now transposed by sections 39 and 40 of the Companies Act 2014.

3.46 A legal opinion in support of evidence of authorisation to bind an Applicant, as referred to in the final bullet point of paragraph 3.38 of the IM, is only necessary in the case of foreign incorporated entities. For the avoidance of doubt, as

stated in paragraph 3.38, it is the law firm providing the opinion that is required to carry professional indemnity insurance.

### **3.1.12 Question and Answer to Question 12**

#### **Question**

3.47 (With reference to paragraph 3.41 of the IM) With regard to the "Ownership Structure Document" to what extent do applicants have to detail / list shareholders in each company within the group structure? In the event that shareholders are themselves holding companies how far does the chain of ownership have to go?

#### **Answer**

3.48 Sufficient information must be provided to enable ComReg to form a view regarding compliance with the ownership rules set out in the IM.

3.49 By way of guidance only:

- In the case of privately held groups, to the extent reasonably possible, the entire structure should be shown.
- In the case of publically held groups:
  - small shareholdings, especially in publically traded shares, are unlikely to be relevant.
  - large positions, such as those subject to the Substantial Acquisition Rules published by the Irish Takeover Panel, or their equivalent in other jurisdictions, should be included.

3.50 ComReg reserves the right to seek further information if it considers that appropriate.

### **3.1.13 Question and Answer to Question 13**

#### **Question**

3.51 (With reference to paragraph 3.47 of the IM) What bank account will ComReg use in order for bidders to assess the amount of time it will take their funds to clear?

#### **Answer**

3.52 All Deposits are to be paid into the ComReg bank account as detailed in Part 3 of the Application Form. The Application Form is set out in Annex 3 of the IM

and, for ease of use, is also set out in an editable pdf format in Document 16/71a.

### **3.1.14 Question and Answer to Question 14**

#### **Question**

3.53 (With reference to paragraph 3.71 of the IM) If ComReg provides an exemption from the application of Insider rules will other Bidders be informed of such decision and what terms, if any, are attached to the exemption?

#### **Answer:**

3.54 This information would be released after the conclusion of the Award Process.

### **3.1.15 Question and Answer to Question 15**

#### **Question**

3.55 (With reference to paragraph 3.206 of the IM) In the Transition Plan is it a consideration/condition that customers must have the availability of a similar level of service before the existing operator ceases service?

#### **Answer**

3.56 No - in defining the Transition Plan it is not a condition that customers must have the availability of a similar level of service before the existing operator ceases service. This reflects, among other things, the service- and technology-neutral obligations in relation to this band.

3.57 The Transition Plan will be determined by ComReg in accordance with its statutory objectives, functions and duties. As stated in paragraph 3.211 of the IM, ComReg will:

- formulate and implement a Transition Plan, following appropriate consultation or discussion with Winning Bidders and Existing Licensees; and
- take appropriate and effective measures to ensure that there is no undue delay in the availability of liberalised 3.6 GHz Band spectrum rights of use.

3.58 Further, paragraph 7.32 of Document 15/140 outlines that in formulating a Transition Plan, ComReg is aware of the need to Transition to the outcome of the Award Process, while minimising consumer disruption and not unnecessarily delaying the entry of new services. Please also see ComReg's

answer to Question 19 below which reiterates important information on licence expiry and mechanisms available for continuing service provision.

### **3.1.16 Question and Answer to Question 16**

#### **Question**

3.59 (With reference to Section 4.3.1 of the IM) If at the conclusion of the assignment process there is remaining spectrum in one or more Region which has not been awarded can this be made available to Winning Bidders as optional additional spectrum? If so will the 150 MHz spectrum cap still apply?

#### **Answer**

3.60 Any spectrum rights unsold at the conclusion of the Award Process will not be considered for assignment for a reasonable period after the Award Process and, in any event, will not be considered for assignment for a period of at least 2 years.

3.61 Please see answer to Workshop Question 15 in this regard.

### **3.1.17 Question and Answer to Question 17**

#### **Question**

3.62 Paragraph 4.97 Deposit Calls - what are the criteria ComReg will use to decide if it will make a Deposit Call and at what level.

#### **Answer**

3.63 Please see answer to Workshop Question 11.

### **3.1.18 Question and Answer to Question 18**

#### **Question**

3.64 Paragraph 4.97 - What guarantee do participants have that any Deposit Call from ComReg will not be discriminatory?

#### **Answer:**

3.65 ComReg is legally bound by its statutory duties to act in a non-discriminatory manner.

### 3.1.19 Question and Answer to Question 19

#### Question

3.66 Please detail the precise steps (procedural and legal/legislative) that would be required to secure an extension of the duration of existing FWALA licenses in circumstances when the Winning Bidder cannot feasibly deliver service on 1<sup>st</sup> August 2017 to maintain continuity of existing services to customers.

#### Answer

3.67 ComReg established in Document 10/29<sup>10</sup> that the 3.6 GHz FWALA licensing scheme ceases on 31 July 2017. As made clear throughout the consultation process on the 3.6 GHz band award, no 3.6 GHz FWALA licence shall be renewed or extended beyond that date and all Existing Licences in the 3.6 GHz Band will expire on 31 July 2017.

3.68 However, the IM details various mechanisms available to Existing Licensees wishing to provide a service to customers beyond 31 July 2017. In particular, Existing Licensees could:

- become a Winning Bidder and be entitled to obtain a 3.6 GHz Band Liberalised Use Licence in line with the terms and conditions set out in Section 2.4 of the IM;
- become a Winning Bidder in a Region that contains some or all of the FWALA Service Area and be entitled to apply for a 3.6 GHz Band Transition Protected Licence in line with the terms and conditions set out in Section 2.6 of the IM;
- be entitled to apply for a 3.6 GHz Band Transition Unprotected Licence in line with the terms and conditions set out in Section 2.7 of the IM provided; and/or
- conclude a commercial agreement with a Winning Bidder/s for the lease and/or transfer of liberalised 3.6 GHz spectrum rights of use.

3.69 Annex 2 of the IM sets out the Draft Regulations that would provide for the issuing of these Licences. As noted in footnote 11 of the IM, these Draft Regulations are indicative only and are subject to the Minister's consent being given pursuant to Section 37 of the Communications Regulation Act 2002 (as amended).

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<sup>10</sup> Information Notice - Fixed Wireless Access Local Area Licensing: End Date Of The FWALA Licensing Scheme In the 3.6 GHz Band.

### 3.1.20 Question and Answer to Question 20

#### Question

- 3.70 Please provide details of the fully qualified domain name, URL, and IP address at which the platform will be available. This information is needed to make sure firewalls are configured properly.

#### Answer

- 3.71 Materials for accessing and using the electronic auction system (EAS), including the URL (specifying the fully qualified domain name) for the system, will be circulated to Bidders only in advance of the Auction, but not before the week beginning 12 December 2016 (as set out in Table 9 of the IM: *Indicative timeline for the Application and Qualification Stages of the Award Process*). Note that Bidders will be able to participate in at least one mock auction prior to the real Auction, providing an opportunity for testing bidding facilities and ability to access the EAS.

### 3.1.21 Question and Answer to Question 21

#### Question

- 3.72 Please detail precisely what information parties can and cannot exchange (and in what manner) during the assignment phase as part of any collaboration talks.

#### Answer

- 3.73 It is not possible for ComReg to be prescriptive about the nature or form of communications that may or may not be permissible during the Assignment Stage (i.e. during the period permitted for the formation of Alliances and during the Negotiation Phase) as this will, clearly, depend on, among other things, the particular facts and circumstances of the parties involved in any discussions. However, Applicants should fully familiarise themselves with the rules set out in Section 3.3.5 of the IM and note that the relaxation of these rules in certain circumstances is only “*to the extent necessary to achieve specified purposes*” (see, for example, paragraph 3.64).
- 3.74 ComReg also refers to its answer to Workshop Question 6 above in this regard.



### 3.1.22 Question and Answer to Question 22

#### Question

3.75 Please confirm if there is any alternative way to make a Bid should the Electronic Auction System (EAS) not be available due to technical difficulties or other reasons. Will a history of such Bids still be available?

#### Answer

3.76 As stated in paragraphs 4.5 and 4.8 of the IM, all Bids must be submitted through the EAS unless exceptional circumstances prevent a Bidder from doing so and ComReg gives its consent to that Bidder using an alternative channel. Before granting permission for Bids to be made through other means, ComReg must be satisfied that a Bidder was unable to access the EAS due to circumstances beyond its reasonable control.

3.77 Paragraph 4.11 of the IM describes the procedures for the submission of Bids using an alternative channel noting, firstly, that it is the responsibility of the Bidder to check the acknowledgement page of the EAS to assess the successful submission of a Valid Bid(s) and to alert ComReg if technical problems are suspected to have prevented this.

3.78 In relation to the alternative channels, paragraph 4.11 of the IM also states that:

- ComReg may, at its absolute discretion, grant permission to make submissions using an alternative channel for one or more rounds, and will provide directions to the relevant Bidder on how to make such submissions; and
- Bidders must follow the express directions of ComReg for making submissions by alternative channels (such as fax, email or telephone); otherwise ComReg will consider that no submission has been made.

3.79 In relation to a history of such Bids, ComReg envisages that in these circumstances it will enter the Bids of the Bidder into the EAS on its behalf. The Bids submitted using alternative channels would therefore be recorded in the history of Bids in the EAS.

3.80 In the event that the EAS becomes unavailable more generally, ComReg has the discretion to take actions as described in Section 4.1.5 of the IM, including postponing rounds until the issue is resolved.

### **3.1.23 Question and Answer to Question 23**

#### **Question**

3.81 If the number of Lots specified in Initial Bids in a particular Region does not exceed the number of Lots available will that Region be included in the Main Stage of the Auction?

#### **Answer**

3.82 If a Main Stage is required, then all Lots in all Regions will be included in the Main Stage irrespective of whether the number of Lots specified in the Initial Bids in a particular Region does not exceed the number of Lots available in the Region. ComReg also refers to its answer to Workshop Question 3 in this regard.

### **3.1.24 Question and Answer to Question 24**

#### **Question**

3.83 In the extreme case where Initial Bid demand only exceeds supply in one Region will all Regions be included in the Main Stage of the Auction?

#### **Answer**

3.84 Please see response to Question 23 above.

## Chapter 4

# 4 Other matters

- 4.1 On 16 September 2016, ComReg received a letter from the GSMA requesting a review of the reserve prices set for the forthcoming 3.6 GHz Band Award Process. A non-confidential version of this letter and ComReg's response to same is set out in Annex 1 to this Information Notice.
- 4.2 In its letter, the GSMA refers to the analysis carried out by DotEcon in its Benchmarking Report (Document 16/70b) - which was published alongside the IM on 24 August 2016 - and, in summary, raises the following issues:
- that, in its view, DotEcon “confuses reserve prices and prices realised at the close of an auction” and, further, that these prices “need to be different for the auction to work”;
  - it refers to low benchmark prices which, in its view, are “arbitrarily discounted” (specifically, data points from Slovakia, Hungary and Moldova); and
  - that a Spanish data point is incorrect.
- 4.3 DotEcon has considered the matters raised by the GSMA and this is set out in the following documents:
- its note entitled “*Response to the GSMA comments on benchmarking*” (contained in Annex 2 to this Information Notice); and
  - a Benchmarking update (published separately as Document 16/88).
- 4.4 In summary, in these two documents DotEcon observes that:
- its recommendations to ComReg have been consistently based on setting reserve prices at a level likely to be below prices at the end of the auction;
  - the Hungarian and Slovakian awards have already been included as data points in the benchmarking analysis. Furthermore, the Moldovan award could not be included in the benchmarking as unsold lots do not provide any meaningful data point that could be used;
  - it has corrected the benchmarking report for the incorrect data-point for the sale of 3.5GHz spectrum to Orange in Spain in March 2016; and

- the changes following the correction of the Spanish data point are not significant enough to suggest that amendments to the existing minimum prices are required.

4.5 ComReg has carefully considered the views of the GSMA, DotEcon's analysis of same and the updated benchmarking report. In that regard, ComReg:

- agrees with the analysis set out by DotEcon and, in particular, notes that the reserve prices do not set out to predict the final price of the relevant spectrum rights (the latter of which will be determined by the competitive interaction of Bidders in the Award Process);
- recalls that it has, on more than one occasion, set out and clarified its views on benchmarking and minimum prices in relation to the 3.6 GHz Award Process<sup>11</sup> and spectrum awards generally<sup>12</sup>;
- is grateful to the GSMA for the clarification provided in respect of the Spanish data point; and
- agrees with DotEcon's assessment that the (updated) benchmarking results continue to support the suitability of the recommended minimum prices of €0.010 and €0.015 per MHz per capita for rural and urban areas respectively.

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<sup>11</sup> Document 14/101, p114, Document 15/70, p 126, Document 15/140, p132.

<sup>12</sup> Document 16/47, p90.

## Chapter 5

# 5 Next Steps

- 5.1 In accordance with the timelines set out at Table 9 of the IM, the deadline for receipt of Applications is 16:00 hours (Irish time) on 26 October 2016 (Application Date). Interested parties are referred to Section 3.3.6 of the IM which sets out the Application Procedure.
- 5.2 In particular, paragraph 3.95 notes that ComReg will only accept applications on Working Days from **20 October 2016 to 26 October 2016 between 10.00 and 16.00 hours (Irish time)**. Applicants are required to make an appointment with ComReg to submit an Application. To make an appointment to submit an Application, Applicants are required to contact **Mr Joseph Coughlan** on Working Days between **18 October 2016 and 25 October 2016**, and between 10.00 to 13:00 and 14:00 to 16.00 hours (Irish time) at:
- Phone: 00 353 (0)1 804 9767**
- 5.3 As set out in paragraph 3.101 of the Application Procedure, following 28 September 2016 and onwards through to the conclusion of the Notification and Grant Stage, no questions will be accepted from Applicants or Interested Parties, save for those that would qualify as permitted communications of the type set out in Section 4.1.4 of the IM (“Communications with ComReg”) and save for those communications and responses which are specifically requested by ComReg or its agents in accordance with the IM.
- 5.4 Notwithstanding the above, ComReg notes the obligations of Interested Parties in Section 5.2.5 of the IM in relation to errors.
- 5.5 ComReg would also highlight Section 3.3.5 of the IM with regard to confidential information and Bidder behaviour which sets out the rules (in addition to those rules under Irish and EU competition law which continue to apply regardless of this Award Process) that govern the behaviour of Applicants from the time of submission of their Applications until the public announcement on the outcome of the Award Process by ComReg.<sup>13</sup>

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<sup>13</sup> Note that, in the case where a Bidder were to submit multiple Applications (in which case the last Application only would be considered by ComReg), the period from which the rules on Confidential Information would apply is from the submission of the first Application.

# **Annex 1: Correspondence from GSMA and ComReg's response to same**



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13 September, 2016

### Reserve prices for forthcoming 3.5GHz spectrum award

Dear Commissioner Fahy

The GSMA is writing to request that ComReg reviews the reserve price proposed for the forthcoming 3.5GHz spectrum award.

The current reserve price in the Information Memorandum draws on analysis carried out by DotEcon, which we believe is flawed for the following reasons:

- DotEcon confuses reserve prices and prices realised at the close of an auction - they need to be different for the auction to work
- Some benchmark calculations are based on incorrect input data (see below)
- Examples of low benchmark prices are arbitrarily discounted from their consideration - despite spectrum being unsold in those auctions, and indicating that reserve prices were too high

DotEcon states: "Overall, the updated benchmarking results presented above support our view that minimum prices of €0.010 and €0.015 per MHz per capita for rural and urban areas respectively are suitable for the 3.6GHz award in Ireland. We continue to hold the view that the proposed minimum prices are high enough to discourage any potential speculative bidding behaviour and tacit collusion, **yet low enough to avoid choking off demand.**"

This contradicts the evidence provided:

***Spain - Orange bought 40MHz\* of spectrum, not 20MHz – the correct benchmark is half the figure published, therefore €0.0136***





“In March 2016, 2.6GHz and 3.5GHz spectrum was sold in Spain. There is limited information available about the award; however, sources reported that Orange won a national 20MHz block of 3.5GHz spectrum, at a price of **€0.0273**.”

(\*see: [http://www.boe.es/diario\\_boe/](http://www.boe.es/diario_boe/) documents BOE-A-2016-4827 and BOE-A-2015-13678)

***Hungary – the majority of the spectrum remained unsold, at a reserve price of €0.0065***

“The Hungarian auction, which took place in June 2016, included 100MHz of paired 3.4GHz spectrum, and 200MHz of unpaired 3.6GHz spectrum. Two bidders won spectrum at an average price of **€0.0068** per MHz per capita, just above the reserve price of **€0.0065**. However, 40MHz of the paired spectrum and 180MHz of the unpaired spectrum remained unsold, indicating that demand for this spectrum was rather limited.

***Moldova - spectrum remained unsold, at a reserve price just higher than that being proposed by Comreg***

“Reserve prices, when converted to a 15-year Irish licence were set at around ... **€0.0159** for the 3.4GHz/3.6GHz spectrum. It is unclear why the 2.6GHz, 3.4GHz and 3.6GHz spectrum was unsold; it might have been due to high reserve prices, but there may also have simply been a general lack of demand. In any case, the minimum price for 3.4GHz-3.8GHz spectrum set by the Moldovan regulator is just above the proposed minimum price for 3.6GHz spectrum in urban areas in Ireland.”

***Slovakia – the market price was lower than the proposed rural reserve price in Ireland, and the reserve price was half the market price***

“Two bidders competed for 3.5GHz spectrum in Slovakia in an auction for which results were announced in August 2016. O2 won all lots available (four TDD and one FDD) for a price of around **€0.0084** when converted to Irish licence terms. This was about twice as much as the minimum price.”

The GSMA commends ComReg on its timely licensing of the 3.5GHz band and supports the RSPG recommendation that this band will play an important role in the implementation of 5G services, but is very concerned that high reserve prices can lead to unsold spectrum, place an unnecessary cost burden on operators, and given that some regulators in Europe set reserve prices based on prices observed in other Member States, there is a real danger of incorrect pricing propagating across Europe - resulting in ratchetting spectrum costs in those Member States at a time when the European Commission is seeking to encourage consistent investment in 5G across all 28 Member States.







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We therefore ask that the evidence collected by DotEcon is reviewed at face value and reserve prices set accordingly.

Yours sincerely

A handwritten signature in black ink that reads "Brett Tarnutzer".

Brett Tarnutzer  
Head of Spectrum, GSMA





Commission for  
**Communications Regulation**  
Coimisiún Um  
**Rialáil Cumarsáide**

10 October 2016

Mr Brett Tarnutzer  
Head of Spectrum, GSMA  
The Wallbrook Building  
25 Walbrook  
London EC4N 8AF  
United Kingdom

Dear Mr Tarnutzer

**Reserve prices for forthcoming 3.6 GHz Band Spectrum Award**

I refer to your letter to Commissioner Fahy of 13 September 2016 regarding the above, the contents of which are noted. In particular, I note the GSMA's request for a review of the reserve prices as set out in the Information Memorandum.

ComReg, together with its advisor, DotEcon, has carefully considered the various matters raised in your letter and I wish to advise that this assessment will be set out in an Information Notice which will be published on ComReg's web-site shortly, together with a copy of your letter and this letter.

Thank you for bringing these matters to our attention.

Yours sincerely,

Ivan Kiely

Senior Manager Spectrum Operations

**Commission for Communications Regulation**  
**An Coimisiún um Rialáil Cumarsáide**

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## **Annex 2: DotEcon's assessment of GSMA's letter of 13 September 2016**

# Response to GSMA comments on benchmarking

October 2016

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## 1 Introduction

On 16 September 2016, ComReg received a letter from the GSMA requesting a review of the reserve prices set for the forthcoming 3.6GHz band award in Ireland. In particular, the GSMA believes that the reserve prices are too high, and that the benchmarking exercise is a flawed basis for establishing recommendations on reserve prices on the grounds that:

- *"DotEcon confuses reserve prices and prices realised at the close of an auction – they need to be different for the auction to work"*
- *"Some benchmark calculations are based on incorrect data"*
- *"Examples of low benchmark prices are arbitrarily discounted from their consideration – despite spectrum being unsold in those auctions, and indicating that reserve prices were too high"*

We address each of these comments in turn.

## 2 Reserve prices vs prices realised in an auction

The GSMA claims that *"DotEcon confuses reserve prices and prices realised at the close of the auction"*, but does not set out a detailed statement of its objections in this regard. We consider that this claim is groundless, as throughout each of the reports produced for ComReg there is clear distinction maintained between outturn prices from auctions and the reserve prices set for those auctions. These different concepts are clearly distinguished and there has been no *"confusion"*.

Where the GSMA says that reserve prices and outturn price *"need to be different for the auction to work"*, we assume that this refers to the desirability of having sufficient competition within an auction for a clearing price to be established in excess of the reserve prices. Clearly it is appropriate that reserve prices are not set too high with the effect of running a significant risk of choking off efficient demand for spectrum. However, equally the existence of vigorous competition for spectrum cannot necessarily be taken as a given and it may be desirable to set reserve prices at a level that discourages behaviour aimed at lessening such competition (such as tacit

collusion, other forms of gaming and pre-auction pooling of bidders interests). Therefore, reserve prices are set to balance various considerations and with the possibility that the reserve prices might affect the auction outcome, even if this is a remote possibility. Therefore, it is incorrect to claim that it is essential for achieved prices to strictly exceed reserve prices in all eventualities, otherwise reserve prices would have been set too high.

Our recommendations to ComReg have been based on setting reserve prices at a level likely to be below prices at the end of the auction (yet high enough to protect the credibility of the auction process) and to allow the auction mechanism to establish the true value of the spectrum. As stated in the original benchmarking report, the *"starting point is to develop conservative estimates of the potential market price of national licences for spectrum in this band. We then make a recommendation on reserve prices based on these estimates. Our recommendation takes into account the uncertainty around these estimates and the risk that reserve prices might be set too high, leading to unassigned spectrum even though there might be demand for it."*<sup>1</sup>

This principle has been maintained throughout each of our benchmarking reports. The principle was also clearly set out in our benchmarking recommendations for the MBSA and adopted by ComReg for that award process.

We have reiterated throughout the consultation process that the reserve price recommendations are based on a conservative estimate of market value and are not designed to estimate the prices likely to be achieved in the auction. As highlighted in the benchmarking update of December 2015<sup>2</sup>, the aim of the benchmarking exercise *"is not to estimate final prices likely to be established in the auction, but rather to choose a starting point that is likely to be below final prices, yet high enough to discourage speculative bidding and reduce gaming incentives."*

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<sup>1</sup> ComReg 16/57a

<sup>2</sup> ComReg 15/14ob

### 3 Incorrect Spanish data

The GSMA is correct that the data for the sale of 3.5GHz spectrum to Orange in Spain in March 2016 was incorrect. We thank the GSMA for noting this error.

We have corrected this, and provide updated benchmarking results in Document 16/88, published on ComReg's website.

### 4 Other conflicting evidence

The GSMA, in its letter, claims that "[e]xamples of low benchmark prices are arbitrarily discounted from their consideration", citing the following examples:

- the 3.4GHz–3.6GHz auction in Hungary (June 2016), where a large amount of the spectrum remained unsold;
- a multi-band auction in Moldova (November 2015), where the available 2.6GHz, 3.4GHz and 3.6GHz was unsold; and
- a 3.5GHz auction in Slovakia, where the market price achieved was lower than the proposed reserve prices for the Irish 3.6GHz award.

To the contrary, these awards have not been "arbitrarily discounted" from consideration. **In fact, both the Hungarian and Slovakian awards have been included as data points in the benchmarking analysis.** The Moldova award could not be included in the benchmarking as unsold lots do not provide any meaningful data point that could be used.

We explain in our previous report why we did not think that there was any particular significance to be drawn from there being unsold lots in these three Eastern European awards:

- In Moldova, the minimum price was set above that proposed even for urban areas in Ireland for 3.6GHz spectrum.
- The Hungarian auction appears to have been characterised by lack of interest in the 3.4-3.6GHz spectrum, despite the reserve price being very low; therefore, unsold spectrum in this auction cannot be ascribed to the setting of an excessive reserve price.
- Available reports suggest that there were no unallocated lots in the Slovakian auction.