



Commission for
Communications Regulation

Proposed 3.6 GHz Band Spectrum Award

Draft Information Memorandum

Reference: ComReg 16/22

Date: 16 March 2016

An Coimisiún um Rialáil Cumarsáide
Commission for Communications Regulation

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Additional Information

Document No: 16/22
Date: 16 March 2016

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Contents

Section	Page
1 Introduction.....	8
1.1 Legal Framework and Agreement.....	9
1.2 The 3.6 GHz Band	10
1.3 Structure of Information Memorandum.....	10
2 Licences, Regions and Award Spectrum	12
2.1 Introduction	12
2.2 The Regions in the Award Process	14
2.3 The Spectrum in the Award Process.....	16
2.4 The 3.6 GHz Band Liberalised Use Licence – Terms and Conditions.....	19
2.5 The 3.6 GHz Band Preparatory Licence – Terms and Conditions.....	36
2.6 The TPL – Terms and Conditions	39
2.7 The TUL– Terms and Conditions	43
2.8 The 3.6 GHz Band Spectrum Lease Licence	46
3 The Award Process.....	50
3.1 Lots Available.....	50
3.2 Process Overview and Timeline.....	54
3.3 Application Stage	59
3.4 Qualification Stage	75
3.5 Main Stage.....	79
3.6 Assignment Stage.....	86
3.7 Notification & Grant Stage.....	91
3.8 Transition Rules	94
4 The Auction Rules	97
4.1 General	97
4.2 The Main Stage.....	101
4.3 The Assignment Stage.....	121
4.4 End of Auction.....	133
5 Legal Terms and Conditions	134
5.1 Important Notice.....	134

5.2	Additional Conditions	137
6	Submitting Comments and Next Steps	142
6.1	Submitting Comments	142
6.2	Next Steps.....	143

Annexes

Section	Page
Annex 1: Glossary	144
Annex 2: Draft Regulations	161
Annex 3: Application Form	162
Annex 4: Alliance Notification Form	175
Annex 5: Worked Example of Activity Rules for the Primary Bid Rounds and Caps on Supplementary Bids.....	178
Annex 6: Example of Winner and Price Determination	199
Annex 7: Implications of Final Price Cap	203
Annex 8: Relationships, resolution of Bidder connections, exemptions and changes	209

Table of Figures

Section	Page
Figure 1: Illustration of the interaction between the different Licences in the 3.5 GHz band in relation to the Transition Rules.....	14
Figure 2. Graphical representation of the nine (9) Regions for award	16
Figure 3. The 3.6 GHz Band plan.....	18
Figure 4: Overview of the Award Process	56

Table of Tables

Section	Page
Table 1: The spectrum available in this process	10
Table 2: The spectrum and Lots available in this process.....	17
Table 3: Rollout base station obligation by Region	22
Table 4: Reserve Prices per Lot per Region	30
Table 5: Annual SUF before CPI adjustment per Lot per Region.....	31
Table 6: Annual fee per FWALA Service Area in a TPL.....	41
Table 7: Annual fee per FWALA Service Area in a 3.6 GHz Band Transition Unprotected Licence	45
Table 8: Lots available in the Award Process	53
Table 9: Indicative Timeline for the Award Process	58

Chapter 1

1 Introduction

- 1.1 In Document 15/140, ComReg set out its response to consultation and draft decision on its spectrum release proposals concerning the 3.6 GHz Band.¹
- 1.2 In Chapter 9 of Document 15/140, ComReg noted its intention to publish a draft Information Memorandum to allow interested parties to comment on same in advance of publishing its final Information Memorandum on the proposed 3.6 GHz Band award.²
- 1.3 The purpose of this draft Information Memorandum is to detail the processes and procedures ComReg envisages it would employ in the implementation of its substantive proposals as detailed in its draft Decision (Chapter 8 of Document 15/140).
- 1.4 ComReg is mindful of the complexities involved in the Award Process. ComReg has sought to provide as much clarity as possible in this draft Information Memorandum around the envisaged processes, procedures and rules, taking into account the fact that some Interested Parties may not have previously participated in any similar process. Following publication of the final Information Memorandum, ComReg will provide a presentation on the Award Process and the Auction Rules which will seek to provide further clarity and explanation for Interested Parties. ComReg will also facilitate the submission of questions regarding the Award Process and Auction Rules and will respond publicly to these questions on an anonymous basis.
- 1.5 This draft Information Memorandum and Associated materials have been prepared, in the main, while ComReg was awaiting the responses of Interested Parties to Document 15/140.
- 1.6 ComReg welcomes and acknowledges these responses and notes that the matters raised in same will be addressed in ComReg's forthcoming response to consultation and final decision on its 3.6 GHz Band spectrum award proposals.
- 1.7 ComReg notes, in particular, that to the extent that any material changes are made in ComReg's final regulatory impact assessments (RIAs) and final Decision, consequent changes may be required to be made to this draft Information Memorandum.

¹ ComReg Document 15/140 Response to Consultation and Draft Decision on Proposed 3.6 GHz Band Award. Interested parties are also referred to Documents 15/70 and 14/101.

² Noting ComReg's obligations under Regulation 9(4) of the Authorisation Regulations in particular.

1.1 Legal Framework and Agreement

- 1.8 In preparation of this Information Memorandum, ComReg has been guided by its statutory functions, objectives and duties relevant to management of Ireland's radio frequency spectrum (which are outlined in Annex 2 of Document 15/140) and the findings of its RIA analysis (which are set out in Chapter 3 of ComReg Document 15/140 and Annex 5 of Document 15/140).
- 1.9 Further, in addition to providing for the licensing of successful Applicants preparing for the launch of services on foot of the usage-rights secured in the proposed Award Process, it is proposed that the draft Statutory Instrument contained in this document - subject to obtaining the necessary, prior consent of the Minister with responsibility for the Communications portfolio - will prescribe relevant matters³ in relation to the 3.6 GHz Band Liberalised Use Licences that ComReg proposes to grant under Section 5 of the Wireless Telegraphy Act 1926, as amended, on foot of the Award Process.
- 1.10 In addition, Interested Parties should note the requirement to be authorised to provide an electronic communications network or service in Ireland.⁴ Interested Parties can consult ComReg's website⁵ for further details, and in particular, Document 03/81R3⁶.
- 1.11 Chapters 2, 3, 4 and 5 of this Information Memorandum contain the terms of the agreement which Interested Parties must agree to in participating in the Award Process and attention is specifically drawn to these Chapters given the important and binding provisions contained therein.⁷
- 1.12 For the avoidance of doubt, references throughout this Information Memorandum to ComReg using its discretion shall mean ComReg exercising

³ See Section 6 of the Wireless Telegraphy Act, 1926, as amended by Section 182 of the Broadcasting Act 2009.

⁴ 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). Under Regulation 4(6) of the Authorisation Regulations, any undertaking which fails to comply with Regulation 4(1) or Regulation 4(5) (notification of any changes to the information supplied) commits an offence.

⁵ See www.comreg.ie/licensing_and_services/general_authorisation.551.html for further details.

⁶ ComReg document 03/81R5 - General Authorisation, Pursuant to Regulation 8 of the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations, 2003 (S.I. No. 306 of 2003), Conditions for the provision of Electronic Communications Networks and Services - Published 25 December 2015

⁷ Interested Parties should note that ComReg reserves the right to make amendments to the Auction Rules after the finalisation of this Information Memorandum to correct any errors therein, or to further clarify matters, whether identified by ComReg, its consultants or Interested Parties, where such amendments are necessary or appropriate to ensure that the Auction Rules and the Electronic Auction System (EAS) operate in the manner intended by ComReg, as set out in the Information Memorandum. ComReg will promptly bring any such amendments to the attention of Interested Parties. Interested Parties are reminded that they are obliged to bring any errors to ComReg's attention promptly.

such discretion acting reasonably and in accordance with its statutory functions, objectives and duties.

1.2 The 3.6 GHz Band

1.13 There is 350 MHz of spectrum rights of use in the 3.6 GHz Band to be included in the Award Process. This spectrum is to be awarded on a regional basis⁸. The band plan will consist of a Time Division Duplex (TDD) configuration.

1.14 The spectrum available in each Region is set out in the following Table:

Frequency Band	Frequency range (MHz)	Spectrum available
3.6 GHz	3 410 – 3 435	25 MHz
	3 475 – 3 800	325 MHz

Table 1: The spectrum available in this process

1.3 Structure of Information Memorandum

1.15 The remainder of this draft Information Memorandum is structured as follows:

- **Chapter 2** details the Regions, the spectrum rights available, the Lots and the terms and conditions Associated with the Licences that may be awarded through this process (i.e. 3.6 GHz Band Liberalised Use, 3.6 GHz Band Preparatory, 3.6 GHz Band Transition Protected and 3.6 GHz Band Transition Unprotected Licences and 3.6 GHz Band Spectrum Lease Licences);
- **Chapter 3** provides an overview of the Award Process describing, in general terms, the various award stages and Associated timelines;
- **Chapter 4** details the Auction Rules and provides substantial information on the Auction component of the Award Process; and
- **Chapter 5** provides additional details on the legal terms and conditions that are applicable to this Award Process.
- **Chapter 6** seeks comments from interested parties and identifies next steps.

⁸ As detailed in Chapter 2.

- **Annexes:**

1. Glossary
2. Draft Regulations⁹
3. Application Form
4. Alliance Notification Form
5. Worked example of Activity Rules for the Primary Bid Rounds and Caps on Supplementary Bids
6. Example of Winner and price determination
7. Implications of Final Price Cap
8. Relationships, resolution of Bidder connections, exemptions and changes

1.16 In anticipation of receiving correspondence on matters relating to this document and to the Award Process in general, ComReg hereby gives notice that it will publish all material correspondence received in this regard subject to the provisions of ComReg's guidelines on the treatment of Confidential Information.¹⁰

⁹ These draft Regulations are indicative only and are subject to the Minister's consent pursuant to Section 37 of the Communications Regulation Act 2002.

¹⁰ See Document 05/24.

Chapter 2

2 Licences, Regions and Award Spectrum

2.1 Introduction

- 2.1 In this Award Process, ComReg intends to award Liberalised Use Licences which will permit the use of Apparatus for wireless telegraphy (“Apparatus”) for the terrestrial provision of electronic communications services (“ECS”), in specific frequency assignments in the 3.6 GHz Band and in one or more Regions (the Regions as set out in Section 2.2) (“3.6 GHz Band Liberalised Use Licences”).
- 2.2 The terms and conditions attached to 3.6 GHz Band Liberalised Use Licences are described in Section 2.4 of this document and are set out in the Draft Regulations and the indicative 3.6 GHz Band Liberalised Use Licence in Annex 2 of this document. Among other things, 3.6 GHz Band Liberalised Use Licences are being made available with a commencement date of 1 August 2017 (or such other date as may be specified by ComReg)¹¹ and shall expire on 31 July 2032¹².
- 2.3 Winning Bidders in the Award Process will also be entitled to apply for a 3.6 GHz Band Preparatory Licence which will allow the holders of such licences to install networks and Associated equipment in advance of the commencement date of its 3.6 GHz Band Liberalised Use Licence, but will not allow any wireless telegraphy transmissions¹³. The terms and conditions attached to a 3.6 GHz Band Preparatory Licence are described in Section 2.5 of this document and are set out in the Draft Regulations in Annex 2 of this document.
- 2.4 Where an Existing Licensee is a Winning Bidder in a Region that contains the service area of its Existing Licence, and the Transition Activities¹⁴ Associated

¹¹ The commencement date of a 3.6 GHz Band Liberalised Use Licence or the Lots in a 3.6 GHz Band Liberalised Use Licence may be delayed due to circumstances outside of ComReg’s control, notably the Transitional Activities provided for in Section 3.8 of this Information Memorandum.

¹² Any delay to the commencement of 3.6 GHz Band Liberalised Use Licences due to the Transitional Activities provided for in Section 3.8 of this Information Memorandum, or otherwise, shall not affect this expiry date.

¹³ If a licensee wishes to test equipment then they must apply separately for a test licence.

¹⁴ The Transition Activities refer to the activities required by the Existing Licensee to make adjustments to their existing networks in order to comply with the outcome of the award process and align their use of spectrum with the rights of use that they obtain, if any.

with this Existing Licence are likely to occur after 31 July 2017, such Existing Licensees will be able to apply to ComReg for a 3.6 GHz Band Transition Protected Licence ('TPL') in order to facilitate the timely and orderly completion of its Transition Activities provided for under Section 3.8 of this document. The terms and conditions attached to a TPL are described in Section 2.6 of this document and are set out in the Draft Regulations in Annex 2 of this document.

- 2.5 Under certain pre-conditions, an Existing Licensee will also be allowed to apply for a Transition Unprotected Licence ('TUL'). The purpose of the TUL is to:
- facilitate the timely and orderly completion of the Existing Licensee's Transition Activities as provided for under Section 3.8 of this document; and
 - maximise the benefits to users and ensure the efficient use of spectrum during the Transition period.
- 2.6 The terms and conditions attached to a TUL are described in Section 2.7 of this document and are set out in the Draft Regulations in Annex 2 of this document.
- 2.7 The terms and conditions attached to a 3.6 GHz Band Spectrum Lease Licence are described in Section 2.8 of this document. The purpose of the 3.6 GHz Band Spectrum Lease Licence is to facilitate the leasing of spectrum rights in accordance with such procedures as may be specified by ComReg under Regulation 19 of the Framework Regulations¹⁵
- 2.8 The figure below provides an illustration of the interaction between the different Licences in the 3.6 GHz Band in relation to the Transition Rules.

¹⁵ In Document 15/131, ComReg proposes to set out a regulatory framework for the leasing of spectrum rights in the radio spectrum policy programme (RSPP) bands (this includes the 3.6 GHz Band) in advance of 31 July 2017

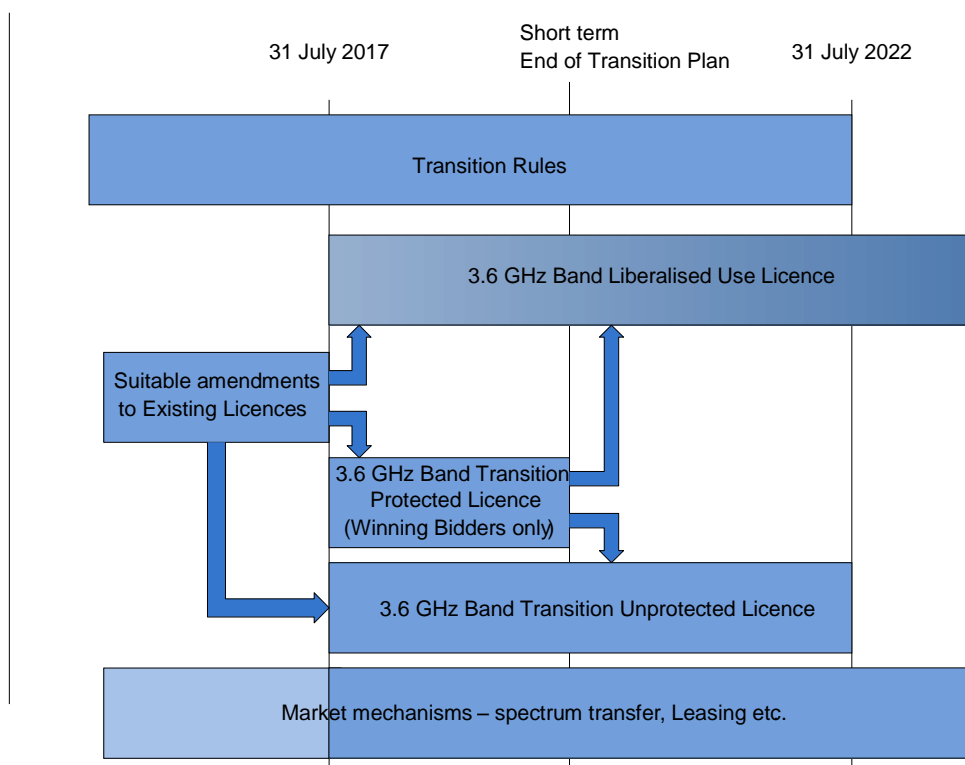


Figure 1: Illustration of the interaction between the different Licences in the 3.5 GHz band in relation to the Transition Rules.

2.2 The Regions in the Award Process

2.9 In this Award Process liberalised spectrum rights of use in the 3.6 GHz Band are being made available in distinct non-overlapping regional areas of the State. There are nine such Regions being:

- **Borders, Midlands and West:** That area of the State comprising counties Donegal, Leitrim, Sligo, Mayo, Roscommon, Cavan, Monaghan, Louth, Longford, Westmeath, Offaly, Laois and Galway, but excluding the CSO Boundary for Galway City and Suburbs Region.
- **South West:** That area of the State comprising counties Clare, Limerick, Kerry, Cork and the former local authority area of North Tipperary (as originally referred to as Tipperary North Riding in the Local Government Act 1898) but excluding the respective parts of these counties contained in the CSO Boundary for Cork City and Suburbs region and the CSO Boundary for Limerick City and Suburbs Region.
- **East:** That area of the State comprising counties Meath, Kildare, Wicklow and Dublin, but excluding the respective parts of these counties contained in the CSO Boundary for Dublin City and Suburbs Region.

- **South East:** That area of the State comprising counties Carlow, Wexford, the former local authority area of South Tipperary (as originally referred to as Tipperary South Riding in the Local Government Act 1898), Kilkenny and Waterford, but excluding the respective parts of these counties contained in the CSO Boundary of Waterford City and Suburbs Region.
- **CSO Boundary for Dublin City and Suburbs:** That area of the State as defined by the CSO in the Census 2011 Boundary Files for Dublin City and Suburbs.
- **CSO Boundary for Cork City and Suburbs:** That area of the State as defined by the CSO in the Census 2011 Boundary Files for Cork City and Suburbs.
- **CSO Boundary for Limerick City and Suburbs:** That area of the State as defined by the CSO in the Census 2011 Boundary Files for Limerick City and Suburbs.
- **CSO Boundary for Galway City and Suburbs:** That area of the State as defined by the CSO in the Census 2011 Boundary Files for Galway City and Suburbs.
- **CSO Boundary for Waterford City and Suburbs:** That area of the State as defined by the CSO as per the Census 2011 Boundary Files for Waterford City and Suburbs.

2.10 ComReg further defines the above Regions using boundary files and provides ten ESRI shape files that set out the boundaries of the Regions¹⁶. One file set is the master which sets out the boundaries of all nine Regions. The other nine file sets, describe the boundaries of each individual Region and is provided to assist potential Bidders for individual Regions. In the event of any discrepancy between the boundary in the master file set and the individual Region file sets, the master file set will be definitive.¹⁷

2.11 These file sets are made available on the ComReg website at the following link for download by Interested Parties.

¹⁶ These files may also be useful for Interested Parties that wish to view the boundaries of the Regions using their own mapping software

¹⁷ © Ordnance Survey Ireland/Government of Ireland - Copyright Permit No. MP 001316

http://www.ComReg.ie/radio_spectrum/proposed_3_6_ghz_band_award.722.html

2.12 A graphical representation of the Regions is shown in Figure 2 below.

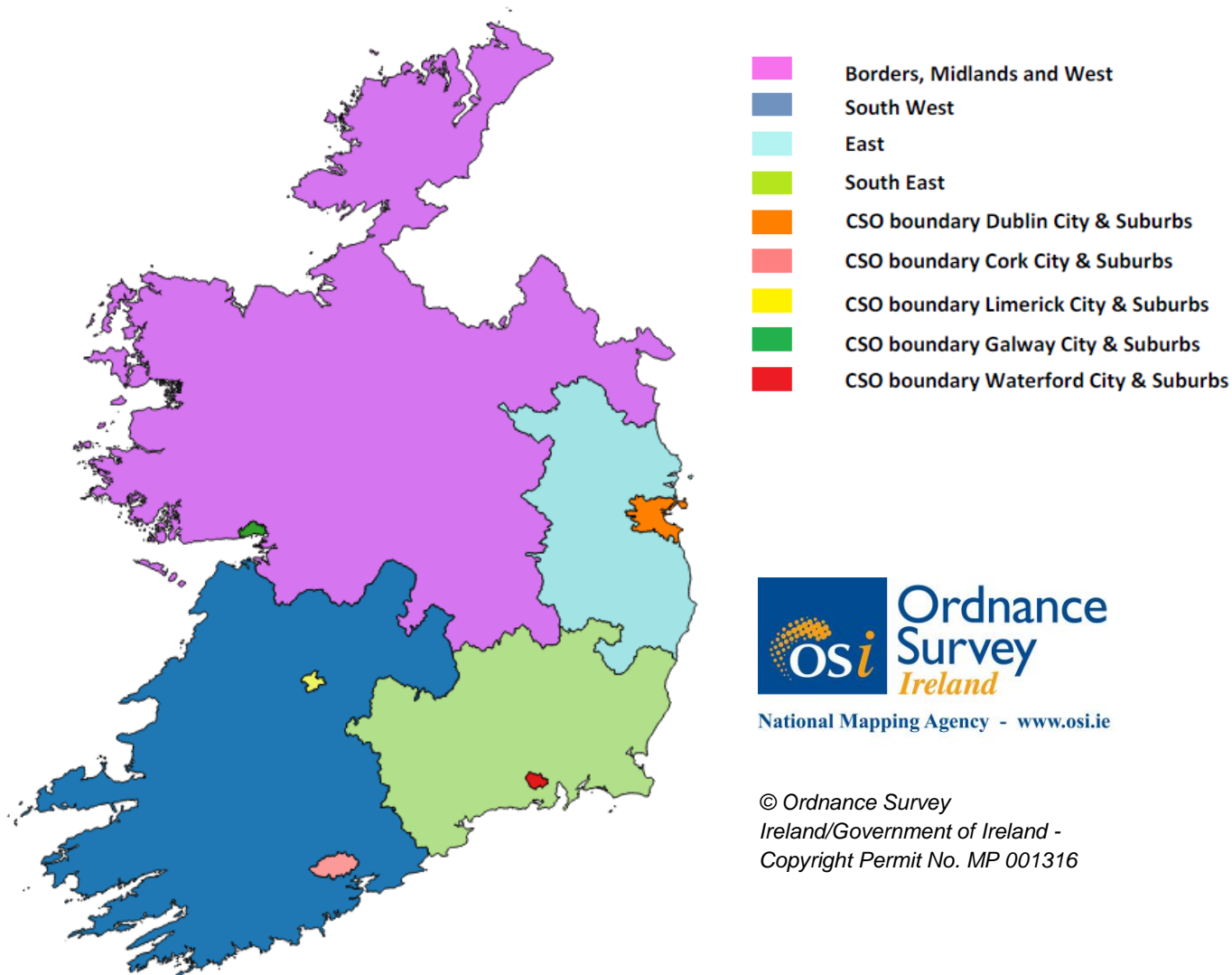


Figure 2. Graphical representation of the nine (9) Regions for award

2.3 The Spectrum in the Award Process

2.13 In each Region, 350 MHz of spectrum in the 3.6 GHz Band is being made available as set out in Table 2.

Frequency Band	Frequency range (MHz)	Spectrum available	Lots available for award
3.6 GHz	3 410 – 3 435	25 MHz	1 x 25 MHz
	3 475 – 3 800	325 MHz	65 x 5 MHz

Table 2: The spectrum and Lots available in this process

- 2.14 In each Region a total of 66 Lots are being made available. There are two types of Lots.
- A-Lots: a single, frequency-specific 25 MHz Lot in the frequency range 3 410 MHz – 3 435 MHz.
 - B-Lots: Sixty five (65) 5 MHz frequency-generic Lots in the frequency range 3 475 MHz – 3 800 MHz.
- 2.15 Overall this results in 18 Lot Categories in the Award Process, A1-A9 and B1-B9 (two Lot Categories for each of the nine Regions).
- 2.16 Figure 3 below shows the band-plan for the 3.6 GHz Band in this Award Process.

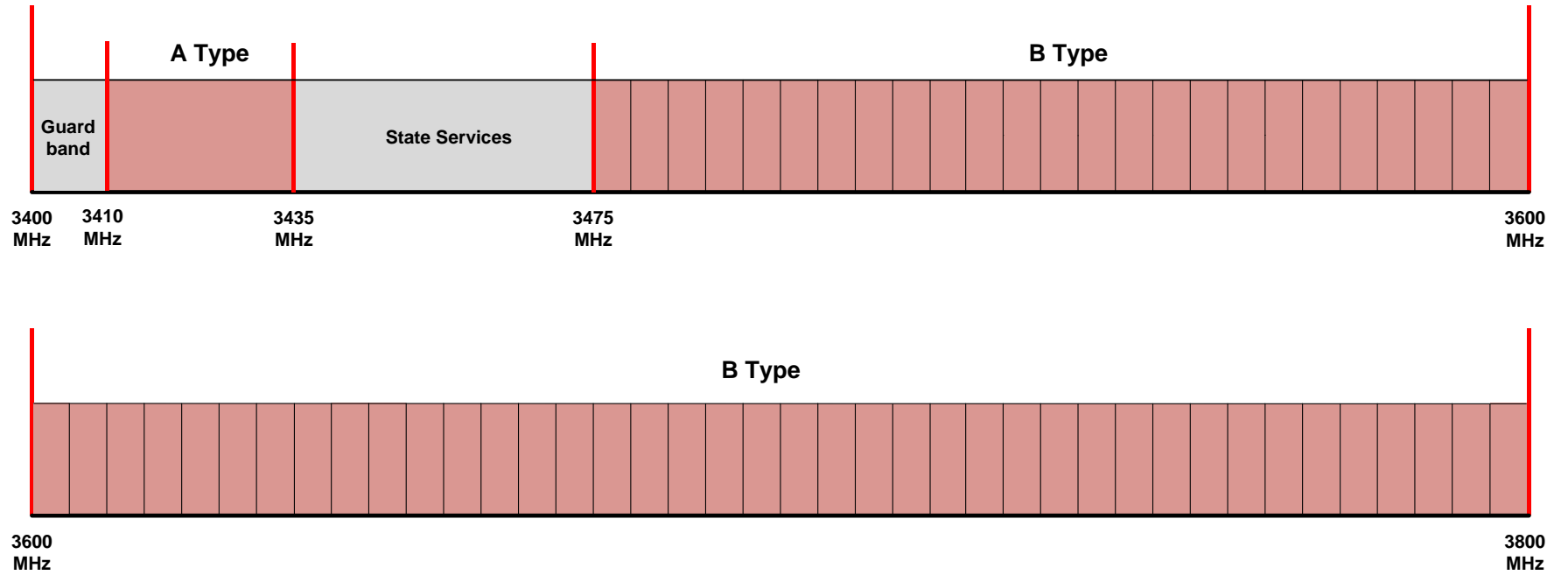


Figure 3. The 3.6 GHz Band plan

2.4 The 3.6 GHz Band Liberalised Use Licence – Terms and Conditions

2.17 The following describes the principal terms and conditions Associated with a 3.6 GHz Band Liberalised Use Licence. These terms and conditions are set out in the Draft Regulations and the indicative 3.6 GHz Band Liberalised Use Licence as set out in Annex 2 to this document.

2.4.1 Entitlement to apply for a 3.6 GHz Band Liberalised Use Licence

2.18 In accordance with the rules for the Notification and Grant Stage as discussed in Section 3.7 of this Information Memorandum, Winning Bidders will be entitled to apply for a 3.6 GHz Band Liberalised Use Licence.

2.19 In accordance with the Spectrum Transfer framework¹⁸, a 3.6 GHz Band Liberalised Use Licence may also be issued to a party who is not a Winning Bidder, where 3.6 GHz spectrum rights of use are transferred to this party.

2.4.2 Scope of the 3.6 GHz Band Liberalised Use Licence

2.20 A 3.6 GHz Band Liberalised Use Licence will allow the Licensee to keep and have possession of, install, maintain, work and use Wireless Telegraphy (“WT”) Apparatus for terrestrial systems capable of providing electronic communications services in some of the 3.6 GHz Band.

2.21 It is a "Non-exclusive" Licence for specific Regions of the Republic of Ireland as specified in the Licence and all WT Apparatus licensed under a 3.6 GHz Band Liberalised Use Licence is required to comply with the conditions of the Licence and the relevant European Commission (EC) decisions for the 3.6 GHz Band, including the European Commission Decision 2008/411/EC¹⁹ as amended by European Commission Decision 2014/276/EC²⁰ (“3.6 GHz EC Decision”).

2.22 As set out in the Draft Regulations:

¹⁸ See ComReg Document 14/11 and S.I. 34 of 2014

¹⁹ The 2008 3.6 GHz EC Decision of 21 May 2008 on the harmonisation of the 3 400 - 3 800 MHz frequency and for terrestrial systems capable of providing electronic communications services in the Community. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:144:0077:0081:EN:PDF>.

²⁰ The 2014 3.6 GHz EC Decision of 2 May 2014 on amending the 2008 3.6 GHz EC Decision 2008/411/EC on the harmonisation of the 3 400 – 3 800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014D0276&from=EN>

- a “Non-exclusive” licence, means that ComReg is not precluded from authorising the keeping and having possession by persons other than the Licensee, on a Non-Interference and Non-Protected Basis, of Apparatus for wireless telegraphy on the radio frequency spectrum specified in the Licence;²¹ and
- “on a Non-Interference and Non-Protected Basis” means that the use of Apparatus is subject to no harmful interference being caused to any radiocommunication service, and that no claim may be made for the protection of Apparatus used on this basis against harmful Interference originating from radiocommunication services.

2.4.3 3.6 GHz Band Liberalised Use Licence Duration

- 2.23 Lots in this Award Process are being made available from 1 August 2017 (or some other date as may be specified by ComReg) to 31 July 2032.
- 2.24 There is no implied or express right of renewal, Extension or any other form of prolongation of a 3.6 GHz Band Liberalised Use Licence beyond the expiry date of 31 July 2032.
- 2.25 Significantly prior to the expiry of 3.6 GHz Band Liberalised Use Licences, ComReg intends to consider the future use of the 3.6 GHz Band, including identifying the appropriate process for dealing with the spectrum released due to the expiration of 3.6 GHz Band Liberalised Use Licences.

Potential for delayed commencement of 3.6 GHz Band Liberalised Use Licences

- 2.26 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 2017.²²

²¹ As discussed in Section 6.3.1 of Document 15/140, Article 2(1) of the 3.6 GHz EC Decision obliges member States to make available the 3.6 GHz band on a non-exclusive basis and this decision is binding on Member States. Further it is standard practice in Ireland that spectrum bands licensed to particular licensees are also made available to other Wireless Telegraphy apparatus on a non-interference and non-protected basis. ComReg does not presently foresee any material change in its policy on non-exclusivity over and above that already applied in other licensing regimes in Ireland.

²² Such potential circumstances include the Transitional Activities of the Existing Licensees provided for in section 3.8 of this Information Memorandum resulting in delayed access to certain Lot/s.

- 2.27 Interested Parties are hereby expressly put on notice of the potential for delayed access to any and all Lots in the 3.6 GHz Band, and in submitting an Application, Applicants acknowledge and accept same.
- 2.28 Section 2.4.7 below details the refunds of Licence fees payable to a Winning Bidder or the adjustment of Licence fees payable by a Winning Bidder as the case may be, in the event of delayed access to Lots beyond the commencement date of 1 August 2017.
- 2.29 To the extent permitted by law, ComReg's aggregate liability for all losses or damages of any nature arising from delayed access to Lots beyond the commencement date of 1 August 2017 is expressly limited to the refunds or adjustments of Licence fees as set out in Section 2.4.7 of this Information Memorandum and, by submitting an Application, Interested Parties agree to same.

2.4.4 Licence Conditions Applicable to all 3.6 GHz Band Liberalised Use Licences

- 2.30 This section describes the conditions which are applicable to all 3.6 GHz Band Liberalised Use Licences.

Coverage and roll-out and Associated compliance reporting conditions

- 2.31 It is a condition of a 3.6 GHz Band Liberalised Use Licence that the Licensee shall achieve and maintain the rollout base station obligation detailed in Table 3 below within 3 years of its licence commencement date for each of the Regions specified in its Licence, where
- A rollout base station means network-controlled wireless telegraphy Apparatus in the 3.6 GHz Band with a minimum spectrum efficiency capability of 4 bits/Hz; and
 - Network-controlled wireless telegraphy Apparatus means Apparatus which has backhaul capability²³ over a network connection under the control of the Licensee. For the avoidance of doubt, "plug-and-play" type Apparatus, such as femto cells, terminal stations and repeaters, are not network-controlled wireless telegraphy Apparatus.

²³ If the 3.6 GHz Band is used for the provision of backhaul connectivity, even if such apparatus comprises of multiple hops to the network, this counts as a single rollout base station, provided such backhaul connectivity carries data originating from or destined for multiple customer premises. The connection to individual customer premises equipment is excluded.

Reference number of region	Name of Region	Number of rollout base stations to be worked and used	
		Licensee holding up to and including 100 MHz in the 3.6 GHz Band in that Region	Licensee holding over 100 MHz in the 3.6 GHz Band in that Region
1	Borders, Midlands and West	15	25
2	South West	15	25
3	East	15	25
4	South East	15	25
5	CSO boundary for Dublin City and Suburbs	10	15
6	CSO boundary for Cork City and Suburbs	2	4
7	CSO boundary for Limerick City and Suburbs	2	4
8	CSO boundary for Galway City and Suburbs	2	4
9	CSO boundary for Waterford City and Suburbs	2	4

Table 3: Rollout base station obligation by Region

- 2.32 For Regions 1, 2, 3 and 4 in Table 3 above, the Licensee is required to work and use rollout base stations in at least 4 counties for each licensed Region.
- 2.33 Where a Licensee has a rollout base station in one county and this rollout base station is worked and used to provide service to another county, the rollout base station will be counted as being worked and used in the county it serves (and not the county in which it is located).
- 2.34 Where a Licensee has a rollout base station in one county and this rollout base station is worked and used to provide services to more than one county (i.e. the county in which it is located in and also neighbouring counties), the rollout base station will only be counted as a single rollout base station for the purposes of meeting the rollout base station obligation and the Licensee may chose the county in which such a rollout base station is to be counted for this purpose.

- 2.35 Rollout base stations worked and used pursuant to a spectrum leasing arrangement count towards the rollout base station obligation of the lessor's Licence.
- 2.36 Where a Licensee has a spectrum leasing arrangement for a rollout base station in a Region not contained in its licensed Regions and this rollout base Station is being worked and used to serve a Region contained in its licensed Regions, such a rollout base station will be counted as being worked and used in the county and Region which it serves.
- 2.37 Where a Licensee shares a rollout base station with another Licensee, such rollout base stations can count towards the rollout base station obligation of each Licensee in their respective licensed Regions, provided that the licensed spectrum blocks of each Licensee are worked and used by the rollout base station.
- 2.38 Additionally, it is a condition of a 3.6 GHz Band Liberalised Use Licence that the Licensee submits an annual report to ComReg regarding its compliance with its rollout obligation ("Rollout Compliance Report"). Details of this compliance reporting condition are set out in Part 4, Section 4(3) of the indicative 3.6 GHz Band Liberalised Use Licence contained in Annex 2 of this document and include that:
- the Licensee shall identify in the Rollout Compliance Report whether it has either (a) met the relevant rollout obligation specified in its Licence, or (b) failed to meet the said obligation and reasons for same;
 - the information required for the Rollout Compliance Report shall be agreed with ComReg in advance and the Rollout Compliance Report shall have sufficient detail and granularity to allow ComReg to verify the Licensee's report; and
 - the Licensee shall submit its Rollout Compliance Report each calendar year within the 31 calendar days following the anniversary of the commencement date of its 3.6 GHz Band Liberalised Use Licence.

Quality of Service ("QoS") and associated compliance reporting conditions

- 2.39 It is a condition of a 3.6 GHz Band Liberalised Use Licence that the minimum Quality of Service ("QoS") obligations²⁴ as set out in Part 4, Section 5 of the

²⁴ The QoS obligations attached to a 3.6 GHz Band Liberalised Use Licence apply to all relevant services provided using the spectrum blocks licensed in Part 1 of a Licensee's Licence. For the avoidance of doubt, this will include all relevant services of the Licensee and those services provided by any third parties via contractual or other arrangements with the Licensee that use those spectrum blocks.

indicative 3.6 GHz Band Liberalised Use Licence contained in Annex 2 of this document are met. These QoS obligations relate to:

- the Minimum “Availability of the Network” Standard; and
- the Minimum “Voice Call” Standard.

2.40 Additionally, it is a condition of a 3.6 GHz Band Liberalised Use Licence that the Licensee shall, every twelve months, measure and submit an annual report to ComReg on its compliance with (a) the Availability of the Network QoS standard and (b) the Voice Call QoS standard (“QoS Compliance Report”). Details of this compliance reporting condition are set out in Part 4, Section 5(3) of the indicative 3.6 GHz Band Liberalised Use Licence in Annex 2 of this document and include that:

- in the QoS Compliance Report the Licensee shall notify ComReg whether the Licensee has either (a) met the relevant QoS obligations as set out in its Licence, or (b) failed to meet the said obligations and reasons for same;
- the measurements required for the QoS Compliance Report shall be agreed with ComReg in advance and the QoS Compliance Report shall have sufficient detail and granularity to allow ComReg to verify the Licensee’s measurements;
- upon request by ComReg²⁵, the Licensee shall carry out Drive Test Measurements and submit these results to ComReg. These Drive Test Measurements are to be carried out at the Licensee’s own expense and to a standard as agreed with ComReg; and
- the Licensee shall submit its QoS Compliance Report each calendar year within the 31 calendar days following the anniversary of the Licence Commencement Date of the 3.6 GHz Band Liberalised Use Licence.

²⁵ ComReg does not envisage Drive Test Measurements being required on a frequent basis, but notes that such measurements may be appropriate in circumstances where:

- a Licensee is submitting a compliance report on QoS for the first time; or
- ComReg’s own verification checks, Drive Test Measurements or other information suggests that there may be discrepancies in the compliance report on QoS or the Licensee may not be meeting its QoS obligations.

Cessation of use of a terrestrial system

- 2.41 It is a condition of a 3.6 GHz Band Liberalised Use Licence that in Part 2 of its Licence, the Licensee specifies the terrestrial system applicable to each WT Apparatus specified on its Licence.
- 2.42 It is also a condition of a 3.6 GHz Band Liberalised Use Licence that, where a Licensee intends to cease the use of a terrestrial system that is used to provide services under the 3.6 GHz Band Liberalised Use Licence,²⁶ the Licensee is obliged to:
- a) notify ComReg of this intention at least 6 months²⁷ in advance of the proposed termination date; and
 - b) use all reasonable endeavours to ensure that any adverse effects on users caused by the cessation of use of a terrestrial system are minimised.

Compliance with rules to prevent spectrum hoarding

- 2.43 It is a condition of the 3.6 GHz Band Liberalised Use Licence that the Licensee comply with any rules to prevent spectrum hoarding as laid down by ComReg under Regulation 17(10) of the Framework Regulations. While no such rules have been currently laid down by ComReg, ComReg reserves the right to specify such rules in the future and such rules may apply to rights of use for radio frequencies associated with 3.6 GHz Band Liberalised Use Licences.

Assignment of rights and obligations of a 3.6 GHz Band Liberalised Use Licence

- 2.44 Assignment of rights and obligations of a 3.6 GHz Band Liberalised Use Licence (including trading of rights of use for radio frequencies attaching to a 3.6 GHz Band Liberalised Use Licence) will be permitted.
- 2.45 In relation to any such assignment of rights and obligations, among other things, it is a condition of the 3.6 GHz Band Liberalised Use Licence that the Licensee shall:

²⁶ For the avoidance of doubt the entitlement of a Licensee to cease the use of a terrestrial system is without prejudice to the contractual rights of parties who have entered into contracts with the Licensee.

²⁷ Should a Licensee notify ComReg that it could cease using one technology in favour of another in a time period of less than 6 months, then such a proposal would be assessed by ComReg at the relevant time in light of its statutory functions, objectives and duties, considering, among other things, how consumer disruption would be minimised.

- notify ComReg of its intention to transfer some or all of its rights of use of radio frequencies attached to its 3.6 GHz Band Liberalised Use Licence;
- only transfer the rights of use for radio frequencies attaching to its 3.6 GHz Band Liberalised Use Licence in accordance with the Transfer Regulations²⁸;
- notify ComReg of its intention to Lease any rights of use for radio frequencies attaching to its 3.6 GHz Band Liberalised Use Licence;
- only Lease the rights of use for radio frequencies attaching to its 3.6 GHz Band Liberalised Use Licence in accordance with such procedures as may be specified by ComReg under Regulation 19 of the Framework Regulations²⁹;
- not, without the prior consent of ComReg which shall not be unreasonably withheld, Lease any such rights of attaching to its 3.6 GHz Band Liberalised Use Licence; and
- ensure that if the address of the Licensee or its Transferee or Lessee changes, the Licensee, Transferee or Lessee shall, as soon as possible, but in any event within 28 days, notify ComReg in writing of the change.

2.46 It should be noted that the Transfer Regulations do not apply to spectrum transfers forming part of a merger or acquisition which is required to be notified to the Competition and Consumer Protection Commission in accordance with Part 3 of the Competition Acts 2002, as amended or to the European Commission in accordance with Council Regulation (EC) No 139/2004.

Provision of updated information for Part 2 and Part 3 of the Licence

2.47 Part 2 and Part 3 of the 3.6 GHz Band Liberalised Use Licence details the Apparatus to which the Licence relates and the location of each Apparatus.

2.48 It is a condition of the 3.6 GHz Band Liberalised Use Licence that the Licensee, submit up to date information to ComReg in respect of Parts 2 and 3 of its 3.6 GHz Band Liberalised Use Licence in advance of its licence commencement date and on or before 1 August of each year that the licence is in force.

²⁸ S.I. No. 34 of 2014

²⁹ In Document 15/131, ComReg proposes to set out a regulatory framework for the leasing of spectrum rights in the radio spectrum policy programme (RSPP) bands (this includes the 3.6 GHz Band) in advance of 31 July 2017

2.49 It is ComReg's intention to publish details of 3.6 GHz Band Liberalised Use Licences, including information contained in Part 2 and Part 3, on its website subject to the assessment of Confidential Information in line with ComReg 05/24.

Payment of fees

2.50 It is a condition of a 3.6 GHz Band Liberalised Use Licence that the Licensee shall make payment of fees as detailed in the Regulations, as set out in Draft form in Annex 2 to this document.

2.4.5 3.6 GHz Band Liberalised Use Licence Technical Conditions

2.51 The technical conditions for a 3.6 GHz Band Liberalised Use Licence are detailed in Part 4, Sections 2 and 3 of the indicative 3.6 GHz Band Liberalised Use Licence in Annex 2 of this document. These conditions are in accordance with the parameters set out in the Annex to 3.6 GHz EC Decision and, amongst other things, require a Licensee with a 3.6 GHz Band Liberalised Use Licence to:

- ensure that only terrestrial systems compatible with the 3.6 GHz EC Decision are worked and used in the 3.6 GHz Band;
- be bound by the Inter-Licensee Synchronisation Procedure as set out in Part 4, Section 3 of the Licence;
- comply with all Memoranda of Understanding ("MoU") agreed from time to time between ComReg and Ofcom³⁰ or its successor, in relation to the 3.6 GHz Band³¹; and
- comply with the co-ordination threshold limit of 32 dB μ V/m/5 MHz for 90% of the time and 90% of the locations at a height of 10 m at the borders of each Region³². This co-ordination threshold limit may be relaxed when an Inter-Licensee Co-ordination Agreement is in place between all potentially affected Licensees.³³

³⁰ The national regulatory authority responsible for electronic communications matters in the UK

³¹ See Annex 3 of ComReg Document 0617R7. This MoU may be updated and amended by ComReg from time to time.

³² The field prediction method shall be according to the current version of Recommendation ITU-R P.452, unless otherwise specified by ComReg.

³³ Inter-Licensee Co-ordination Agreements may be guided by ECC Recommendation (15) 01 or subsequent relevant guidance documents.

Compliance with the R&TTE Regulations

- 2.52 All radio and telecommunications terminal equipment must comply with the essential requirements and other relevant provisions of the R&TTE Directive before being placed on the market or put into service in Ireland.
- 2.53 Under the R&TTE Regulations³⁴, which transpose the R&TTE Directive into law in Ireland, and the 2002 Act³⁵, it is a function of ComReg to ensure compliance, as appropriate, by persons with the relevant provisions of that legislation in relation to the placing of communications equipment on the market and the placing on the market and putting into service of radio equipment.
- 2.54 Among other things, ComReg defines the regulated interface requirements for radio services in Ireland and these interfaces are currently set out in ComReg Document 06/47R.³⁶ This document has radio interface specifications for the 3.6 GHz Band and it is ComReg's intention to update ComReg Document 06/47R in due course to account for any 3.6 GHz Band Liberalised Use Licences issued as a result of this Award Process.
- 2.55 It is a condition of a 3.6 GHz Band Liberalised Use Licence that the Licensee ensure that all radio equipment worked and used under the 3.6 GHz Band Liberalised Use Licence operates in accordance with the relevant interface requirements as set out in ComReg Document 06/47R (as amended from time to time).
- 2.56 During the duration of any 3.6 GHz Band Liberalised Use Licences issued, or in advance of issuing same, the R&TTE Directive will be superseded by the Radio Equipment Directive³⁷ (RED). In the above, and in Associated conditions of use, when the RED is transcribed into Irish law all references to R&TTE Directive and Regulations will be understood to refer to the RED and its Associated regulations.
- 2.57 The RED comes into force on the 13th of June 2016. For equipment which has been placed on the market prior to 13th June 2017 the R&TTE Directive and Regulations may still apply.

³⁴ The European Communities (Radio Equipment and Telecommunications Terminal Equipment) Regulations, 2001 (S.I. No. 240 of 2001)

³⁵ The Communications Regulation Act 2002 (No. 20 of 2002), as amended

³⁶ Interface Requirements for Radio Services in Ireland (see http://www.comreg.ie/fileupload/publications/ComReg_0647R.pdf).

³⁷ Directive 2014/53/EU of the European Parliament and of the Council, 16th April 2014, on harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.

2.58 It is a condition of a 3.6 GHz Band Liberalised Use Licence that the Licensee ensure that the Apparatus or any part thereof complies with Section 4 of the R&TTE Regulations and the relevant provisions of the RED which will replace R&TTE Regulations. In this regard, a Licensee has a duty to ensure that the electromagnetic disturbance generated by its licensed Apparatus does not exceed the level above which radio and telecommunications equipment or other equipment cannot operate as intended and that equipment sold, or installations constructed, by them are appropriately immune to electromagnetic interference.

2.4.6 Fees for a 3.6 GHz Band Liberalised Use Licence

2.59 The fee for a 3.6 GHz Band Liberalised Use Licence consists of an Upfront Fee which is paid at the end of the Award Process and Spectrum Usage Fees (“SUFs”) which are paid prior to the first grant of a 3.6 GHz Band Liberalised Use Licence and then over its duration.³⁸

2.60 For the avoidance of doubt, it should be noted that the grant of any Licence arising out of this Award Process is not an activity that is currently subject to Value Added Tax (“VAT”) and so all Licence fees to be paid by Licensees in connection with the Award Process do not include VAT. If the VAT rules change over the duration of the Licences, this would be applied as appropriate.

The Upfront Fee

2.61 The Upfront Fee payable by a Winning Bidder for a 3.6 GHz Band Liberalised Use Licence at the end of the Auction is a spectrum access fee that comprises:

- the Base Price Associated with the Winning Bid for that Winning Bidder, payable for winning Lots in the Main Stage of the Award Process; and
- the Additional Prices for that Winning Bidder, if any, payable for the assignment of B-Lots as a result of the Assignment Stage of the Award Process.

2.62 The Base Price is determined as follows:

- 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

³⁸ As discussed further in Section 3.7 of this document, the net fees to be paid at end of the auction will be appropriately reduced by the Deposit submitted and any applicable refunds or fee adjustments to reflect any delayed commencement.

Band Liberalised Use Licence. Table 4 below sets out the Reserve Price per Lot per Region.

Region	Reserve Price per A-Lot, €	Reserve Price per B-Lot €
Border, Midlands & West	114,000	22,800
South-West	72,000	14,400
East	64,000	12,800
South-East	44,000	8,800
Dublin City & Suburbs	178,000	35,600
Cork City & Suburbs	34,000	6,800
Limerick City & Suburbs	16,000	3,200
Galway City & Suburbs	14,000	2,800
Waterford City and Suburbs	8,000	1,600

Table 4: Reserve Prices per Lot per Region

- where the Main Stage of the Award Process is required, the Base Price for a 3.6 GHz Band Liberalised Use Licence is determined by the Main Stage of the Auction as detailed in Chapter 4 of this document. The Base Price for a 3.6 GHz Band Liberalised Use Licence will be no less than the sum of the Reserve Prices for all Lots won in all Regions to be included in a 3.6 GHz Band Liberalised Use Licence.

2.63 The **Additional Price** for a Winning Bidder, if any, is the price Associated with the assignment of specific Lots to this Winning Bidder as determined in the Assignment Stage of this Award Process. This price will be determined using the methodology as detailed in Chapter 4 and will be no greater than the amount bid by the Winning Bidder or the Assignment Bidder for these specific Lots in the Assignment Stage.

The Spectrum Usage Fee

2.64 The SUF is an index-linked fee that is paid at defined intervals over the duration of the Licence. The first SUF is due prior to the initial grant of the 3.6 GHz Band Liberalised Use Licence. SUFs are due each subsequent calendar year within the duration of the 3.6 GHz Band Liberalised Use licence prior to 1 August of that calendar year. SUFs are index-linked to the overall Consumer Price Index³⁹ ("CPI") as published by the Central Statistics Office⁴⁰ of Ireland or its successor. As the CPI may vary over time, the SUF per Lot may increase or decrease over the duration of the 3.6 GHz Band Liberalised

³⁹ If the CPI data ceases to be published or if the method of its calculation changes fundamentally, ComReg reserves the right to select another appropriate index and to amend the method of calculating indexing accordingly.

⁴⁰ See www.cso.ie.

Use Licence based upon the increases or decreases in the CPI for the relevant time period.

- 2.65 For a 3.6 GHz Band Liberalised Use Licence, the SUFs are the sum of the SUFs Associated with each Lot per Region included in the 3.6 GHz Band Liberalised Use Licence. For each Lot per Region included in a 3.6 GHz Band Liberalised Use Licence, the annual SUF before CPI Adjustment is set out in Table 5 below.

Region	Annual before Adjustment A-Lot, €	SUF per CPI	Annual before Adjustment per B-Lot, €	SUF per CPI
Border, Midlands & West	17,670		3,534	
South-West	14,400		2,232	
East	12,800		1,984	
South-East	8,800		1,364	
Dublin City & Suburbs	35,600		5,518	
Cork City & Suburbs	6,800		1,054	
Limerick City & Suburbs	3,200		496	
Galway City & Suburbs	2,800		434	
Waterford City and Suburbs	1,600		248	

Table 5: Annual SUF before CPI adjustment per Lot per Region

- 2.66 The CPI Adjustment is to be calculated using 1 August 2017 as the common base date for the CPI (i.e. CPI = 100). When calculating the CPI Adjustment to the SUF Associated with a Licence, ComReg will use the most up to date CPI data available to it at that time. For example, for 1 August, ComReg envisages that the most up to date CPI data available to it is likely to be CPI data from June of that year.⁴¹
- 2.67 Where a 3.6 GHz Band Liberalised Use Licence is granted for a period of less than one year, the SUF shall be calculated using the above methodology and adjusted on a pro rata daily basis.

Payment Arrangements for Licence Fees

- 2.68 The Licence fees for a 3.6 GHz Band Liberalised Use Licence are to be paid into ComReg's Bank Account, the details of which are specified in the Application Form as set out in Annex 4 of this document

⁴¹ This would take into consideration the time required for the publication of CPI data by the CSO and the administrative requirements such as invoicing the SUF to the Winning Bidder or Licensee thirty (30) calendar days in advance of anniversary of the commencement date of the 3.6 GHz Band Liberalised Use Licence.

- 2.69 Where the due date for payment of Licence Fees falls on a day which is not a Working Day, payment shall be made on or before the last Working Day before the date on which payment would otherwise have fallen due.
- 2.70 As set out in Section 3.7 of this document, where a Winning Bidder does not comply with the conditions relating to the payment of the Upfront Fee or the conditions attached to the payment of the SUF due on the first grant of a Licence, it will may forfeit its Deposit and its entitlements to a 3.6 GHz Band Liberalised Use Licence and a 3.6 GHz Band Preparatory Licence, without prejudice to ComReg's entitlement to recover the full amount due in respect of all Lots per Region Associated as a simple contract debt.
- 2.71 Where a Licensee has already been issued a 3.6 GHz Band Liberalised Use Licence, failure by a Licensee to make a payment on or before the date it falls due constitutes non-compliance by the Licensee with its Licence conditions and ComReg may take steps to recover the sum due, including taking compliance actions in accordance with the Authorisation Regulations.
- 2.72 In addition, where payment of any fee is not made in due time, then the Licensee shall pay to ComReg interest on the fees or part thereof that is outstanding at the rate payable in respect of late payments in commercial transactions pursuant to S.I. No. 580/2012 - European Communities (Late Payment in Commercial Transactions) Regulations 2012, between the date when such fee or part fell due and the date of payment of such fee or part thereof.⁴²
- 2.73 An amount payable by a person in respect of an outstanding Licence fee may be recovered by ComReg from the person as a simple contract debt in any court of competent jurisdiction.

2.4.7 Refund or adjustment of Licence Fees

- 2.74 As noted in Section 2.2.2 of this Document, in limited circumstances ComReg may refund or adjust Licence Fees payable by Winning Bidders due to the delayed commencement of Lots.
- 2.75 The refund or adjustment of fees payable to a Winning Bidder for each Lot so delayed shall be calculated as follows:
- a pro-rata portion of the Upfront Fees already paid by the Winning Bidder on a daily basis for each whole day following the commencement date of 1 August 2017 (or other commencement date as established by

⁴² For the avoidance of doubt, any fees paid in respect of late payment are not subject to refunds or adjustments as discussed in Section 2.4.7.

ComReg) that ComReg does not make the Lot available for Liberalised Use;⁴³ and

- a pro-rata portion of SUFs already paid by the Winning Bidder on a daily basis for each whole day following the commencement date of 1 August 2017 (or other commencement date as established by ComReg) that ComReg does not make the Lot available for Liberalised Use.

2.76 Refunds to the Winning Bidder will be paid by ComReg within 5 Working Days of its notification of delayed commencement, or if desired by the Winning Bidder these refunds can be offset against the following year's SUF (or multiple years' SUF).

- no refund of Upfront Fees and/or SUFs shall be payable by ComReg to any Winning Bidder for any delay to the availability of any Lot caused, or contributed to, by acts or omissions of that Winning Bidder, its servants or agents, or any failure on behalf of its suppliers;
- in submitting an Application, Applicants agree that if they become Winning Bidders, a failure to obtain consents, approvals, Apparatus or funding necessary to deploy a network or complete its Transition Activities as provided for under Section 3.8 of this document shall be deemed to be an omission on behalf of that Winning Bidder; and
- to the extent permitted by law, ComReg's liability for damage or loss of any nature arising from delayed access to Lots is expressly limited to the refunds or adjustments identified above and, in submitting an Application, Applicants agree to same.

2.77 Noting the local area nature of the Existing Licences, and any subsequent service areas in a TPL and TUL's⁴⁴ issued in respect of same, ComReg observes that the Transition Activities of these Licensees in the 3.6 GHz Band may only cover a small proportion of a Region in which new spectrum rights have been won by a Winning Bidder.

2.78 Where this proportion is greater than 25% of the geographic area of the Region ComReg will delay the commencement date of each Lot affected, unless otherwise requested by the Winning Bidder, and the refund or adjustment of fees payable to a Winning Bidder for each Lot so delayed shall be calculated as set out above.

⁴³ To calculate the Upfront Price associated with a Lot in a 3.6 GHz Band Liberalised Use Licence, ComReg will use the Round Prices in the Final Primary Bid Round and other relevant information.

⁴⁴ This provision only applies to TUL's which are undergoing Transition Activities in accordance with the 3.6 GHz Band Transition Plan.

2.79 Where this proportion is less than or equal to 25% of the geographic area of the Region, ComReg would not expect to delay the commencement of any such Lots affected⁴⁵ thereby facilitating the deployment of services by the Winning Bidder in the remaining part of this Region. To compensate the Winning Bidder for the issue of spectrum rights for less than the entire Region, the fees Associated with the service areas of the TPL's and TUL's affecting the geographic availability of Lots in this Region will be will be paid by ComReg to the Winning Bidder. Where the service area of a TPL and TUL affects two or more Winning Bidders, the fees will be apportioned on an equal basis between these Winning Bidders irrespective of the parameters Associated with each Winning Bidder's affected area (i.e. the number of Lots affected and the geographic proportion of the Region affected).⁴⁶

Other refunds of Licence Fees

2.80 Where a Licensee requests an amendment to its 3.6 GHz Band Liberalised Use Licence which is accepted by ComReg and which results in:

- a reduction of the quantum of spectrum assigned to a 3.6 GHz Band Liberalised Use Licence, the Licensee shall not be entitled to any refund of its Upfront Licence fee,⁴⁷ but shall be entitled to any excess SUFs paid in relation to this quantum of spectrum (which has been subject to the reduction) after the date this amendment takes effect and the Licensee no longer has a right of use over that spectrum pursuant to a Licence; or
- a reduction of the duration of one or more Lots in a 3.6 GHz Band Liberalised Use Licence, the Licensee shall not be entitled to any refund of its Upfront Licence fee, but shall be entitled to any excess SUFs paid in relation to the unused part of the Licence term where SUFs have already paid. Additionally the 3.6 GHz Band Liberalised Use Licensee will not be liable for any future SUFs on these surrendered Lots beyond the new expiry date of these Lots in its amended 3.6 GHz Band Liberalised Use Licence.

⁴⁵ ComReg may delay the commencement date of such Lots where objectively justified reasons for such a delay are provided by the Winning Bidder.

⁴⁶ This compensation mechanism is designed, in part, noting the complexities and various parameters associated with calculating refunds on alternative basis, noting that the quantum of any such refunds may be small given that the 3.6 GHz Band Transition Plan will seek to ensure that the Transition Activities are carried out in a timely manner which among other things minimises delays to the commencement date of Lots, and encourage the use of market mechanisms,

⁴⁷ For the avoidance of doubt, ComReg reserves the right to offer such refunds as part of any future reassignment/re-organisation of spectrum.

2.81 Where an amendment, surrender or withdrawal of a 3.6 GHz Band Liberalised Use Licence results from an enforcement action taken by ComReg, no 3.6 GHz Band Liberalised Use Licence fees paid will be refunded to the Licensee.

2.4.8 Enforcement Actions – Compliance with Licence Conditions, Licence Suspension, Licence Withdrawal

2.82 Enforcement of conditions of 3.6 GHz Band Liberalised Use Licences shall be carried out by ComReg in accordance with its statutory obligations including those set out in the Authorisation Regulations.

2.83 A 3.6 GHz Band Liberalised Use Licence may be suspended or withdrawn in accordance with the Authorisation Regulations.

2.84 In the event that enforcement action by ComReg results in the suspension, withdrawal (or foreshortening) of a 3.6 GHz Band Liberalised Use Licence or part thereof, no Licence fees paid in connection with that 3.6 GHz Band Liberalised Use Licence will be refundable.

2.4.9 Amendment of a 3.6 GHz Band Liberalised Use Licence

2.85 ComReg may amend the rights, obligations and procedures relating to a 3.6 GHz Band Liberalised Use Licence from time to time in accordance with the Authorisation Regulations.

2.4.10 The Draft Regulations and an Indicative 3.6 GHz Band Liberalised Use Licence

2.86 Annex 2 of this document sets out the Draft Regulations which would provide for the issuing of 3.6 GHz Band Liberalised Use Licences, 3.6 GHz Band Preparatory Licences, TPL's and TUL's. Among other things, these Draft Regulations specify the:

- Duration of a Licence;
- Conditions of a Licence; and
- Licence Fees.

2.87 An indicative 3.6 GHz Band Liberalised Use Licence is set out in Schedule 1 to the Draft Regulations, where:

- Part 1 of Schedule 1 sets out commencement and expiry dates for each Spectrum Block in the 3.6 GHz Band Liberalised Use Licence;

- Parts 2 and 3 of Schedule 1 set out the Apparatus for wireless telegraphy to which the 3.6 GHz Band Liberalised Use Licence applies and the location and details of same; and
- Part 4 of Schedule 1 sets out further licence conditions Associated with the 3.6 GHz Band Liberalised Use Licence.

2.88 The Draft Regulations and the indicative 3.6 GHz Band Liberalised Use Licence should be considered in conjunction with the text in this document and Document 15/140.

2.4.11 Other Considerations

Potential collaboration agreements between wireless operators

2.89 ComReg's most recent consideration of the issues Associated with potential collaboration agreements between wireless operators (such as spectrum pooling, spectrum sharing and network sharing) is set out in Section 7.4.2 of its Draft Radio Spectrum Management Strategy - 2016 to 2018 (Document 15/131).

2.5 The 3.6 GHz Band Preparatory Licence – Terms and Conditions

2.90 As outlined above, Winning Bidders in the Award Process will be entitled to apply for a 3.6 GHz Band Preparatory Licence, which will allow the holders of such licences to install networks and Associated equipment in advance of the commencement date of its 3.6 GHz Band Liberalised Use Licence, but will not allow any wireless telegraphy transmissions⁴⁸.

2.91 The following describes the principal terms and conditions Associated with a 3.6 GHz Band Preparatory Licence. These terms and conditions are reflected in the Draft Regulations as set out in Annex 2 to this document.

2.5.1 Entitlement to apply for a 3.6 GHz Band Preparatory Licence

2.92 In accordance with the rules for the Notification and Grant Stage as discussed in Section 3.7 of this Information Memorandum, Winning Bidders will be entitled to apply for a 3.6 GHz Band Preparatory Licence.

⁴⁸ If a licensee wishes to test equipment then they must apply separately for a test licence.

2.93 In accordance with the Spectrum Transfer framework⁴⁹, a 3.6 GHz Band Preparatory Licence may also be issued to a party who is not a Winning Bidder, where 3.6 GHz spectrum rights of use is transferred to this party.

2.5.2 Scope of a 3.6 GHz Band Preparatory Licence

2.94 A 3.6 GHz Band Preparatory Licence allows the Licensee to keep and have possession of, install and maintain WT Apparatus for terrestrial systems capable of providing electronic communications services in the 3.6 GHz Band. It is a condition of a 3.6 GHz Band Preparatory Licence that the Licensee shall not work or use said Apparatus.

2.95 It is a “non-exclusive” Licence for specific Regions of the Republic of Ireland as set out in the schedule to the Licence and all WT Apparatus licensed under the 3.6 GHz Band Preparatory Licence is required to comply with the 3.6 GHz EC Decision.

2.96 As set out in the Draft Regulations:

- a “non-exclusive” licence, means that ComReg is not precluded from authorising the keeping and having possession by persons other than the Licensee, on a Non-Interference and Non-Protected Basis, of Apparatus for wireless telegraphy on the radio frequency spectrum specified in the Licence;⁵⁰ and
- “on a Non-Interference and Non-Protected Basis” means that the use of Apparatus is subject to no harmful interference being caused to any radiocommunication service, and that no claim may be made for the protection of Apparatus used on this basis against harmful Interference originating from radiocommunication services.

2.5.3 3.6 GHz Band Preparatory Licence - Duration and Renewal

2.97 The duration of a 3.6 GHz Band Preparatory Licence is set by reference to its commencement and expiry dates.

2.98 Before a 3.6 GHz Band Preparatory Licence will be granted to a Winning Bidder, it must pay the Upfront Fee Associated with its 3.6 GHz Band

⁴⁹ See ComReg Document 14/11 and S.I. 34 of 2014

⁵⁰ As discussed in section 6.3.1 of Document 15/140, Article 2(1) of the 3.6 GHz EC Decision obliges member States to make available the 3.6 GHz band on a non-exclusive basis and this decision is binding on Member States. Further it is standard practice in Ireland that spectrum bands licensed to particular licensees are also made available to other Wireless Telegraphy apparatus on a non-interference and non-protected basis. ComReg does not presently foresee any material change in its policy on non-exclusivity over and above that already applied in other licensing regimes in Ireland.

Liberalised Use Licence. Consequently, the commencement date of a 3.6 GHz Band Preparatory Licence will be defined by reference to the timing of the Award Process and the Notification and Grant Stage as discussed in Section 3.7 of this document.

- 2.99 The expiry date of a 3.6 GHz Band Preparatory Licence will be set by reference to the latest commencement date of a Lot in the Licensee's 3.6 GHz Band Liberalised Use Licence.
- 2.100 A 3.6 GHz Band Preparatory Licence granted to a Licensee will be for the duration of the Licence as defined by reference to the above commencement and expiry dates of each Lot.
- 2.101 Once issued, the duration of the 3.6 GHz Band Preparatory Licence may be amended in accordance with the provisions of the Authorisation Regulations.

2.5.4 Licence Conditions Applicable to all 3.6 GHz Band Preparatory Licences

- 2.102 The conditions Associated with a 3.6 GHz Band Preparatory Licence are set out in Regulation 6 of the Draft Regulations. Among other things, Regulation 6 of the Draft Regulations sets out conditions in relation to the transfer of a 3.6 GHz Band Preparatory Licence in accordance with the Spectrum Transfer Regulations⁵¹.

2.5.5 Fees for a 3.6 GHz Band Preparatory Licence

- 2.103 An administrative fee of €100.00 will be payable to ComReg prior to the issue of a 3.6 GHz Band Preparatory Licence.
- 2.104 Additionally before a 3.6 GHz Band Preparatory Licence will be issued, Winning Bidders must pay the Upfront Fee Associated with its Winning Bid.

2.5.6 Enforcement Actions – Compliance with Licence Conditions, Licence Suspension, Licence Withdrawal

- 2.105 Enforcement of conditions of 3.6 GHz Band Preparatory Licences shall be carried out by ComReg in accordance with its statutory objectives including those set out in the Authorisation Regulations.
- 2.106 A 3.6 GHz Band Preparatory Licence may be suspended or withdrawn in accordance with the Authorisation Regulations.
- 2.107 In the event that enforcement action by ComReg results in the suspension, withdrawal (or foreshortening) of a 3.6 GHz Band Preparatory Licence, no

⁵¹ S.I. 34 of 2014

Licence fees paid in connection with the related 3.6 GHz Band Liberalised Use Licence will be refundable.

2.5.7 Amendment of a 3.6 GHz Band Preparatory Licence

2.108 ComReg may amend the rights, obligations and procedures relating to a 3.6 GHz Band Preparatory Licence from time to time in accordance with the Authorisation Regulations.

2.5.8 The Draft Regulations and an Indicative 3.6 GHz Band Preparatory Licence

2.109 The Draft Regulations as set out in Annex 2 of this document provide for the issuing of a 3.6 GHz Band Preparatory Licence on foot of this Award Process. Among other things, the Draft Regulations specify the:

- duration of a 3.6 GHz Band Preparatory Licence;
- conditions of a 3.6 GHz Band Preparatory Licence; and
- 3.6 GHz Band Preparatory Licence Fees.

2.110 An indicative 3.6 GHz Band Preparatory Licence is set out in Schedule 3 of the Draft Regulations.

- Part 1 of Schedule 2 sets out further licence conditions Associated with the 3.6 GHz Band Preparatory Licence; and
- Part 2 of Schedule 2 sets out the Statement of Authorised Apparatus Associated with the 3.6 GHz Band Preparatory Licence.

2.111 The Draft Regulations and indicative 3.6 GHz Band Preparatory Licence should be considered in conjunction with the text in this document and Document 15/140.

2.6 The TPL – Terms and Conditions

2.112 As noted above, following the Award Process, Existing Licensees may be required to make adjustments to their existing networks (referred to as Transition Activities) in order to comply with the outcome of the Award Process if they wish to continue to provide services following the cessation of the FWALA licensing scheme on 31 July 2017.

2.113 Subject to certain conditions, a Winning Bidder that is also an Existing Licensee will be able to apply for a TPL in order to facilitate the timely and orderly completion of its Transition Activities in line with the 3.6 GHz Transition Plan as provided for in Section 3.8 of this document.

2.114 The following describes the principal terms and conditions Associated with the TPL. These terms and conditions are set out in the Draft Regulations as set out in Annex 2 to this document.

2.6.1 Entitlement to apply for a 3.6 GHz TPL

2.6.2 Where an Existing Licensee is a Winning Bidder in a Region that contains some or all of the service area of its Existing Licence, and the Transition Activities Associated with this Existing Licence are likely to occur after 31 July 2017, that Existing Licensee will be entitled to apply for a TPL in order to facilitate the timely and orderly completion of its Transition Activities in line with the 3.6 GHz Band Transition Plan.

2.115 An Applicant will only be entitled to apply for a TPL with the same service area of its Existing Licence with a frequency assignment as determined by ComReg in order to facilitate the completion of the 3.6 GHz Transition Plan.

2.116 In accordance with the Spectrum Transfer framework⁵², a 3.6 GHz Band TPL may also be issued to another party, where such rights of use are transferred to this party.

2.6.3 Scope of the TPL

2.117 A TPL allows the Licensee to keep and have possession of, install, maintain, work and use Wireless Telegraphy (“WT”) Apparatus for terrestrial systems capable of providing electronic communications services in the 3.6 GHz Band for the duration of the TPL.

2.118 It is a “non-exclusive” Licence for one or more specific areas of the Republic of Ireland as set out in the schedule to same and all WT Apparatus licensed under the 3.6 GHz Band TPL is required to comply with the relevant EC decisions for the 3.6 GHz Band including the 3.6 GHz EC Decision.

2.119 As set out in the Draft Regulations:

- a “non-exclusive” licence, means that ComReg is not precluded from authorising the keeping and having possession by persons other than the Licensee, on a Non-Interference and Non-Protected Basis, of Apparatus for wireless telegraphy on the radio frequency spectrum specified in the Licence;⁵³ and

⁵² ComReg Document 14/11 and S.I 34 of 2014

⁵³ As discussed in section 6.3.1 of Document 15/140, Article 2(1) of the 3.6 GHz EC Decision obliges member States to make available the 3.6 GHz band on a non-exclusive basis and this decision is binding on Member States. Further it is standard practice in Ireland that spectrum bands licensed to particular licensees are also made available to other Wireless Telegraphy apparatus on a non-interference and non-protected basis.

- “on a Non-Interference and Non-Protected Basis” means that the use of Apparatus is subject to no harmful interference being caused to any radiocommunication service, and that no claim may be made for the protection of Apparatus used on this basis against harmful Interference originating from radiocommunication services.

2.6.4 TPL Licence Duration and Renewal

- 2.120 The duration of the TPL is set by reference to its commencement and expiry dates.
- 2.121 The commencement date of a TPL will be 1 August 2017, or such other date as determined by ComReg.
- 2.122 The expiry date of a TPL will be determined by ComReg with reference to the completion of its Transition Activities provided for under Section 3.8 of this document in respect of the 3.6 GHz Transition Plan.
- 2.123 Once issued, the duration of the TPL may be amended in accordance with the provisions of the Authorisation Regulations.

2.6.5 Licence Conditions Applicable to all TPL

- 2.124 The conditions Associated with a TPL are set out in Regulation 6 of the Draft Regulations. Among other things, Regulation 6 of the Draft Regulations sets out conditions in relation to:
- ensuring that the Apparatus or any part thereof, complies with Section 4 of the R&TTE Regulations; and
 - the transfer of a TPL to another party.

2.6.6 Fees for a TPL

- 2.125 The annual fee per FWALA Service Area in a TPL is detailed in Table 6 below.

Radio frequency spectrum bandwidth (paired channel)	Annual Fee (€)
Up to 7 MHz	1500
Over 7 MHz and up to 14 MHz	2000
Over 14 MHz and up to 28 MHz	2800

Table 6: Annual fee per FWALA Service Area in a TPL

ComReg does not presently foresee any material change in its policy on non-exclusivity over and above that already applied in other licensing regimes in Ireland.

2.126 The fee for an unpaired channel is calculated by reference to its “equivalent” paired channel bandwidth.

2.127 Where a spectrum rights for a FWALA Service Area in a Licence is granted for a portion of a year the fee to be paid by the licensee shall be calculated using $A \times (B/12) = C$, where

- A is the relevant annual fee set out in Table 6 above;
- B is the number of whole months for which the spectrum rights for a FWALA Service Area in the Licence is granted (if granted for a period of less than one month then, for the purpose of these calculations only, it shall be considered as a being granted for a period of one month); and
- C is the appropriate fee to be paid.

2.128 Additionally before a TPL will be issued, Winning Bidders must pay the Upfront Fee Associated with its Winning Bid.

2.6.7 Enforcement Actions – Compliance with Licence Conditions, Licence Suspension, Licence Withdrawal

2.129 Enforcement of conditions of TPLs shall be carried out by ComReg in accordance with its statutory objectives including those set out in the Authorisation Regulations.

2.130 A TPL may be suspended or withdrawn in accordance with the Authorisation Regulations.

2.131 In the event that enforcement action by ComReg results in the suspension, withdrawal (or foreshortening) of a TPL, no Licence fees paid in connection with the related 3.6 GHz Band Liberalised Use Licence will be refundable.

2.6.8 Amendment of a Licence

2.132 ComReg may amend the rights, obligations and procedures relating to a TPL from time to time in accordance with the Authorisation Regulations.

2.6.9 The Draft Regulations and an Indicative TPL

2.133 The Draft Regulations as set out in Annex 2 of this document provide for the issuing of a TPL on foot of this Award Process. Among other things, the Draft Regulations specify the:

- duration of a TPL;
- conditions of a TPL; and

- TPL Fees.

2.134 An indicative TPL is set out in Schedule 4 of the Draft Regulations.

2.135 The Draft Regulations and the indicative TPL should be considered in conjunction with the text in this document, and Document 15/140.

2.7 The TUL– Terms and Conditions

2.136 As outlined above, the purpose of the TUL is to:

- facilitate the timely and orderly completion of Existing Licensee’s Transition Activities provided for under Section 3.8 of this document; and
- maximise the benefits to users and ensure the efficient use of spectrum during the Transitional period.

2.137 The following describes the principal terms and conditions Associated with the TUL. These terms and conditions are set out in the Draft Regulations as set out in Annex 2 to this document.

2.7.1 Entitlement to apply for a 3.6GHz TUL

2.138 To be entitled to apply for a TUL, the following preconditions apply, namely that the Applicant:

- is an Existing Licensee or a TPL licensee in the service area for which it is making an Application;
- has agreed to be bound by the Transition Rules including the 3.6 GHz Transition Plan; and
- must hold a General Authorisation.

2.139 The Applicant will only be able to apply for a TUL for the same service area, for the same amount or a lower amount of spectrum rights, and for the equipment with the same functionality as currently licensed under its Existing Licence.

2.140 Where the Applicant is also a holder of new spectrum rights or a TPL, the Applicant will also be entitled to apply for a TUL provided the combined spectrum holdings under its new 3.6 GHz licence, the TPL licence and the TUL do not exceed the total amount of spectrum in its Existing Licence.

2.141 In accordance with the Spectrum Transfer framework⁵⁴, a 3.6GHz Band TUL may also be issued to another party, where such rights of use are transferred to this party.

2.7.2 Scope of the TUL

2.142 A TUL allows the Licensee to keep and have possession of, install, maintain, work and use Wireless Telegraphy (“WT”) Apparatus for terrestrial systems capable of providing electronic communications services in the 3.6 GHz Band.

2.143 A TUL will be issued on a non-protected non-interference basis.

2.144 A TUL is a “non-exclusive” Licence for one or more specific areas of the Republic of Ireland and as set out in the schedule to same, and all WT Apparatus licensed under the TUL is required to comply with the relevant EC decisions, including the 3.6 GHz EC Decision.

2.145 As set out in the Draft Regulations:

- a “non-exclusive” licence, means that ComReg is not precluded from authorising the keeping and having possession by persons other than the Licensee, on a Non-Interference and Non-Protected Basis, of Apparatus for wireless telegraphy on the radio frequency spectrum specified in the Licence;⁵⁵ and
- “on a Non-Interference and Non-Protected Basis” means that the use of Apparatus is subject to no harmful interference being caused to any radiocommunication service, and that no claim may be made for the protection of Apparatus used on this basis against harmful Interference originating from radiocommunication services.

2.7.3 TUL Licence Duration and Renewal

2.146 The duration of the TUL is set by reference to its commencement and expiry dates.

⁵⁴ ComReg Document 14/11 and S.I 34 of 2014

⁵⁵ As discussed in section 6.3.1 of Document 15/140, Article 2(1) of the 3.6 GHz EC Decision obliges member States to make available the 3.6 GHz band on a non-exclusive basis and this decision is binding on Member States. Further it is standard practice in Ireland that spectrum bands licensed to particular licensees are also made available to other Wireless Telegraphy apparatus on a non-interference and non-protected basis. ComReg does not presently foresee any material change in its policy on non-exclusivity over and above that already applied in other licensing regimes in Ireland.

2.147 The commencement date of a TUL will be 1 August 2017, or such other date as determined by ComReg.

2.148 The expiry date of a TUL will be 31 July 2022 or such earlier date as determined by ComReg, depending upon, among other things, the availability of suitable spectrum;

2.149 Once issued, the duration of the TUL may be amended in accordance with the provisions of the Authorisation Regulations.

2.7.4 Licence Conditions Applicable to all TUL

2.150 The conditions Associated with a TUL are set out in Regulation 6 of the Draft Regulations. Among other things, Regulation 6 of the Draft Regulations sets out conditions in relation to:

- ensure that the Apparatus or any part thereof, complies with Section 4 of the R&TTE Regulations; and
- the transfer of a TUL to another party.

2.7.5 Fees for a TUL

2.151 The annual fee per FWALA Service Area in a TUL is the annual fee per FWALA Service Area in a TPL plus a 17.29% increase⁵⁶ which results in fees as detailed in Table 7 below.

Bandwidth (paired channel)	2003 (March)	2016 (January)
Up to 7 MHz	1,500	1,745
Over 7 MHz and up to 14 MHz	2,000	2,327
Over 14 MHz and up to 28 MHz	2,800	3,257

Table 7: Annual fee per FWALA Service Area in a TUL

2.152 The fee for an unpaired channel is calculated by reference to its “equivalent” paired channel bandwidth.

2.153 Where a spectrum rights for a FWALA Service Area in a Licence is granted for a portion of a year the fee to be paid by the licensee shall be calculated using $A \times (B/12) = C$, where

- A is the relevant annual fee set out in Table 7 above;
- B is the number of whole months for which the spectrum rights for a FWALA Service Area in the Licence is granted (if granted for a period of

⁵⁶ This adjustment value is based on the change in the overall CPI index between March 2003 and January 2016 using the December 2011 base reference data available on the Central Statistics Office (CSO) website. This adjustment value will be updated in ComReg’s response to consultation to 15/140.

less than one month then, for the purpose of these calculations only, it shall be considered as a being granted for a period of one month); and

- C is the appropriate fee to be paid.

2.154 Additionally before a TUL will be issued, Winning Bidders must pay the Upfront Fee Associated with its Winning Bid.

2.7.6 Enforcement Actions – Compliance with Licence Conditions, Licence Suspension, Licence Withdrawal

2.155 Enforcement of conditions of TULs shall be carried out by ComReg in accordance with its statutory objectives including those set out in the Authorisation Regulations.

2.156 A TUL may be suspended or withdrawn in accordance with the Authorisation Regulations.

2.157 In the event that enforcement action by ComReg results in the suspension, withdrawal (or foreshortening) of a TUL, no Licence fees paid in connection with the related TUL will be refundable.

2.7.7 Amendment of a Licence

2.158 ComReg may amend the rights, obligations and procedures relating to a TUL from time to time in accordance with the Authorisation Regulations.

2.7.8 The Draft Regulations and an Indicative TUL

2.159 The Draft Regulations as set out in Annex 2 of this document provide for the issuing of a TUL on foot of this Award Process. Among other things, the Draft Regulations specify the:

- duration of a TUL;
- conditions of a TUL; and
- TUL Fees.

2.160 An indicative TUL is set out in Schedule 5 of the Draft Regulations.

2.161 The Draft Regulations and the indicative TUL should be considered in conjunction with the text in this document, and Document 15/140

2.8 The 3.6 GHz Band Spectrum Lease Licence

2.162 As outlined above, the purpose of the 3.6 GHz Band Spectrum Lease Licence is to facilitate the leasing of spectrum rights in accordance with such

procedures as may be specified by ComReg under Regulation 19 of the Framework Regulations⁵⁷:

2.163 The following describes the principal terms and conditions Associated with the 3.6 GHz Band Spectrum Lease Licence. These terms and conditions are set out in the Draft Regulations as set out in Annex 2 to this document.

2.8.1 Entitlement to apply for a 3.6 GHz Band Spectrum Lease Licence

2.164 A 3.6 GHz Band Spectrum Lease Licence may be applied for in accordance with such procedures as may be specified by ComReg under Regulation 19 of the Framework Regulations.

2.8.2 Scope of the 3.6 GHz Band Spectrum Lease Licence

2.165 A 3.6 GHz Band Spectrum Lease Licence allows the Licensee to keep and have possession of, install, maintain, work and use Wireless Telegraphy (“WT”) Apparatus for terrestrial systems capable of providing electronic communications services in the 3.6 GHz Band.

2.166 A 3.6 GHz Band Spectrum Lease Licence is a “non-exclusive” Licence for one or more specific areas of the Republic of Ireland and as set out in the schedule to same, and all WT Apparatus licensed under the 3.6 GHz Band Spectrum Lease Licence is required to comply with the relevant EC decisions, including the 3.6 GHz EC Decision.

2.167 As set out in the Draft Regulations:

- a “non-exclusive” licence, means that ComReg is not precluded from authorising the keeping and having possession by persons other than the Licensee, on a Non-Interference and Non-Protected Basis, of Apparatus for wireless telegraphy on the radio frequency spectrum specified in the Licence.⁵⁸
- “on a Non-Interference and Non-Protected Basis” means that the use of Apparatus is subject to no harmful interference being caused to any

⁵⁷ In Document 15/131, ComReg proposes to set out a regulatory framework for the leasing of spectrum rights in the radio spectrum policy programme (RSPP) bands (this includes the 3.6 GHz Band) in advance of 31 July 2017

⁵⁸ As discussed in section 6.3.1 of Document 15/140, Article 2(1) of the 3.6 GHz EC Decision obliges member States to make available the 3.6 GHz band on a non-exclusive basis and this decision is binding on Member States. Further it is standard practice in Ireland that spectrum bands licensed to particular licensees are also made available to other Wireless Telegraphy apparatus on a non-interference and non-protected basis. ComReg does not presently foresee any material change in its policy on non-exclusivity over and above that already applied in other licensing regimes in Ireland.

radiocommunication service, and that no claim may be made for the protection of Apparatus used on this basis against harmful Interference originating from radiocommunication services.

2.8.3 Licence Duration and Renewal

2.168 The duration of the 3.6 GHz Band Spectrum Lease Licence is set by reference to its commencement and expiry dates as detailed in the licence. These dates will be determined in accordance with such procedures as may be specified by ComReg under Regulation 19 of the Framework Regulations.

2.8.4 Licence Conditions Applicable to all 3.6 GHz Spectrum Lease Licences

2.169 The conditions Associated with a 3.6 GHz Spectrum Lease Licence are set out in Regulation 6 of the Draft Regulations. Among other things, Regulation 6 of the Draft Regulations sets out conditions in relation to:

- ensure that the Apparatus or any part thereof, complies with Section 4 of the R&TTE Regulations; and

2.8.5 Fees for a 3.6 GHz Band Spectrum Lease Licence

2.170 The fee for a 3.6 GHz Spectrum Lease Licence will be determined in accordance with such procedures as may be specified by ComReg under Regulation 19 of the Framework Regulations.

2.171 Additionally before a 3.6 GHz Band Spectrum Lease Licence will be issued, Winning Bidders must pay the Upfront Fee Associated with its Winning Bid.

2.8.6 Enforcement Actions – Compliance with Licence Conditions, Licence Suspension, Licence Withdrawal

2.172 Enforcement of conditions of 3.6 GHz Band Spectrum Lease Licence shall be carried out by ComReg in accordance with its statutory objectives including those set out in the Authorisation Regulations.

2.173 A 3.6 GHz Band Spectrum Lease Licence may be suspended or withdrawn in accordance with the Authorisation Regulations.

2.174 In the event that enforcement action by ComReg results in the suspension, withdrawal (or foreshortening) of a 3.6 GHz Band Spectrum Lease Licence, no Licence fees paid in connection with the related 3.6 GHz Band Spectrum Lease Licence will be refundable.

2.8.7 Amendment of a Licence

2.175 ComReg may amend the rights, obligations and procedures relating to a 3.6 GHz Band Spectrum Lease Licence from time to time in accordance with the Authorisation Regulations.

2.8.8 The Draft Regulations and an Indicative 3.6 GHz Band Spectrum Lease Licence

2.176 The Draft Regulations as set out in Annex 2 of this document provide for the issuing of a 3.6 GHz Band Spectrum Lease Licence on foot of this Award Process. Among other things, the Draft Regulations specify that the duration, conditions, and fees of a 3.6 GHz Band Spectrum Lease Licence will be determined in accordance with such procedures as may be specified by ComReg under Regulation 19 of the Framework Regulations.

2.177 An indicative 3.6 GHz Band Spectrum Lease Licence is set out in Schedule 2 of the Draft Regulations.

2.178 The Draft Regulations and the indicative 3.6 GHz Band Spectrum Lease Licence should be considered in conjunction with the text in this document, and Document 15/140.

Chapter 3

3 The Award Process

- 3.1 This chapter provides an overview of the various stages of the Award Process. The detailed rules that apply to the Auction stages within the Award Process are described in Chapter 4.
- 3.2 For the avoidance of doubt, references throughout this Information Memorandum to ComReg using its discretion shall mean ComReg exercising such discretion acting reasonably and in accordance with its statutory functions, objectives and duties.

3.1 Lots Available

- 3.3 The available spectrum rights of use will be awarded on a regional basis, using a TDD band plan in a total of nine Regions (see Section 2.2 of Chapter 2 for a definition of the Regions).
- 3.4 In each Region, a total of 66 Lots will be available. There are two types of Lots:
- **A-Lots** - a single 25 MHz frequency-specific Lot using frequencies 3 410 MHz – 3 435 MHz; and
 - **B-Lots** - 65 frequency-generic Lots of 5 MHz each in the frequency range 3 475 MHz – 3 800 MHz.
- 3.5 B-Lots will first be assigned on a frequency-generic basis. That is, demand expressed by Applicants in their Initial Bids⁵⁹ and any Bids submitted by Bidders in the Main Stage will be for blocks of spectrum within the frequency range 3 475 MHz – 3 800 MHz but which do not have specific frequencies assigned to them. The specific frequency assignments will subsequently be decided in a separate Assignment Stage.
- 3.6 All A-Lots have a specific frequency range and therefore will not be included in the Assignment Stage.
- 3.7 For the Main Stage of the Auction, Lots will be split into 18 **Lot Categories**, A1-A9 and B1-B9 (two Lot Categories for each Region, splitting the A-Lots and B-Lots available).

⁵⁹ A Bidder's Initial Bid is the Package defined by the Lots specified by the Bidder on its Initial Bid Form and the corresponding Bid Amount calculated as the sum of the Reserve Prices for the Lots specified on the Bidder's Initial Bid Form.

- 3.8 Lots in this Award Process are being made available from 1 August 2017 (or some later date as may be specified by ComReg in accordance with the provisions set out in Chapter 2) to 31 July 2032.
- 3.9 Table 8 provides an overview of the Lots available, showing for each Lot Category:
- the Region Associated with that Lot Category;
 - the Associated frequency band for the Lot(s) in that Lot Category;
 - the number of Lots available in that Lot Category;
 - the size of each Lot (in MHz) in that Lot Category;
 - the Reserve Price⁶⁰ per Lot for Lots in that Lot Category and the Associated annual Spectrum Usage Fees (SUFs) before Indexation; and
 - the number of Eligibility Points Associated with a Lot in that Lot Category for the purpose of applying the Activity Rules in the Main Stage of the Auction.⁶¹

⁶⁰ Licences are awarded subject to payment of the Upfront Fee determined by the Award Process. The Reserve Price indicates the minimum SAF for each Lot included in the Licence and does not include any subsequent payment of SUFs.

⁶¹ The Eligibility Points are used to rank different combinations of Lots (or Packages) in order to assess demand and implement the Activity Rules. The Eligibility of a Package is equal to the sum of Eligibility Points of all the Lots included in the Package. The Activity Rules constrain the amount that Bidders can offer when bidding for Packages for greater Eligibility than their earlier Bids. However, Bidders can still bid for such Packages subject to these constraints being met. Further details are provided in Section 3.5 and Section 4.2

Lot Category	Region	Frequency band	Number of Lots available	Lot size	Reserve Price per Lot (€)	Annual SUF per Lot (€)	Eligibility Points per Lot
A1	Border, Midlands & West	3 410 - 3 435 MHz	1	25 MHz	114,000	17,670	50
B1	Border, Midlands & West	3 475 - 3 800 MHz	65	5 MHz	22,800	3,534	10
A2	South West	3 410 - 3 435 MHz	1	25 MHz	72,000	11,160	25
B2	South West	3 475 - 3 800 MHz	65	5 MHz	14,400	2,232	5
A2	East	3 410 - 3 435 MHz	1	25 MHz	64,000	9,920	25
B2	East	3 475 - 3 800 MHz	65	5 MHz	12,800	1,984	5
A4	South East	3 410 - 3 435 MHz	1	25 MHz	44,000	6,820	25
B4	South East	3 475 - 3 800 MHz	65	5 MHz	8,800	1,364	5
A5	CSO Boundary for Dublin City and Suburbs	3 410 - 3 435 MHz	1	25 MHz	178,000	27,590	75
B5	CSO Boundary for Dublin City and Suburbs	3 475 - 3 800 MHz	65	5 MHz	35,600	5,518	15
A6	CSO Boundary for Cork City and Suburbs	3 410 - 3 435 MHz	1	25 MHz	34,000	5,270	10
B6	CSO Boundary for Cork City and Suburbs	3 475 - 3 800 MHz	65	5 MHz	6,800	1,054	2
A7	CSO Boundary for Limerick City and Suburbs	3 410 - 3 435 MHz	1	25 MHz	16,000	2,480	5
B7	CSO Boundary for Limerick City and Suburbs	3 475 - 3 800 MHz	65	5 MHz	3,200	496	1

Lot Category	Region	Frequency band	Number of Lots available	Lot size	Reserve Price per Lot (€)	Annual SUF per Lot (€)	Eligibility Points per Lot
A8	CSO Boundary for Galway City and Suburbs	3 410 - 3 435 MHz	1	25 MHz	14,000	2,170	5
B8	CSO Boundary for Galway City and Suburbs	3 475 - 3 800 MHz	65	5 MHz	2,800	434	1
A9	CSO Boundary for Waterford City and Suburbs	3 410 - 3 435 MHz	1	25 MHz	8,000	1,240	5
B9	CSO Boundary for Waterford City and Suburbs	3 475 - 3 800 MHz	65	5 MHz	1,600	248	1

Table 8: Lots available in the Award Process

3.2 Process Overview and Timeline

3.10 This section describes the overall structure of the Award Process.

3.11 The Award Process comprises the following stages:

- an **Application Stage**, during which Applicants can submit Applications to ComReg for participation in the Award Process in accordance with the procedures described in Section **Error! Reference source not found.** The Application must include an **Initial Bid** nominating a selection of Lots at Reserve Prices.
- a **Qualification Stage**, during which ComReg will examine Applications received to determine which Applicants are qualified to participate in the Award Process as Bidders. ComReg will also determine whether an Auction stage is necessary on the basis of the demand expressed by Bidders in their Initial Bids;
- if required, an **Auction**, consisting of either a Main Stage and an Assignment Stage, or an Assignment Stage only, where:
 - the **Main Stage** determines the number of Lots to be awarded to each Bidder in each Lot Category, and the Base Price that Winning Bidders will have to pay for their Lots. The Main Stage consists of:
 - one or more Primary Bid Rounds, during which Bidders express their demand for Lots at given Round Prices set by the Auctioneer each round;
 - a Supplementary Bids Round, in which Bidders can submit multiple, mutually exclusive Bids for alternative Packages of Lots, with discretionary Bid Amounts (subject to the constraints described in Section 3.5.2); and
 - an announcement to Bidders of the Winning Bidders and the number of Lots won by each Winning Bidder in each Lot Category and, for each Winning Bidder, its own Base Price;
 - the **Assignment Stage**, which determines the specific frequencies in each Region that are to be assigned to each of the Winning Bidders that are to be awarded B-Lots in accordance with the outcome of the Main Stage, and the Additional Prices to be paid by each Assignment Bidder. The Assignment Stage consists of:

- a period in which groups of Winning Bidders that are to be awarded B-Lots may form Alliances to participate in the Assignment Stage as a single Assignment Bidder;⁶²
 - if required, an Assignment Round, in which Assignment Bidders may bid for alternative frequency assignments corresponding to the Lots won in the Main Stage. This provisionally determines the specific frequencies to be assigned to each Assignment Bidder, which will be notified to all Assignment Bidders, along with each Assignment Bidder's own Additional Price Associated with its frequency assignment; and
 - a Negotiation Phase, in which Assignment Bidders can negotiate a re-organisation of the frequency assignments above State Services in one or more Regions (subject to restrictions and approval from ComReg), and in which Alliances must notify ComReg of the specific frequencies to be awarded to each Alliance member; and
- a **Notification and Grant Stage**, during which ComReg will notify the Winning Bidders of their entitlement to apply⁶³ for and be granted a Licence in accordance with the outcome of the Award Process, subject to certain conditions including the payment of fees.

3.12 This process is illustrated in Figure 4 below.

3.13 If an Auction is necessary, an Electronic Auction System (EAS) will be used. This will provide Bidders with an interface through which they must check and submit their Bids.

⁶² For the Assignment Stage (and under certain conditions), groups of Winning Bidders that are to be awarded B-Lots in accordance with the outcome of the Main Stage are allowed to form an 'Alliance' to participate in the Assignment Stage as a single Bidder. The ability to form Alliances in certain circumstances has been introduced to take account of the regional licence structure of the Award Process and in recognition that there may be significant efficiency in two or more Winning Bidders being assigned similar frequencies across Regions, in particular where coordination at regional borders is important. Each Winning Bidder of the Main Stage can participate in at most one Alliance. At the end of this period, each of the Winning Bidders who are to be awarded B-Lots and who form part of an Alliance, shall each become Alliance Bidders. Therefore, the term Alliance Bidder refers to an individual Bidder or an Alliance of Bidders, as appropriate. Further details on forming an Alliance for the Assignment Stage are provided in Section 3.6.1 and Section 4.3.2.

⁶³ For the avoidance of doubt, the payment of each Winning Bidder's Upfront Fee is a pre-requisite condition to that Winning Bidder being entitled to apply for a 3.6 GHz Band Preparatory Licence and a 3.6 GHz Band Liberalised Use Licence.

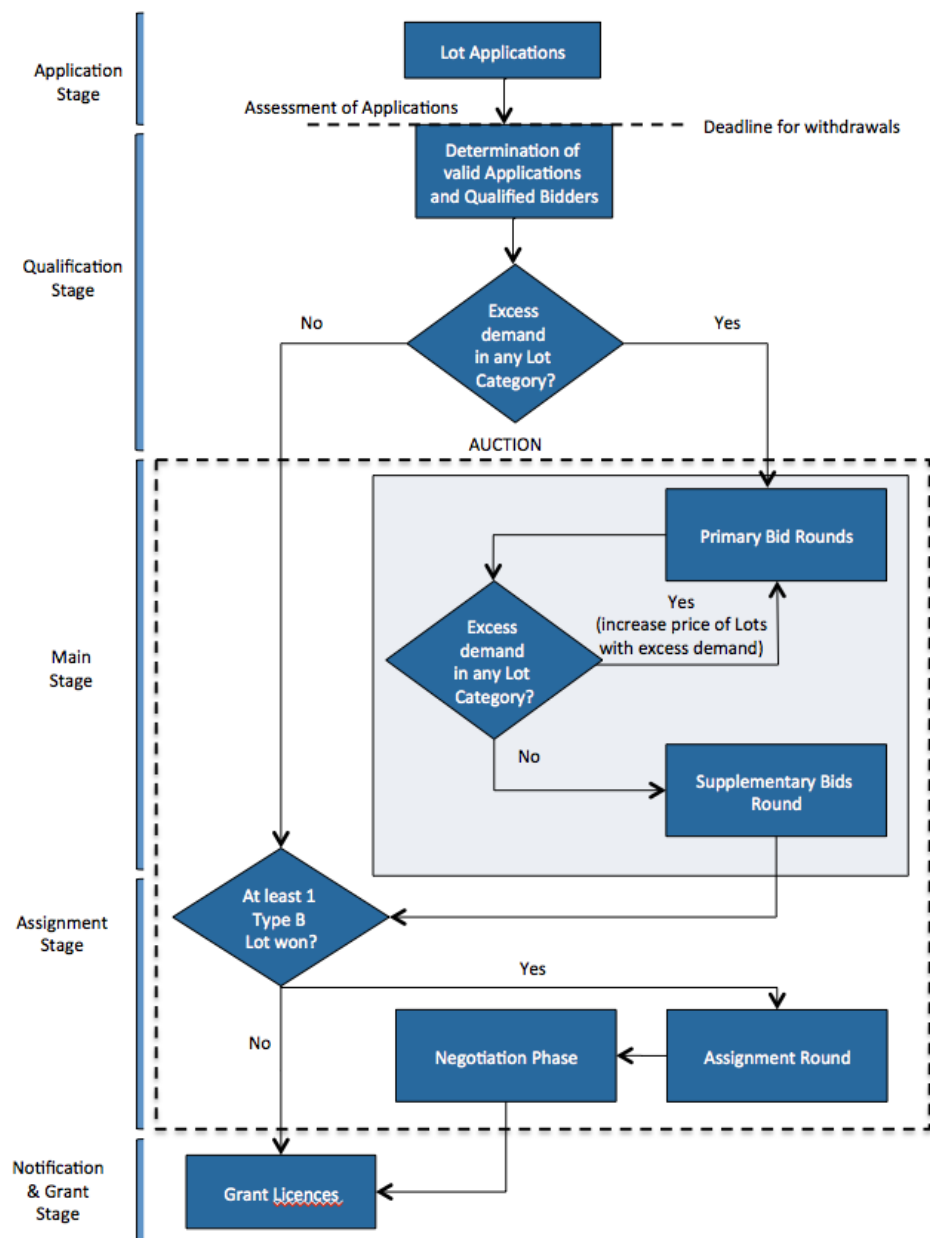


Figure 4: Overview of the Award Process

- 3.14 The indicative timeline for the first two stages of the Award Process (i.e. the Application Stage and the Qualification Stage) is set out in Table 9 below.
- 3.15 ComReg reserves the right to vary these indicative timelines as may be necessary, in order to take into account any changed or unforeseen circumstances. ComReg, in doing so, would give appropriate notification (e.g. by issuing a public notice on its website or giving notice to selected parties, such as Applicants or Bidders, depending on the stage of the Award Process).

Stage of process	Milestone	Timeline
Application Stage	Publication of Final Information Memorandum on ComReg's website	X
	Presentation to Interested Parties on the Award Process and the Auction Rules	X + 2 weeks
	Deadline for submission of questions regarding the Award Process	X + 4 weeks
	Final date for the responses to questions on the Award Process to be published on ComReg's website	X + 6 weeks
	Deadline date for submission of Application Forms	X + 8 weeks
	Deadline date for submission of Deposits	X + 8 weeks
	Restriction on Auction-related communications come into effect	On submission of first Application to ComReg
Qualification Stage	Deadline for withdrawal of Application	X + 11 weeks
	Each Applicant to be informed by ComReg about whether or not it has become a Bidder Confirmation of the requirement for a Main Stage of the Auction and notification to Bidders of scheduled start date of the first Primary Bid Round; <u>or</u> Confirmation that there is no requirement for a Main Stage and notification to Winning Bidders of Winning Bids and start date for the Assignment Stage; <u>or</u> Confirmation that there is no requirement for a Main Stage or an Assignment Stage and notification to	X + 14 weeks

Stage of process	Milestone	Timeline
	Winning Bidders of Winning Bids and progression to Notification and Grant Stage	
	Return of Deposits to Applicants that have not become Bidders	X + 15 weeks
	Circulation of Bidder Materials for accessing and using the EAS to Bidders	X + 16 weeks
	Start of Mock Auctions for Bidders	

Table 9: Indicative Timeline for the Award Process

3.16 ComReg is currently not in a position to announce with certainty the timing of the later stages of the Award Process (i.e. the Main Stage, the Assignment Stage, the Notification and Grant Stage and the 3.6 GHz Band Transition Process), as these will depend on the outcome of previous stages in the Award Process and/or circumstances outside ComReg's control.⁶⁴

3.17 ComReg will provide further information on the timing of these stages to the appropriate parties (e.g. Bidders, Winning Bidders, etc.) during the course of the Award Process. The timelines for these stages will be in accordance with the terms set out in this document which, among other things, states that:

- the start date of the Auction will be notified to Bidders with at least ten clear Working Days prior notice (see Section 3.4.1);
- there will be at least three clear Working Days between the last Primary Bid Round and the start of the Supplementary Bids Round (see Section 4.2.3);
- following the outcome of the Main Stage (or Qualification Stage if a Main Stage was not required), a period of ten clear Working Days will be provided to Winning Bidders to establish any Alliances for participating in the Assignment Stage;
- following the outcome of the Assignment Round (if required), a period of ten clear Working Days will be provided to the Assignment Bidders to negotiate a re-organisation of the specific frequencies awarded in the frequency band 3 475 – 3 800 MHz in the Assignment Round, subject to

⁶⁴ For example: the outcome of the Qualification Stage will determine whether there is a need for a Main Stage, the end of the Main Stage determines the start date of the Assignment Stage.

a number of restrictions and approval from ComReg (see Section 4.3.11); and

- Upon completion of the Assignment Stage, ComReg will issue a communication to Winning Bidders and Existing Licensees of the specific frequency assignments determined by the Assignment Stage to inform the formulation of a Transition Plan as further detailed in Section 3.8.

3.3 Application Stage

- 3.18 The Award Process begins on the day on which ComReg publishes the final Information Memorandum.
- 3.19 The final Information Memorandum will contain a deadline⁶⁵ by which point all Interested Parties wishing to participate in the Award Process must have submitted an Application and Associated Deposit. Such Interested Parties will have approximately 8 weeks from the publication of the final Information Memorandum to submit a complete and valid Application.
- 3.20 ComReg is mindful of the complexities involved in the Award Process. With this in mind, during the time between publication of the final Information Memorandum and the deadline to submit an Application, ComReg will provide a presentation on the Award Process and of the Auction Rules. This presentation will seek to provide as much clarity and explanation around the Award Process and the Auction Rules as possible, taking into account the fact that some Interested Parties may not have previously participated in any similar process. Further details will be published on ComReg's website regarding this presentation and ComReg would welcome feedback from Interested Parties as to what would be useful to address. ComReg will also facilitate the submission of questions regarding the Award Process and Auction Rules and will respond publicly to these questions on an anonymous basis.⁶⁶
- 3.21 The deadline for all Interested Parties to submit their Applications to participate in the Award Process, together with the required monetary Deposit (the "Application Date")⁶⁷ is [*a date will be specified in the final Information Memorandum*]. This date is approximately 8 weeks following the date of publication of the final Information Memorandum.

⁶⁵ ComReg has published a provisional timetable within this draft Information Memorandum. If the deadline for application in this draft Information Memorandum and that published on ComReg's website differ, the deadline for applications published on ComReg's website takes precedence.

ComReg is under no obligation to consider applications that have not been submitted in full by this deadline.

⁶⁶ See Section 3.3.1 in this regard.

⁶⁷ ComReg is under no obligation to consider Applications that have not been submitted in full by the Application Date.

- 3.22 For the purpose of this document, and for the Award Process, the term “**Auction Rules**” shall refer to the rules and procedures relating to the Auction, as presented in Chapters 3 and 4 of this Information Memorandum, and to any other material to which the rules in Chapters 3 and 4 directly refer. To the extent that there is any inconsistency between the description of the Auction Rules set out in this Chapter and the detailed Auction Rules set out in Chapter 4, the description set out in Chapter 4 shall prevail.
- 3.23 As part of their Applications and in order to be eligible to Bid in this Award Process, all Interested Parties must submit:
- a completed Application Form;⁶⁸
 - a cleared monetary Deposit; and
 - any other documentation required to be annexed to the Application Form.
- 3.24 An Interested Party that submits an Application is herein referred to as an “Applicant”.

Consortium

- 3.25 Joint bidding can occur at two points in the Award Process.
- 3.26 The first instance is prior to the Application Stage, where interested parties can decide, if they wish, to bid jointly in the award as a consortium. This consortium will be deemed to be a single entity for the purposes of the Award Process and in the event of this single entity becoming a Winning Bidder in the Award, a 3.6 GHz Band Liberalised Use Licence would be issued to this consortia as a single entity.
- 3.27 While this possibility was afforded to interested parties in the MBSA, ComReg envisages that it could be more relevant for interested parties in the present award due to the interest expressed by smaller operators in the band. By means of example, it may be a useful option for smaller operators that may currently operate in a localised area under the existing FWALA scheme, but as part of a consortium could perhaps better compete for one or more of the Regions proposed. Equally some of the larger Regional Operators could form a consortium, to acquire a multi-regional / national licence.
- 3.28 The second form of joint bidding provided for in this Award Process is the formation of Alliances, an innovation on the process under the MBSA, which has been developed to take account, in particular, of the fact that, in the 3.6 GHz Band award, ComReg will release spectrum rights of use on a regional basis. Winning Bidders will be able to decide, prior to the Assignment Stage,

⁶⁸ See Annex 3

to bid in the Assignment Round as an Alliance. This possibility and the adjustments to the Award Process is explained further in Section 3.6 and Section 4.3.

3.3.1 Questions

3.29 ComReg will facilitate the submission of questions by Interested Parties up to a certain date in order to promote clarity and understanding of the Award Process and Auction Rules (see also Section 5.2.5 on errors).

3.30 [The final Information Memorandum will set out the relevant contact details, timelines and process in respect of the submission of such questions].

3.3.2 Application Form and Supporting Documents

3.31 The Application Form can be found in Annex 3 and must be completed by each Applicant.

3.32 Part 1 of the Application Form concerns Administrative Information and requires the Applicant to provide, among other things, details of the person(s) identified as its direct point of contact for the purposes of the Award Process. In completing this part of the Application Form, the Applicant must also submit appropriate evidence that the persons signing the Application Forms and the persons bidding on behalf of the Applicant (“**Authorised Agents**”) are duly authorised by the Applicant to do so. If Applicants wish to have the ability to participate in the Assignment Stage as part of an Alliance, this should include evidence that Authorised Agents are further authorised to make binding Assignment Stage Bids on behalf of such an Alliance. Appropriate evidence would include:

- where the Applicant is incorporated in the EU, evidence that the Authorised Agents are registered pursuant to the appropriate national implementing measures transposing Article 10 of Directive 2009/101/EC (Regulation 7 of S.I. 306 2014 in Ireland);
- a board resolution from an Applicant which is a company registered in Ireland;
- an irrevocable power of attorney; or
- equivalent evidence in respect of an Applicant from outside Ireland, supported by a legal opinion from a law firm in their jurisdiction, carrying in excess of €20,000,000 in professional indemnity insurance, addressed to ComReg, certifying that the Authorised Agents are entitled to bind the Applicant contractually.

- 3.33 Part 2 of the Application Form, the Applicant Declaration which must be signed by the Applicant, requires the Applicant to agree to be bound by the Auction Rules as set out in this document including:
- the provisions regarding agreements with third parties;
 - the Auction Rules relating to confidentiality;
 - the rules around Bidder behaviour applying for the duration of the Award Process;⁶⁹ and
 - the Transition Rules which form part of the Auction Rules.
- 3.34 Part 3 of the Application Form, the Initial Bid Form, lists all of the Lot Categories, the number of Lots available within each Lot Category, the Reserve Price per Lot in each Lot Category, and the number of Eligibility Points per Lot in each Lot Category. These Lot Categories are set out in Table 8 above. On its Initial Bid Form, an Applicant must specify the number of Lots in each Lot Category it is willing to buy at the applicable Reserve Price. This selection of Lots at the Reserve Prices will be the Bidder's Initial Bid. In the event that an Auction is not required, each Bidder will be awarded the Lots in its Initial Bid. In the event that an Auction is required, the Initial Bid will remain as a binding Bid that could become a Winning Bid. The Initial Bid is also relevant to the Application of the Activity Rules for the Main Stage, as discussed below.
- 3.35 In order for an Application to be valid, it must include information regarding the ownership structure of the Applicant ("**Ownership Structure Document**"). In the Ownership Structure Document the Applicant must (a) certify to the best of its knowledge that the document is a detailed, complete and clear overview of its ownership structure; (b) certify that the Applicant's ownership structure complies with the rules set out in Section 3.3.4); and (c) list the Applicant's Insiders.
- 3.36 If at any point during the Award Process a Bidder is found by ComReg to have submitted information on its ownership structure which is materially incomplete or incorrect, ComReg has the discretion to take whatever measures that it deems appropriate, including requiring one or more Bidders to verify information already provided, and to provide additional information and supporting evidence. If ComReg is unable to determine to its reasonable satisfaction that two or more Bidders are not connected or Associated (in the terms as set out in Section 3.3.4) on the basis of information provided to it, it reserves the right to treat those Bidders as being connected or Associated.

⁶⁹ Which apply in addition to but without prejudice to Irish and EU competition law.

- 3.37 Applications are subject to Competition Caps (see paragraph 4.12). If an Application Form includes Lots that, if awarded, would exceed the relevant Competition Caps, ComReg may, at its discretion contact the particular Applicant and seek to resolve the issue by having the Applicant amend its Initial Bid Form. If ComReg is unable to resolve the issue in this manner, ComReg shall reject the Application on the basis that it is invalid and shall notify the Applicant of its decision.
- 3.38 A completed valid Application Form represents an unconditional offer to buy the number of Lots specified by the Applicant in its Initial Bid Form, at the Reserve Prices, and to discharge the related SUFs over the term of the Licence.
- 3.39 In addition, in submitting its Application Form, an Applicant agrees to be bound by terms and conditions Associated with the Award Process as set out in this Information Memorandum which, among other things, include:
- its acknowledgement that the commencement date of Lots may be delayed as specified by ComReg;
 - to the extent permitted by law, its agreement that ComReg's aggregate liability for all losses or damages of any nature arising from delayed access to Lots is expressly limited to the refunds or adjustments of Licence fees as set out in Section 2.4.7 of this Information Memorandum;
 - its agreement that in the event that it identifies or suspects an error or omission in the rules of the Award Process or the implementation of these rules by the EAS it shall notify ComReg at the earliest opportunity;
 - its agreement that if it becomes a Winning Bidder, then its failure to obtain consents, approvals, Apparatus or funding necessary to deploy a network or complete Transitional activities shall be deemed to be a breach of the Auction Rules by that Winning Bidder;
 - its agreement that if it becomes a Winning Bidder, to participate in the Assignment Stage and to be bound by its outcome; and
 - its agreement to participate in the development of the Transition Plan and to be bound by the Transitional Rules of the Award Process.

3.3.3 Deposits

- 3.40 An Applicant must submit a monetary Deposit with its Application. The required amount of the Deposit shall at least correspond to the sum of the Reserve Prices of Lots requested by the Applicant in its Initial Bid Form.
- 3.41 The Applicant's Deposit must be transferred to the bank account nominated by ComReg as specified in Annex 3, and is to be received as cleared funds in

ComReg's account⁷⁰ before [a time and date will be specified in the final Information Memorandum].

- 3.42 ComReg will use all monies received from each Applicant to purchase NTMA⁷¹ Exchequer Notes. Interest, if earned, will be paid by ComReg on funds held by it during the Award Process and Applicants will receive any interest accrued.
- 3.43 Where any section or part of this Information Memorandum indicates that:
- (a) an Applicant or Bidder may in part or whole forfeit its Deposit; and/or
 - (b) ComReg may impose a sanction on the Applicant or Bidder that includes the forfeiture of part or all of the Deposit which was paid on Application,

ComReg will adopt a proportionate and fair approach, taking into account ComReg's statutory objectives and the individual circumstances in each case (including the nature and seriousness of any breach or non-compliance).

3.3.4 Ownership Rules

- 3.44 Each Interested Party applying to take part in the Award Process and all Bidders are subject to the ownership rules.
- 3.45 The ownership rules apply from the submission of Applications until the public announcement on the outcome of the Award Process by ComReg.
- 3.46 Bidders are subject to the ownership rules to help ensure that they both Bid for and, if applicable, win Licences as independent entities and in accordance with applicable law. In particular, the ownership rules ensure that the Competition Caps cannot be circumvented and prevent a Bidder from having any unfair advantage or distorting competition within the Award Process by being able to coordinate with another Bidder.
- 3.47 In essence, the ownership rules require that no entity in a "Bidding Group" (that is, a Bidder and its Connected Persons) is connected to or Associated with any entity in another Bidding Group.
- 3.48 ComReg considers that Bidders are:
- "connected" if they have common or overlapping Bidding Groups.

⁷⁰ Bidders are cautioned to ensure that the cleared funds received by ComReg are required to be the amount of the Deposit specified in euro. Bidders should ensure that the amount of funds received by ComReg is not diminished by bank charges, exchange rate fluctuations or similar matters.

⁷¹ National Treasury Management Agency.

- “Associated” if their Bidding Groups do not overlap but there is nonetheless a degree of common ownership between the Bidders.

3.49 The following relations must not exist between Bidders:

- a Bidder or Connected Person within one Bidding Group must not also be a Bidder or Connected Person in another Bidding Group.
- two or more Bidders must not be Associated Bidders.

3.50 Before submitting its Application, a potential Bidder must take all reasonable measures to identify its Connected Persons, Associated Bidders and Insiders.

3.51 Annex 8 is illustrative of the types of relations that ComReg considers to fall within the concepts of Connected Persons and Associated Bidders (Insiders are discussed in the following section). If ComReg considers that one of the prohibited relations referred to in paragraph 3.49 above may exist, the procedure set out in Annex 8 will apply. Annex 8 also describes when ComReg may grant exemptions from the ownership rules, and the rules relating to joint bidding, restructuring and changes to ownership structure.

3.52 The rules set out above and in Annex 8 do not imply that ComReg has taken a position in this Information Memorandum on what Bidder connections, ownership structures or associations of a Bidder may or may not be lawful or permitted under Irish or EU competition law. Such assessment falls outside the scope of this Information Memorandum.

Joint bidding

3.53 A Bidding Group may be under the joint control of two or more persons. Persons wishing to Bid in consortium as a Bidding Group will be viewed as a single entity for the purposes of applying ownership rules (as detailed in this Section), rules on confidentiality and Bidder behaviour (see Section 3.3.5) and the Auction Rules within the Award Process. Note, in particular, that such an entity would be subject to the same Competition Caps as other Bidders, (see paragraph 4.12 below)

3.3.5 Confidential Information and Bidder behaviour

3.54 This section 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.⁷² The Auction Rules require that any Applicant shall refrain from any action that could undermine the running of the Award Process. The Auction Rules also set out a number of specific rules in relation to Confidential Information and Bidder behaviour, other restrictive practices capable of distorting the outcome of the Award Process, and the behaviour of employees and legal entities that are related or connected to the Bidder.

- 3.55 As part of its Application to be awarded spectrum rights of use being made available in the Award Process, each Applicant is required to confirm that it has and will continue to comply with the Auction Rules and that it has taken all reasonable measures to ensure that its Connected Persons, employees and Insiders⁷³ have and will continue to at all times comply with these rules. Notwithstanding Section 3.3.4, if at any point it becomes apparent that an Applicant or Bidder, its Connected Persons or its Insiders (as defined below) have failed to comply with the Auction Rules, the Applicant or Bidder, as appropriate, will be deemed responsible for that breach and may, depending on the nature and seriousness of the breach, be excluded from the Award Process and/or forfeit part or all of the Deposit it paid at the Application Stage. In certain circumstances, ComReg may also suspend or withdraw a Winning Bidder's Licence(s) if, after award of the Licence(s), it emerges that the Bidder, its Connected Persons or its Insiders breached the Auction Rules.
- 3.56 Applicants should note that, even if they are unsuccessful in becoming Bidders, they remain bound by the Auction Rules on release of Confidential Information until the public announcement on the outcome of the Award Process by ComReg.

Confidential Information and Insiders

- 3.57 “**Confidential Information**” means any information which is not in the public domain and which, if known to another Bidder, may influence the amount that the Bidder is willing to Bid for Lots or the strategy it adopts in Bidding for such Lots in the Auction. Confidential Information shall include (but not necessarily be limited to) information as to a Bidder's business case, its pre-Auction activities, its Auction strategy, information as to the identity of a Bidder's Authorised Agents, or the prices it is willing to Bid for spectrum in the Award Process. Confidential Information relating to individual Bidders shall also include:

⁷² Note that, in the case where a Bidder were to submit multiple Applications (where 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.

⁷³ See paragraph 3.59 for a definition of an Insider.

- a) the Bidder's actual participation in the Award Process including the Auction itself;
- b) the Bidder's Eligibility to make future Bids within the Auction; and
- c) the composition and value of all Bids made so far by the Bidder within the Auction.

3.58 Confidential Information shall also include any information concerning the outcome of various stages of the Award Process (regardless of whether such information is specific to that Bidder). The rules regarding Confidential Information set out in this section shall apply from the date of first Application or the Application Date, whichever is the earlier, until a public announcement on the outcome of the Award Process by ComReg. For the avoidance of doubt, while the rules regarding Confidential Information are relaxed to the extent necessary to achieve specified purposes including, for example, the formation of Alliances after the Main Stage⁷⁴, and Assignment Bidders may wish to negotiate with other Assignment Bidders during the Negotiation Phase of the Assignment Stage⁷⁵, confidentiality regarding the outcome of the Award Process must be maintained until ComReg makes a public announcement at the end of the Award Process.

3.59 An “**Insider**” includes an entity that has:

- received Confidential Information about a Bidder but is not a Connected Person;
- undertaken, wholly or partly, to finance or assist a member of a Bidding Group in connection with the Award Process; or
- has provided advice to the Bidder in formulating its Bid strategy and/or business case in connection with the Award Process.

3.60 An Insider can be a legal entity or a natural person. For example, an Insider could be a bank or other funder, with knowledge of a Bidder's business case, valuations or Bid ceilings, or it could be an auditor, consultant, lawyer, economic adviser, or other professional assisting in the preparation of a Bid. Each Bidder must submit a list of its Insiders to ComReg, at the time of its Application, and it shall inform ComReg thereafter of every change to its list of Insiders.

3.61 Except in accordance with the Exemption from Insider Rules as discussed below, Bidding Groups and Insiders must not convey Confidential Information

⁷⁴ See Sections 3.6.1 and 4.3.2 below for more information.

⁷⁵ See Sections 3.6.3 and 4.3.11 below for more information.

to any other person, including another Bidding Group or its Insiders, either by making public such information, or by communicating such information directly to another Bidding Group or its Insiders or indirectly through an intermediate source.

- 3.62 It is possible that, at the Application Date, a Bidder is unaware that it has a common Insider with another Bidder. If ComReg finds that two or more Bidders have a common Insider, it shall:
- notify the Bidders concerned, indicating a deadline for them to apply for exemption from the rules on common Insiders; or
 - require the relationship of one or more of the Bidders with the common Insider to terminate insofar as the Award Process is concerned.
- 3.63 If the Bidders concerned are not granted an exemption by ComReg and/or they do not alter the common Insider situation to ComReg's satisfaction, then ComReg shall exclude the Bidders from further participation in the Award Process. If the relationship comes to light later in the Award Process, i.e. after the Auction has commenced then ComReg may exclude the Bidder from further participation in the Award Process (see paragraph 3.81 below in that regard) and, this may result in partial or whole Deposit forfeiture for the affected Bidders. ComReg may also declare the result of the Award Process as not binding, wholly or partly, on it.
- 3.64 If two or more Bidders have a common Insider, and it is not possible to bring the situation to an end within the deadline set by ComReg, and ComReg does not grant an exemption, one or more of the Bidders may withdraw from participation in the Award Process, before the deadline for doing so set by ComReg, so that it is not necessary for ComReg to exclude all affected Bidders.

Exemption from Insider rules

- 3.65 ComReg may, in exceptional circumstances and at its sole discretion, grant exemption from the rules relating to common Insiders described above. ComReg may attach terms to any such exemption.
- 3.66 In considering whether to grant an exemption and any terms to attach to an exemption, ComReg will consider the arrangements put in place by a common Insider, to prevent the sharing of Confidential Information relating to one Bidder with individuals acting for or connected with another Bidder.
- 3.67 In considering whether or not to grant an exemption, ComReg will require certain information from the Bidder, including (but not necessarily limited to) the following:

- details of all individuals acting for each Bidder within the common Insider;
- an organisation chart showing the positions of each of these individuals within the common Insider;
- a copy of any appropriate policies, procedures and manuals used by the common Insider in relation to the segregation of Bidder data;
- a written undertaking from the common Insider, in a form acceptable to ComReg, to put in place sufficient safeguards which ensure the segregation of all Confidential Information relating to the Bidders that it is acting for and not to use any common personnel in relation to the different Bidders.

3.68 If a Bidder seeks an exemption, it will consent to ComReg contacting the managing director, managing partner, or person occupying an equivalent position in the common Insider, to seek the appropriate written undertaking, which shall be expressed to be for the benefit of ComReg.

Directors and employees

3.69 Circumstances may arise where Bidding Groups and their respective Insiders have common directors and/or employees. If this occurs, the Bidders concerned need to ensure that the respective persons:

- are not, directly or indirectly, involved in the preparation and/or submission of the Application for more than one Bidder or their Connected Persons, such that they are involved in the Award Process for one Bidding Group only; and
- are not in possession of, do not obtain, or have knowledge of any Confidential Information concerning more than one Bidder or their respective Connected Persons or Insiders.

3.70 A Bidder shall ensure that its Connected Persons take all reasonable measures to identify and inform the Bidder if they have any board members or employees who are Insiders in relation to another Bidder, such that the Bidder can take appropriate precautions to ensure that the rules on confidentiality and Bidder behaviour are not breached.

Disruption to the Award Process

- 3.71 All Bidders and Bidding Groups shall refrain from undertaking any action that is intended to, or is likely to, distort the outcome of the Award Process.⁷⁶
- 3.72 Save, and only to the extent necessary, for the formation of Alliances after the Main Stage or the participation of Assignment Bidders in the Negotiation Phase, all Bidders and Bidding Groups shall refrain from doing any of the following:
- disclose any Confidential Information beyond the Bidder and its Connected Persons and Insiders;
 - disclose any Confidential Information in breach of undertakings made by a Bidder pursuant to any exemption to the rules on ownership and Insiders granted by ComReg;
 - knowingly obtain Confidential Information in relation to any other Bidder;
 - communicate with other Bidders and their Connected Persons with the intention or effect of coordinating Bidding within the Auction;
 - enter into agreements with other Bidders or their Connected Persons in relation to the Award Process;
 - for the duration of the Award Process, exchange information, coordinate or enter into agreements with other Bidders and their Connected Persons regarding the Bidder's strategy for use of the Licence.
- 3.73 The above requirements shall be binding upon all Applicants until ComReg has received the Upfront Fees and has publicly announced the final outcome of the Award Process.
- 3.74 Subject to ComReg's discretion to conclude otherwise, any merger or acquisition that may occur during the Award Process shall not be considered an act that could adversely affect the Award Process, provided that such a merger or acquisition would not result in a member of one Bidding Group also being a member of another Bidding Group.
- 3.75 Notwithstanding the provisions of the paragraphs above, any member of a Bidding Group or an Insider may disclose Confidential Information to its employees, agents or other representatives, and vice versa, where this is necessary for the purposes of:

⁷⁶ For the avoidance of doubt, this prohibition applies also in respect of the formation of Alliances prior to the Assignment Stage or the participation of Winning Bidders in the Negotiation Phase.

- determining the Bidder's participation and preparing for its participation in the Award Process, including its Bid strategy;
- assisting the Bidder during the Auction in relation to its participation in the Auction; and
- dealing with commercial and regulatory matters following, and directly concerned with, the outcome of the Auction, including for example liaison with ComReg prior to the grant of Licences.

However, such disclosure shall not include disclosure to any members of another Bidding Group except with ComReg's prior written consent.

Restrictive agreements

3.76 A Bidding Group or its Insiders may neither prior to the submission of an Application, nor after the submission of an Application and not until ComReg publicly announces the outcome of the Award Process, enter into any agreement or establish any understanding with a provider of equipment or software, which directly or indirectly:

- restricts the provider's ability to supply equipment or software to another Bidder or another Bidder's Connected Persons regarding the planning, establishment or operation of a network in Ireland involving the frequencies which are subject to this Award Process; or
- restricts the prices or other terms and conditions that the provider can offer another Bidder or its Connected Persons regarding the planning, establishment or operation of a network in Ireland involving the frequencies which are subject to this Award Process.

3.77 A Bidder, its Connected Persons or Insiders may not either prior to or during the Auction enter into any agreement or establish any understanding with a third party if the agreement or understanding directs this third party not to participate in the Award Process, or restricts the ability of this third party to participate in the Award Process.

Sanctions

3.78 As part of their Applications, Applicants agree to be bound by a series of possible administrative sanctions for infringement of the Auction Rules.

3.79 Interested Parties should note that certain breaches of the Auction Rules and other behaviours that Applicants and/or Bidders could engage in may entitle other Applicants and/or Bidders to seek redress under civil law and, moreover,

may also constitute offences relating to, among other things, competition law, fraud, conspiracy and unlawful use of a computer. In respect of certain such behaviours, liability can be imposed on the individuals engaging in the behaviour as well as on the organisation. In the event that such behaviour comes to the attention of Bidders during the Auction they are obliged under the Auction Rules to notify ComReg immediately to enable appropriate action to be taken.

3.80 In the event that an Applicant or Bidder breaches any of these rules, it can also face, subject to ComReg's discretion, a number of administrative sanctions, including exclusion from the Award Process, depending on the severity of the breach. Specifically, the list of possible sanctions may include, but is not limited to:

- exclusion from the Award Process; and/or
- forfeiture of part or all of the Deposit which was paid on Application.

3.81 If a Bidder is excluded from the Award Process, then ComReg, at its discretion, may void some or all Bids made so far by the Bidder in question, in addition to preventing further Bids by that Bidder. For the avoidance of doubt, on exclusion of a Bidder, ComReg may continue with the Auction unchanged, save for the exclusion of that Bidder. In the event that ComReg considered it appropriate, all Bids and calculations made up to that point may remain valid and binding, although it reserves the right to make such alterations to the Auction as it considers appropriate at its discretion with a view to maintaining the integrity and efficacy of the Auction. In particular:

- if a Bidder were excluded during the Primary Bid Rounds, ComReg would typically expect to not re-run Primary Bid Rounds already completed, although it reserves the right to do so;
- if a Bidder were excluded after the Main Stage of the Auction had been completed and results of the Main Stage had been made known to all Bidders, ComReg would not typically expect to re-run the Main Stage, although it reserves the right to do so; and
- if a Bidder were excluded after the Main Stage of the Auction had been completed but results of the Main Stage had not been made known to all Bidders, ComReg would typically expect to re-calculate the outcome of the Main Stage excluding the Bids of the excluded Bidder.⁷⁷

⁷⁷ The issue of exclusion of a Bidder at the end of the Main Stage is addressed in Section 4.3.8

3.82 A breach by an individual Bidder, its Connected Persons or Insiders of any of the rules mentioned in this section may lead to the forfeiture of part or all of the Deposits paid by that Bidder during the Award Process.

3.83 For illustrative purposes only actions which may lead to a Bidder's exclusion from the Award Process and/or the forfeiture of a Bidder's Deposit include the following:

- submitting materially⁷⁸ false or misleading information to ComReg;
- failing to update ComReg, in a timely manner, in relation to any change to material information submitted within its Application or during the Award Process;
- a Bidder or any member of its Bidding Group colluding or attempting to collude with any other person to distort the outcome of the Award Process, or is acting in a way which is likely to distort the outcome of the Award Process;
- a Bidder or any member of its Bidding Group, or any Insider, disclosing Confidential Information to others during the period of restrictions on communications, other than in accordance with an Exemption from Insider Rules as discussed above or as required for the formation of Alliances after the Main Stage or as required for the Negotiation Phase;
- a Bidder or any member of its Bidding Group knowingly obtaining or attempting to obtain Confidential Information in relation to any other Bidder;
- any member, director or employee of a member of a Bidder's Bidding Group, who is also a director or employee of a member of another Bidding Group, taking part in the preparation of both Bidding Groups for participation in the Award Process or is receiving Confidential Information relating to both Bidding Groups or participating in the Award Process in relation to more than one Bidding Group;
- a Bidder, its Connected Persons or Insiders canvassing directly or indirectly any member of ComReg or any person Associated in any way with the Award Process; and

⁷⁸ Where reference is made in this Information Memorandum to matters being material, ComReg, acting reasonably, shall be entitled to decide whether or not a matter is material. Accordingly, where an Applicant has any doubt as to the materiality of a matter, it should be reported to ComReg.

- any other breach of the Auction Rules contained in Chapters 3 and 4 or the agreement with ComReg described in Chapter 5 that is not a trivial or inconsequential breach.

In certain circumstances, ComReg may also suspend or withdraw a Winning Bidder's Licence(s) if, after grant of the Licence(s), it emerges that the Bidder, its Connected Persons or its Insiders breached the Auction Rules set out in Chapters 3 and 4 or the agreement with ComReg described in Chapter 5.

- 3.84 In cases where breaches are caused not by the Bidder, but by its Connected Persons and Insiders, then ComReg has discretion to waive or limit the Application of sanctions set out in this section if it can be shown that the breach occurred without the Bidder's knowledge, that the Bidder has taken all reasonable steps to avoid the breach and that the breach has not caused material detriment to the Award Process.
- 3.85 Nothing in this Information Memorandum shall preclude ComReg from seeking alternative remedies for breach of the Auction Rules set out herein, including, but not limited to, a claim for damages, or the bringing of proceedings under the Competition Act 2002, the Communications Regulation Act 2002 or the Specific Regulations.

3.3.6 Application procedure

- 3.86 In order to take part in the Award Process, Applicants must submit four completed and identical Application Forms on paper including four identical copies of an Ownership Structure Document on paper and an electronic copy of same in an editable format on CD-ROM. The container(s) in which the Application Form and Ownership Structure Documents and CD-ROM are submitted must not in any way disclose the identity of the Applicant. ComReg will only accept Applications during [time and dates will be specified in the final Information Memorandum]. Applicants are required to make an appointment with ComReg to submit an Application. [Further details on making an appointment will be provided in the final Information Memorandum.]
- 3.87 All Applications will be date and time stamped. Applicants will be given a receipt acknowledging the submission of their Application. Applications will not be opened until the closing date for receipt of Applications has passed. Applications will be opened in the presence of an independent auditor.
- 3.88 An Application can be replaced at any time up to 16.00 Irish time on the last day for receipt of Applications, i.e. the Application Date. In the event that an Applicant submits more than one Application prior to 16.00 on the Application Date, only the latest Application received from that Applicant will be taken into consideration.

- 3.89 On the submission of a second or subsequent Application prior to the deadline for submission of Applications, the Applicant must return the receipt for the prior Application to ComReg. This receipt will be endorsed to indicate that the earlier Application had been superseded and will not be evaluated. However, any superseded Applications will not be returned until after the Qualification Stage of the Award Process.
- 3.90 No Applications will be opened by ComReg until after [the final Information Memorandum will specify a specific time] hours (Irish time) on the Application Date.
- 3.91 The deadline for receipt of Deposits, as set out in Section 3.3.3, will be [the final Information Memorandum will specify a specific time] hours (Irish time) on the Application Date.
- 3.92 As noted at Section 3.3.1 above, ComReg will facilitate the submission of questions regarding the Award Process up until [a time and date will be specified in the final Information Memorandum]. Following that date, and onwards through to the conclusion of the Grant & Notification 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 4.1.5 of this document (Communications with ComReg) and save for those communications and responses which are specifically requested by ComReg or its agents in accordance with the Information Memorandum.
- 3.93 Once Applications have been submitted they constitute binding offers to purchase the Lots applied for on the Initial Bid Form. However, an Applicant may withdraw its Application on or before [a date will be specified in the final Information Memorandum] without forfeiture or partial forfeiture of Deposits.
- 3.94 If a Bidder were to opt not to Bid during the Main Stage of the Auction, its Initial Bid would still be included in the set of bids considered in the determination of Winning Bidders and Base Prices.

3.4 Qualification Stage

3.4.1 Process for approval of Applications

- 3.95 Once the Application Date has passed, ComReg will evaluate all Applications received within the specified time window on or before the Application Date, evaluate which Applications are valid⁷⁹ and assess the level of Aggregate Demand Associated with valid Applications. Applicants that submitted valid

⁷⁹ Details of what constitutes a valid Application is set out in Section 3.2

Applications at the Application Stage that are approved by ComReg become Bidders.

- 3.96 Upon completion of its assessment of Applications, ComReg will:
- inform each Applicant whether or not it has been approved by ComReg to become a Bidder;
 - inform each Bidder whether an Auction is required and, if so, whether a Main Stage of the Auction is required. The start date of the Main Stage of the Auction will be at least two weeks from this notification; and
 - in the event that a Main Stage of the Auction is required, inform each Bidder of its Initial Eligibility.
- 3.97 ComReg will not inform Bidders about the identity of other Bidders, the Initial Bids made by other Bidders or the Initial Eligibility of other Bidders. ComReg will not inform Bidders about unsuccessful Applicants who fail to become Bidders.
- 3.98 Applicants are reminded that, even if they are unsuccessful in becoming Bidders, they remain bound by the Auction Rules on release of Confidential Information until the public announcement on the final outcome of the Award Process by ComReg.

3.4.2 Assessment of Applications

- 3.99 If an Applicant fails to ensure that ComReg receives sufficient Deposit to cover its Initial Bid by the deadline specified by ComReg, ComReg may, at its discretion, decide that the corresponding Application is not valid and that the Applicant will not become a Bidder and will thus not be eligible to participate in the Award Process. Alternatively, and at its sole discretion, ComReg may provide a short additional period of time for the Deposit to be topped up appropriately.
- 3.100 In the event that the Applicant does not become a Bidder by virtue of failing to make sufficient Deposit, any Deposit which has been paid to ComReg will be returned in accordance with the timeline for the return of Deposits to unsuccessful Applicants as provided in Table 9 subject to potential Extension not exceeding the length of any grace period permitted by ComReg for rectification of an insufficient Deposit.
- 3.101 If any aspect of an Application (other than the partial payment of a Deposit) is found to be incomplete, unclear or otherwise invalid, ComReg has the discretion to decide what measures to take, reflecting the nature of the ambiguity, omission or invalidity. These measures include seeking clarification

or verification of information already provided, requesting further information from the Applicant or deeming that Application invalid.

- 3.102 In the event that an Application is in any material way incomplete, inaccurate, invalid or untrue, ComReg reserves the right to exclude the Applicant from becoming a Bidder directly without providing opportunity for the Applicant to clarify or correct the information already provided. If, having determined that Applicant to be a Bidder, ComReg becomes subsequently aware that the Bidder's original Application was incomplete, inaccurate, invalid or untrue, ComReg may, at its discretion, allow the Bidder the opportunity to clarify or correct the information already provided. If the Bidder cannot provide correction or clarification to ComReg's satisfaction within a time limit specified by ComReg, that Bidder may be excluded from the Award Process with return of all, part or none of the Bidder's Deposit in accordance with the deadline as set out in Table 9: Indicative Timeline for the Award Process. In the event of any material inaccuracy or untruth in an Application being identified, ComReg reserves the right to exclude the Bidder directly without providing opportunity for the Bidder to clarify or correct the information already provided.
- 3.103 In the case where an Applicant is declared unsuccessful in its Application on account of such deficiencies in its Application, its Deposit will be returned in accordance with the timeline for the return of Deposits to unsuccessful Applicants provided in Table 9 subject to potential Extension not exceeding the length of any grace period permitted by ComReg when in seeking to address such deficiencies.
- 3.104 In the case where a Bidder's Application is considered incomplete, inaccurate, invalid or untrue retrospectively, its Deposit may or may not be returned, in whole or in part, depending on the nature and seriousness of the deficiency of its Application. In the case where at least a partial Deposit is to be returned, these funds will be returned within one week of the Bidder being informed that it is not eligible to take further part in the Award Process.
- 3.105 Applicants are subject to an on-going obligation to inform ComReg of material changes in all circumstances affecting any of the information provided in their Applications. If an Applicant becomes aware of a material error, omission or inaccuracy in its Application, the Applicant must inform ComReg as soon as reasonably possible. This obligation extends for the full duration of the rights of use the Applicant may be awarded on foot of the Award Process.

3.4.3 Progress of the Award Process

- 3.106 Based on ComReg's assessment of Aggregate Demand for each Lot Category as expressed in the Initial Bids of Bidders, the Award Process will progress in one of the following ways:

- a Main Stage and an Assignment Stage will be held, followed by a Notification & Grant Stage;
- an Assignment Stage will be held, followed by a Notification & Grant Stage; or
- Notification & Grant Stage.

3.107 A Main Stage of an Auction is required if, for one or more Lot Categories, the total number of Lots in that Lot Category specified in Bidders' Initial Bids exceeds the number of Lots available in the Lot Category, i.e. if there is at least one Lot Category for which Aggregate Demand exceeds supply.

3.108 If a Main Stage of an Auction is required:

- 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 Stage⁸⁰;
- ComReg will inform each Bidder of its Initial Eligibility – which will be the sum of the Eligibility Points Associated with all the Lots in its Initial Bid; and
- if a Bidder's Application has been approved by ComReg, the Bidder's Initial Bid will be included in the set of Bids considered when determining the Winning Bids and Associated Base Prices for the Main Stage.

3.109 If a Main Stage is not required, each Bidder will automatically become a Winning Bidder, and will be awarded the Lots it applied for with its Initial Bid.

3.110 At the end of the Main Stage, or if a Main Stage is not required, the Award Process will progress to the Assignment Stage, if required. An Assignment Stage is required whenever at least one frequency-generic B-Lot is won by a Bidder in any Region during the Main Stage.

3.111 The purpose of the Assignment Stage is to determine the specific frequencies to be assigned to Winners of (frequency-generic) B-Lots and any Additional Prices they will have to pay. The Assignment Stage will include a bidding process if there is potential for conflict between the demands of Winning Bidders for particular frequency assignments in one or more Regions.

3.112 If only A-Lots are to be awarded in accordance with the outcome of the Main Stage, an Assignment Stage is not required as the frequencies for A-Lots are fixed.

⁸⁰ This is because 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 category if the price for other Lot Categories (which they preferred at Reserve Prices) increases.

3.113 Following completion of the Assignment Stage, or if an Assignment Stage is not required, the Award Process will progress to the Notification and Grant Stage.

3.5 Main Stage

3.114 This section outlines the key features of the Main Stage. The detailed Auction Rules applying to the Main Stage are provided in Chapter 4 (Section 4.2). For completeness and transparency, ComReg has set out the details of how the Auction and Auction Rules will work, much of which involves complex Auction theory. Interested Parties are assured, however, that, in practice, the EAS that will be used by Bidders to submit Bids in the Auction will automatically determine whether a Bid is in compliance with the Auction Rules as set out in detail in Chapter 4.

3.115 The function of the Main Stage is to determine how many Lots each Bidder will be awarded in each of the available Lot Categories, and a Price for each Winning Bidder (its Base Price). Specific frequency assignments for B-Lots will be determined subsequently in the Assignment Stage.

3.116 The Main Stage will follow a Combinatorial Clock Auction (CCA) format. This will progress in discrete rounds, consisting of:

- one or more **Primary Bid Rounds**; followed by
- one further round of bidding – the **Supplementary Bids Round**.

3.117 The open, multiple round, structure of the Auction is intended to allow Bidders to learn about Aggregate Demand for Lots in the various Regions and to provide an opportunity for Bidders to revise their assessment of the value of Lots in light of this information.

3.118 All Bids in the Main Stage are for Packages of Lots. A Bid for a Package of Lots will not be subdivided by the Auctioneer, so a Bidder will only win an entire Package of Lots it has bid for, or nothing. As a result, Bidders do not face risks Associated with winning some, but not all, of the Lots within a Package of Lots for which they have bid.

3.5.1 Primary Bid Rounds

3.119 The Primary Bid Rounds follow a clock Auction format. Bidding proceeds in discrete rounds, with all Bidders invited to submit Bids within the same fixed time window (subject to the provisions for Extensions, described further below).

3.120 Before the start of each Primary Bid Round, ComReg will announce a price per Lot for each Lot Category for that round (the 'Round Prices').

3.121 In any given Primary Bid Round, each Bidder can submit at most one Primary Bid for a single Package of Lots, where the Bidder specifies the number of Lots it wishes to acquire in each Lot Category. The Bid Amount for this Package of Lots is determined automatically by the sum total of the prevailing Round Prices for the Lots included.

Round Prices

3.122 For the first Primary Bid Round, the Round Price per Lot in each Lot Category for which there was no excess demand⁸¹ on the basis of Initial Bids will be the Reserve Price per Lot in the Lot Category. The Round Price per Lot in each Lot Category for which there was excess demand on the basis of Initial Bids will be the Reserve Price per Lot in the Lot Category plus a Price Increment.

3.123 For subsequent Primary Bid Rounds, Round Prices are increased (relative to previous Round Prices) for all Lot Categories for which there was excess demand in the previous round. The magnitude of the Price Increment applicable to each Lot Category will be determined by ComReg, taking into account factors such as the level of excess demand in the previous round (for that or other Lot Categories). In the case where there was no excess demand in a Lot Category at previous Round Prices, no Price Increment shall be applied to Lots in that Lot Category.

Activity Rules

3.124 Primary Bids are subject to Activity Rules that may limit the composition of Packages of Lots a Bidder may bid for in a round, depending on the Primary Bids submitted in previous rounds by that Bidder. The Activity Rules are used to ensure that Bidding is progressive, with Bidders reducing demand as prices increase, and to prevent Bidders from only revealing their true demand for Lots late in the Auction.

3.125 Activity in the Auction is measured in Eligibility Points. Each Lot has been assigned a number of Eligibility Points (set out in Table 8). The Eligibility Associated with a Package of Lots is then the sum of Eligibility Points of all the Lots included in the Package. We refer to this as the Eligibility of the Package of Lots.

3.126 Each Bidder will start the Primary Bid Rounds with a given Eligibility level (also measured in the number of Eligibility Points) equal to the Eligibility of the Package subject to its Initial Bid. This will be referred to as the Bidder's Initial

⁸¹ Excess demand for a Lot Category is defined as the aggregate demand for Lots in the Lot Category less the number of Lots available in that Lot Category.

Eligibility. In subsequent rounds, the Eligibility of each Bidder will be equal to the smallest of:

- (i) the Bidder's Eligibility in the preceding round; and
- (ii) the Eligibility of the Package subject to its Primary Bid in the preceding round.

Therefore, a Bidder's Eligibility can never increase during the Main Stage.

- 3.127 In any Primary Bid Round, a Bidder may submit a Primary Bid for any Package of Lots with an Eligibility that does not exceed the Bidder's Eligibility at the start of the round. This means that a Bidder can always switch its demand to Packages of Lots with Eligibility no greater than its Eligibility at the start of the round. For instance, a Bidder may be able to 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 a different Region).
- 3.128 Under certain conditions, a Bidder may be able to submit a Primary Bid for a Package of Lots with an Eligibility that exceeds its Eligibility. Such Bids are termed Relaxed Primary Bids, and are allowed only in the specific circumstances where such a Bid is consistent with the preferences implied by the Bidder's previous bidding behaviour.⁸²
- 3.129 The possibility of submitting Relaxed Primary Bids provides an opportunity for Bidders to respond to the changing relative prices of Lots in different Lot Categories, consistently with the Bidder's implied preferences across various Packages of Lots.⁸³ Without Relaxed Primary Bids, Bidders would only be able to switch back and forth between Packages of Lots with exactly the same Eligibility. However, by using Relaxed Primary Bids, a Bidder may be able to switch back and forth between Packages of Lots with different Eligibility.
- 3.130 For instance, suppose that a Bidder starts by bidding for Package A, but at some point this Package becomes too expensive relative to an alternative Package B that has a smaller Eligibility and so the Bidder switches to bidding on Package B. Without the provisions for submitting Relaxed Primary Bids, the Bidder would not be able to switch back to submitting Primary Bids for Package A, even if Package A became again relatively cheap when compared with Package B. The facility to make Relaxed Primary Bids allows the Bidder to bid again for Package A if (and only if) it has not become relatively more expensive

⁸² Strictly, this consistency is only required in respect of the Bidder's Initial Bid and Bids made for Packages of Lots submitted in Primary Bid Rounds where the Bidder dropped Eligibility.

⁸³ A worked example of the Activity Rules for the Primary Bid Rounds and caps on Supplementary Bids is set out in Annex 5 of this document.

(in relation to B) than in the round in which the Bidder switched from A to B. See Annex 5 for an example of how to make a Primary Bid.

- 3.131 In some cases, to make a Bid for Package A that is consistent with the preferences implied by the Bidder's previous Primary Bids, it might be necessary to raise a Bidder's previous Bid for some Package B. Such a Bid is called a Chain Bid. Chain Bids are additional Bids on certain Packages of Lots that have already been the subject of Bids submitted by the Bidder (either the Package of Lots subject to the Bidder's Initial Bid or a Package of Lots subject to a Primary Bid in an earlier Primary Bid Round when the Bidder reduced Eligibility). Where Chain Bids are required, these Chain Bids are at the minimum level necessary to ensure consistency with the Bids made for Packages of Lots in Primary Bid Rounds where the Bidder dropped Eligibility.
- 3.132 The EAS will alert a Bidder during a Primary Bid Round where it might be possible to bid for a Package of Lots of interest via a Relaxed Primary Bid. If a Bidder were to select a Relaxed Primary Bid within the EAS during a Primary Bid Round, the EAS would provide details of any Chain Bid(s) required and the Associated Bid Amounts that would need to be submitted alongside the Relaxed Primary Bid. In practice, there would typically be only a small number of such Chain Bids needed. Therefore, making a Relaxed Primary Bid simply requires the selection of the Package of Lots by the Bidder - Bid Amounts for the Relaxed Primary Bid and any Associated Chain Bids would be non-discretionary and calculated by the EAS.

End of the Primary Bid Rounds

- 3.133 The Primary Bid Rounds end following the first Primary Bid Round in which there is no excess demand for any Lot Category at the prevailing Round Prices.⁸⁴

3.5.2 Supplementary Bids Round

- 3.134 The Supplementary Bids Round consists of a single round of bidding in which Bidders may submit a number of Bids (Supplementary Bids) for Packages of Lots across all Lot Categories, subject to certain constraints (discussed further below).
- 3.135 The Supplementary Bids Round provides an opportunity for Bidders to:
- submit Bids for Packages of Lots for which they are willing and eligible to bid, but for which they did not bid in the Primary Bid Rounds; and

⁸⁴ Subject to certain provisions for exceptional circumstances (see Section 4.1.6).

- increase their Bids for Packages of Lots that they bid for in the Primary Bid Rounds.
- 3.136 Bidders are not required to make any Bids during the Supplementary Bids Round if they do not wish to do so.
- 3.137 A Supplementary Bid may be submitted for any Package of Lots satisfying the Competition Caps.
- 3.138 Unlike in the Primary Bid Rounds, Bid Amounts are discretionary and can be freely chosen by the Bidder, though they may be subject to minimum or maximum permitted values. If a Bidder submitted a Primary Bid for a non-empty Package of Lots in the final Primary Bid Round (the Final Primary Package), the Bid Amount Associated with a Supplementary Bid for this Package of Lots is unrestricted. For all other Packages of Lots, there are restrictions (caps and, in some cases, floors) on the Bid Amounts that can be specified for Supplementary Bids that arise due to the Bids previously submitted during the Primary Bid Rounds. The restrictions on Supplementary Bid Amounts, together with the Activity Rules for the Primary Bid Rounds, aim to ensure that Bidders are not able to conceal their true demand for Lots in early Primary Bid Rounds only to reveal this demand in later rounds.⁸⁵

Floors on Supplementary Bids

- 3.139 Where a Bidder has submitted a Bid for a Package of Lots in the Primary Bid Rounds, this represents a floor on the Bid Amount that the Bidder can submit for the same Package of Lots in the Supplementary Bids Round. Where a Bidder has submitted multiple Bids for a Package of Lots during the Primary Bid Rounds (for example, submitting a Bid for the same Package of Lots in consecutive rounds), the floor for the Bid Amount on this Package of Lots in the Supplementary Bids Round will be the highest value Bid for that Package of Lots submitted by the Bidder during the Primary Bid Rounds.
- 3.140 Therefore, Supplementary Bids can only increase the highest Bid made so far for a Package of Lots (which might have been submitted as a standard Primary Bid, a Relaxed Primary Bid or a Chain Bid during the Primary Bid Rounds).
- 3.141 Where a Bidder has not submitted a Bid for a particular Package of Lots during the Primary Bid Rounds, the floor on the Bid Amount that the Bidder may bid for that Package of Lots during the Supplementary Bids Round will be equal to the sum of the Reserve Prices Associated with the Lots included in the Package.

⁸⁵ Note that the EAS will not allow Bidders to submit invalid Supplementary Bids, and will provide assistance with identifying Bids that violate the constraints. Nevertheless, it is the sole responsibility of Bidders to ensure that the Bids they submit are valid and compliant with the Auction Rules.

Caps on Supplementary Bids

3.142 Supplementary Bid Amounts may be subject to two caps:

- a Relative Cap; and
- a Final Price Cap.⁸⁶

3.143 The caps work in conjunction with the Activity Rules for the Primary Bid Rounds, and have been designed to encourage Bidders to make their Primary Bids for the Package of Lots that they prefer at the prevailing Round Prices.⁸⁷ In essence, caps for Supplementary Bids prevent a Bidder from submitting Bids that are not consistent with the preferences implied by their Primary Bids.

3.144 **Relative Caps** arise whenever the Bidder submits a Bid that affects its Eligibility. Relative Caps arise from a Bidder's Initial Bid (which sets the Bidder's Initial Eligibility) and from Primary Bids submitted in Primary Bid Rounds where the Bidder reduced Eligibility (i.e. where the Eligibility of the Package of Lots of the Primary Bid was strictly less than the Bidder's Eligibility at the start of that round).

3.145 The Relative Cap arising from a Bidder's Initial Bid will apply to the Bid Amounts of any Packages of Lots with Eligibility greater than the Bidder's Initial Eligibility. Relative Caps arising from a Primary Bid submitted in a Primary Bid Round in which the Bidder lost Eligibility will apply to the Bid Amounts for Packages of Lots with Eligibility no greater than the Bidder's Eligibility at the start of that round, but greater than the Eligibility of the Package of Lots of the corresponding Primary Bid.

3.146 The Relative Cap will limit the Bid Amount for the Package of Lots to which it applies (the Constrained Package) in relation to the highest Bid Amount that the Bidder makes for the Package of Lots subject to the Bid that originated the Relative Cap⁸⁸ (the Constraining Package) and the difference in the price of the two Packages of Lots at the time in which the Bidder chose to make that Bid for the Constraining Package⁸⁹ (the Constraining Price Differential). The

⁸⁶ Bids for any Package other than the Final Primary Package will be subject to a Final Price Cap. Supplementary Bids for Packages with an associated Eligibility greater than the Bidder's Eligibility in the final Primary Bid Round (including the Final Primary Package if the bid submitted by the Bidder in the final Primary Round was a Relaxed Primary Bid) will be subject to a Relative Cap. Therefore, a Supplementary Bid may be subject to both a Final Price Cap and a Relative Cap.

⁸⁷ The caps are based on the idea of revealed preference. Suppose that in a given round Package X is more expensive than Package Y. If a Bidder bids for Y instead of X, then it implicitly indicates that it is not willing to pay the extra cost for X, and so that any additional value it may place on X over Y cannot exceed its Additional Price.

⁸⁸ The Package of the Bidders Initial Bid or the Package of the Primary Bid that led to the Bidder losing Eligibility

⁸⁹ Reserve Prices in the case of a Relative Cap originating from the Bidder's Initial Bid, or the corresponding Round Prices in the case of a Relative Cap originating from a Primary Bid that led to a loss in Eligibility.

Relative Cap will constrain the Bid Amount on the Constrained Package so that it cannot exceed the Bid Amount on the Constraining Package by more than the Constraining Price Difference.⁹⁰

3.147 The **Final Price Cap** is similar to the Relative Cap, but arises in the last Primary Bid Round (the Final Primary Bid Round), and applies to the Bid Amount for all Packages of Lots, except that for which the Bidder made its Bid in the Final Primary Bid Round (the Final Primary Package). In an analogous manner to the Relative Cap, the Bid Amount for any Package of Lots subject to the Final Price Cap will be capped to the highest Bid Amount that the Bidder makes for the Final Package plus the difference in the price of the two Packages in the Final Primary Bid Round⁹¹.

3.148 A detailed description of the caps is provided in Section 4.2.3. Annex 6 provides examples of how the caps are calculated. Annex 7 discusses practical implications of the Final Price Cap.

3.5.3 Winner and Base Price determination

3.149 Following the Supplementary Bids Round, all valid Initial Bids, Primary Bids and Supplementary Bids received from Bidders are then considered together to determine:

- the Winning Bids in the Main Stage; and
- the Base Prices to be paid by these Winning Bidders (see Section 4.2.4).

3.150 The set of Winning Bidders will be determined by selecting the combination of Winning Bids that has the greatest total value, such that:

- in each Lot Category, no more Lots are awarded than are available in that Lot Category; and
- at most one bid is accepted from each Bidder.

3.151 This process of selecting the Winning Bids on the basis of optimisation is called Winner Determination.

3.152 ComReg will determine the Base Price payable by each Winning Bidder in respect of its Winning Bid in the Main Stage. These Base Prices will be determined using the Opportunity Cost pricing methodology set out in Chapter 4 (Section 4.2.4). In particular, each Winning Bidder will be required to pay a

⁹⁰ So if the Relative Cap on the Bid Amount for Package X originated from a Bid on Package Y when the difference in price between X and Y was D, then the Bid Amount for X cannot be greater than the Bid Amount for Y plus D.

⁹¹ Note that this difference is negative for those Packages of Lots that were cheaper than the Final Primary Package in the Final Primary Bid Round, and so the Bid Amount for these Packages of Lots must be lower than the Bid Amount for the Final Primary Package.

sufficient amount so that there is no other Bidder, or group of Bidders, that would be prepared to pay more for the Lots awarded to the Winning Bidder, based on the Bids submitted by all Bidders. In addition, each and every subset of Winning Bidders will be required to collectively pay a sufficient amount such that there is no other Bidder, or group of Bidders, that would be prepared to pay more for the Lots awarded to the subset of Winning Bidders.

- 3.153 [An Annex to the Final Information Memorandum will provide a more formal mathematical description of the process of winner and price determination that will be used.]
- 3.154 Bidders will be provided, well in advance of the Auction, with 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, and to verify the algorithm used.

3.6 Assignment Stage

- 3.155 The purpose of the Assignment Stage is to determine the specific frequencies to be assigned to each Winning Bidder awarded B-Lots following the Main Stage (or the Qualification Stage if a Main Stage was not required) across all relevant Regions. Note that the location of the frequencies Associated with A-Lots is fixed, and so the A-Lots do not need to be taken into account in an Assignment Stage.
- 3.156 Winning Bidders will be able to participate in the Assignment Stage individually or as part of an Alliance of Winning Bidders⁹². Participants in the Assignment Stage are referred to as 'Assignment Bidders'.⁹³ Note that Winning Bidders will be provided with the relevant information for forming any Alliances at the end of the Main Stage, including the identity the Winners of B-Lots and the number of Lots won by each Winning Bidder in each Lot Category.
- 3.157 At the start of the Assignment Stage, ComReg will determine the set of feasible frequency assignments for each Assignment Bidder who is to be awarded B-Lots in accordance with the outcome of the Main Stage (or Qualification Stage), such that:

⁹² As noted above, Alliances may be permitted in certain circumstances to take account of the regional structure of the Award Process and in recognition that there may be significant efficiency in two or more Winning Bidders being assigned similar frequencies across Regions, in particular where coordination at regional boards is important. Where an Alliance is formed, it will need to designate a Leading Member that will be responsible for submitting any Bids on behalf of the Alliance, and who will be primarily liable for making any deposits and payments applicable to the Alliance.

⁹³ i.e. an Assignment Bidder is either an individual Winning Bidder, or a group of Winning Bidders participating in the Assignment Stage as an Alliance.

- each Assignment Bidder that has been awarded B-Lots in the Main Stage (or Qualification Stage) will receive a single block of contiguous frequencies in each Region (within the frequency range 3 475 MHz – 3 800 MHz), corresponding in size to the B-Lots they won in that Region;
- subject to meeting the previous requirement, the extent to which Assignment Bidders are awarded the same frequencies across Regions in which they have won B-Lots is maximised; and
- subject to meeting the previous two requirements, frequency plans that maximise the extent to which unsold Lots in a Region can be combined into the fewest number of contiguous blocks are selected.⁹⁴

3.158 In the event that an Assignment Bidder (including the case where the Assignment Bidder is an Alliance) has been awarded an equal number of B-Lots in every Region, that Assignment Bidder will be awarded the same frequencies within each Region in the Assignment Stage.

3.159 If there is more than one feasible frequency assignment for at least one Assignment Bidder, the Assignment Stage will include an Assignment Round to determine the frequency assignment for each Assignment Bidder. This will require a bidding process if there is potential conflict between the frequency assignments that could be awarded to two or more Assignment Bidders. In this case, Assignment Bidders will be able to make Assignment Bids for their options (feasible frequency assignments), each option detailing the specific frequencies that Assignment Bidder would be assigned in the Regions where it has won B-Lots.

3.160 The outcome of the Assignment Round, if required, will form the Provisional Frequency Plan, setting out frequency assignments within the frequency range 3 475 MHz – 3 800 MHz for each Assignment Bidder in all nine Regions. If an Assignment Round is not required, the Provisional Frequency Plan will be the unique frequency assignments for each Assignment Bidder.

3.161 Following the determination of this Provisional Frequency Plan, there will be a Negotiation Phase during which Assignment Bidders will be given a period of ten clear Working Days to negotiate and submit a request to ComReg for a reassignment of the frequencies they were assigned in the Provisional Frequency Plan in the frequency range 3 475 MHz – 3 800 MHz for one or more Regions. Alliances should inform ComReg of the specific frequencies to be assigned to each Alliance member by the end of this period.

⁹⁴ This requirement means that in Regions where there is only one Assignment Bidder that has been awarded B-Lots, the Assignment Bidder will either be positioned at the top or the bottom of the frequency range 3 475 MHz – 3 800 MHz.

3.6.1 Participating as an Alliance in the Assignment Round

- 3.162 As noted above, subsets of Winning Bidders may choose to participate jointly in the Assignment Round by forming an Alliance in advance in accordance with the conditions set out in Section 4.3.2. This will allow a subset of Winning Bidders to align their frequency assignments (the frequency range 3 475 – 3 800 MHz) in the event that it would be beneficial for the efficient use of the spectrum.
- 3.163 In this case, the frequency plans will be generated as if the Lots won by each Winner Bidder included in the Alliance were won by a single entity in the Main Stage, and the Alliance of Bidders will submit Assignment Stage Bids jointly.
- 3.164 Winning Bidders will be given a period of ten clear Working Days between the end of the Main Stage and the start of the Assignment Stage to establish any such Alliances and notify ComReg⁹⁵. For the avoidance of doubt, note that Alliances in the Assignment Stage are not the same as consortia formed prior to the Auction, see Section 3.3.4
- 3.165 The formation of such an Alliance for the Assignment Stage is subject to a number of restrictions, as set out in Chapter 4.
- 3.166 No Winning Bidder can be part of more than one Alliance in the Assignment Stage.

3.6.2 Assignment Round

- 3.167 Following the period allowed for the formation of Alliances, ComReg will establish the set of frequency assignments that could be assigned to each Assignment Bidder.⁹⁶ Each frequency assignment for an Assignment Bidder sets out a specific set of frequencies that would be assigned to that Assignment Bidder in each of the nine Regions, in accordance with the Lots won by the Assignment Bidder in the Main Stage.
- 3.168 If there is more than one feasible frequency assignment identified for any given Assignment Bidder, it will be necessary to determine which options will form the Provisional Frequency Plan. In this case, an Assignment Round will be run to determine a frequency assignment for each Assignment Bidder that is compatible with the frequency assignments for all other Assignment Bidders.
- 3.169 The Assignment Round consists of a single round in which:

⁹⁵ See Annex 4 for the Alliance Notification Form to be submitted to ComReg

⁹⁶ Each frequency assignment is a unique set of specific frequencies across all Regions in which the Assignment Bidder has won B-Lots.

- Assignment Bidders whose preferred frequency assignment might conflict with the preferred assignment of at least one other Assignment Bidder⁹⁷ are able to submit Bids ('Assignment Bids') to express their preferences over their possible assignments where potential conflicts are resolved, and frequency assignments determined, on the basis of these Assignment Bids. Assignment Bidders may be required to pay an additional amount on top of their Base Price ('Additional Price') for their specific frequency assignment; and
- Assignment Bidders whose feasible frequency assignments do not conflict with the feasible frequency assignments for any other Assignment Bidder⁹⁸ in any Region will be able to choose their preferred option from amongst the set of frequency assignments presented to them.

Winner and Additional Price determination

- 3.170 The Winning Combination of Assignment Bids in the Assignment Stage will be the combination of valid Assignment Bids submitted during the Assignment Round that has the highest total value of Assignment Bid Amounts, and is compatible with one of the feasible frequency plans.
- 3.171 Depending on the outcome of the Assignment Round and the Assignment Bids submitted, Assignment Bidders may be required to pay an additional amount on top of their Base Price for the specific frequencies to be assigned to them. ComReg will determine the amounts (Additional Prices) payable by the relevant Assignment Bidders according to an Opportunity Cost pricing rule. The key features of this rule are similar to those set out in relation to determination of the Base Prices to be paid by Winning Bidders in the Main Stage.
- 3.172 As per section 4.3.8, at the end of an Assignment Round, and prior to the notification to Assignment Bidders of the outcome of the Assignment Round, ComReg may give notice to one or more Assignment Bidders that they need to increase their Deposit to ensure that the difference between the Bidder's Deposit and its Base Price must be at least the amount of its highest Assignment Bid. (See Section 4.3.8)

⁹⁷ This will be the case for any Assignment Bidder awarded B-Lots in at least one Region in which another Assignment Bidder has been awarded B-Lots.

⁹⁸ This will be the case if there is no other Winner of B-Lots in any Region in which that Bidder won B-Lots in the Main Stage. The Bidder may, however, still have alternative feasible frequency options that meet the relevant requirements, and it will have to choose between them.

3.6.3 Negotiation Phase

3.173 Following the determination of a Provisional Frequency Plan, Winning Bidders will be provided with a period of ten clear Working Days in which:

- Assignment Bidders may communicate with each other to negotiate a re-organisation of the frequency assignments in the frequency range 3 475 – 3 800 MHz in each Region; and
- Winning Bidders that chose to participate in the Assignment Round as part of an Alliance should inform ComReg of the specific frequencies to be assigned to each Alliance member.

3.174 Any such re-organisation is 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 (or Qualification Stage). The rules relating to the negotiation of alternative frequency assignments is further set out in Chapter 4

3.175 To provide a starting point for the Negotiation Phase, ComReg will inform Winning Bidders of the Provisional Frequency Plan i.e. the frequencies to be assigned to each Assignment Bidder and any Additional Prices to be paid.

3.176 Following receipt of notification of frequency assignments from Alliance members and any requests for alternative frequency assignments, ComReg will determine the Final Frequency Plan, setting out the specific frequencies to be assigned to all Winning Bidders in each Region.

3.177 Note that ComReg reserves the right to refuse any request for a reassignment of frequencies between two or more Winning Bidders. In this case the frequencies involved will be assigned according to the Provisional Frequency Plan.

Post-Auction frequency reassignment

3.178 ComReg notes that some Winning Bidders may have a preference for an alternative frequency plan that was not possible to establish under the rules of the Assignment Stage. In particular, this may involve the location of any unassigned frequencies.

3.179 In this case, one or more Licence holders may submit an Application to ComReg following the completion of the Award Process to request a reassignment of the frequencies assigned in some or all Regions. For example, this could involve:

- a swap of frequencies between two Licence holders; and/or

- a swap of frequencies assigned to a Licence holder for currently unassigned spectrum.
- 3.180 Frequency reassignment requests are strictly subject to the approval of ComReg.
- 3.181 In accordance with standard procedure for frequency reassignment, ComReg will consider each request on a case-by-case basis and in light of its statutory functions, objectives and duties, including public consultation on the matter as appropriate.
- 3.182 ComReg reserves the right to refuse any request to reassign frequencies, and to assign unused frequencies in any other way, if it considers appropriate in order to meet its statutory functions, objectives and duties.

3.7 Notification & Grant Stage

- 3.183 Once ComReg has determined the Base Prices for Winning Bids and Additional Prices to be paid for specific frequency assignments have been determined in the Assignment Stage, ComReg will notify each Bidder in writing whether or not it has been successful in acquiring Lots in the Award Process.
- 3.184 In the case of Bidders who do not win any Lots in the Award Process, ComReg will return the relevant amount of its Deposit to it (less any Deposit forfeiture imposed in accordance with the Auction Rules) within approximately two weeks of this notification.
- 3.185 In the case of Winning Bids, ComReg will notify the Winning Bidders of their entitlement to apply for a 3.6 GHz Band Preparatory Licence and a 3.6 GHz Band Liberalised Use Licence, subject to compliance with certain upfront obligations, as set out in paragraphs 3.190 and 3.191 below, including their obligation to pay the Upfront Fee (see below).
- 3.186 The Upfront Fee to be paid by each Winning Bidder prior to a receipt of a 3.6 GHz Band Preparatory or 3.6 GHz Band Liberalised Use Licence will be the sum of its Base Price plus its Additional Price. In the case of an Alliance, the Additional Price for the Alliance will be payable by the Leading Member designated by the Alliance and added to the Leading Member's Base Price to determine its Upfront Fee. Members of an Alliance should then make their own internal arrangements for any apportionment of the Alliance's Additional Price amongst the members of the Alliance. Members of an Alliance shall be jointly and severally liable for the Additional Price for the Alliance in the event of non-payment of the Additional Price by the Leading Member.
- 3.187 The notification to the Winning Bidder will specify the date for the payment of the Upfront Fee (the "Payment Deadline"), and this date will be approximately two weeks after the release of the results of the Assignment Stage to Bidders.

The payment of each Winning Bidder's Upfront Fee is a pre-requisite condition to that Winning Bidder being entitled to apply for a 3.6 GHz Band Preparatory Licence and a 3.6 GHz Band Liberalised Use Licence. For an Alliance, the members must have between them paid the relevant Additional Price for the Alliance in order for any member to be entitled to apply for a 3.6 GHz Band Preparatory Licence and a 3.6 GHz Band Liberalised Use Licence.

3.188 If the amount of a Winning Bidder's Upfront Fee is more than the amount of its Deposit, then the net amount of funds due must be received by ComReg in the relevant bank account as cleared funds no later than [a time will be specified in the final Information Memorandum] hours (Irish time) on the date of the **Payment Deadline**. If the amount of a Winning Bidder's Upfront Fee, less any applicable Rebates, is less than the amount of its Deposit, the relevant amount of its Deposit will be returned to this Winning Bidder by ComReg by the same date as the Payment Deadline (less any Deposit forfeiture imposed in accordance with the Auction Rules).

3.189 In respect of a 3.6 GHz Band Preparatory Licence, the notification will state that, upon grant of such a Licence, the Winning Bidder is obliged to comply with the terms and conditions Associated with the 3.6 GHz Band Preparatory Licence (as detailed in draft form in Annex 2 and as described in Section 2.5 of this Information Memorandum) and will among other things specify:

- the Lots to be included in the 3.6 GHz Band Preparatory Licence and their expiry dates in accordance with the Lots won by the Bidder in the Award Process; and
- the due date by which the Winning Bidder shall pay the Licence fee Associated with the 3.6 GHz Band Preparatory Licence.

3.190 Where the Winning Bidder has submitted the Upfront Fee and the Licence fee Associated with the 3.6 GHz Band Preparatory Licence, ComReg will issue a 3.6 GHz Band Preparatory Licence to the Winning Bidder.

3.191 In respect of a 3.6 GHz Band Liberalised Use Licence, the notification⁹⁹ will state that, upon grant of such a Licence, the Winning Bidder is obliged to comply with the terms and conditions Associated with the Liberalised Use Licence (as detailed in draft form in Annex 2 and as described in Section 2.4 of this Information Memorandum) and will among other things:

- specify the Lots to be included in the Licence in accordance with the Lots awarded to the Winning Bidder in the Award Process;
- specify the expected commencement date of each Lot in the 3.6 GHz Band Preparatory Licence notwithstanding the possibility for the

⁹⁹ This notification will be sent to all Winning Bidders.

commencement date of a 3.6 GHz Band Liberalised Use Licence to be delayed beyond the expected start date;

- specify the expiry date of each Lot in the 3.6 GHz Band Liberalised Use Licence and the expiry date of the 3.6 GHz Band Liberalised Use Licence;
- note that the Winning Bidder is required to pay the Spectrum Usage Fee Associated with the 3.6 GHz Band Liberalised Use Licence in advance of the issue of its 3.6 GHz Band Liberalised Use Licence;
- specify the expected date on which ComReg will issue an invoice to the Winning Bidder in respect of the Spectrum Usage Fee to be paid in connection with the grant of its 3.6 GHz Band Liberalised Use Licence, noting the possibility for the commencement date of a 3.6 GHz Band Liberalised Use licence to be delayed beyond the expected start date;
- specify the information required by ComReg to populate Part 2 and Part 3 of the 3.6 GHz Band Liberalised Use Licence and state that the Winning Bidder is obliged to provide such information to ComReg in advance of the commencement date of its 3.6 GHz Band Liberalised Use Licence; and
- note that the Winning Bidder is required to comply with Transition Rules as set out in Section 3.8 in order to be eligible for a 3.6 GHz Band Liberalised Use Licence.

3.192 Where the Winning Bidder has submitted the Upfront Fee by the Payment Deadline and complies with the conditions set out in paragraph 3.191 above, ComReg will issue a 3.6 GHz Band Liberalised Use Licence to the Winning Bidder.

3.193 ComReg may at its discretion extend the time limit in order for Bidders to fulfil these obligations. If a Winning Bidder does not comply with the conditions relating to an Application for a 3.6 GHz Band Preparatory Licence or the 3.6 GHz Band Liberalised Use Licence as set out in this Section, including relating to the payment of the Upfront Fee, it may forfeit its Deposit and entitlements to a 3.6 GHz Band Liberalised Use Licence and a 3.6 GHz Band Preparatory Licence, without prejudice to ComReg's entitlement to recover the full amount due in respect of all Lots won as a simple contract debt.

3.194 Once a 3.6 GHz Band Liberalised Use Licence has been issued to a Winning Bidder, ComReg will publish on its website the text of the 3.6 GHz Band Liberalised Use Licence and subsequent amendments to same.

3.8 Transition Rules

3.195 As explained in Chapter 7 of ComReg Document 15/70, Existing Licensees may be required to make adjustments to their existing networks ('Transition Activities') in order to comply with the outcome of the Award Process if they wish to continue to provide services following the cessation of the FWALA licensing scheme on 31 July 2017. In line with ComReg's draft decision as set out in ComReg Document 15/140,¹⁰⁰ the following parties are obliged to abide by the Transition Rules as set out in this Information Memorandum:

- all Bidders; and
- all Existing Licensees applying for a TUL.

3.196 If an Existing Licensee is not a Bidder and, further, chooses not to apply for a TUL, then this Existing Licensee is not obliged to comply with the Transition Rules. For the avoidance of doubt, such an Existing Licensee would remain entitled to make full use of its existing 3.6 GHz rights of use until the expiry date of its licence(s) noting that all existing 3.6 GHz rights of use expire on or before the 31 July 2017.

3.197 Upon completion of the Assignment Stage, ComReg will issue a notification to Winning Bidders and Existing Licensees informing them of the specific frequency assignments resulting from the Assignment Stage. In addition, this notification will require Winning Bidders and Existing Licensees who have agreed to abide by the Transition Rules to formulate Transition Plan Proposals, and to submit them to ComReg. Each such party may formulate its own individual Transition Plan Proposal or any number of such parties may collaborate to formulate a common Transition Plan Proposal.

3.198 The Transition Plan Proposals, and the Transition Plan as subsequently adopted by ComReg, should identify and consider all the Transition Activities¹⁰¹ required by the Existing Licensees.

3.199 The deadline for the submission of Transition Plan Proposals will be set at 4 weeks from the above notification, although ComReg reserves the right to specify a different date. Transition Plan Proposals are to be submitted to ComReg for its consideration (including the consideration of any of its agents or servants) and the consideration of other Winning Bidders and Existing Licensees in these bands.

¹⁰⁰ See paragraph 7.80 of ComReg Document 15/140, and paragraph 3.10.11 of the draft decision in Chapter 8 of ComReg Document 15/140.

¹⁰¹ The Transition Activities refer to the activities required by the Existing Licensee to make adjustments to their existing networks in order to comply with the outcome of the award process and align their use of spectrum with the rights of use that they obtain, if any.

3.200 A Transition Plan Proposal should address, to ComReg's satisfaction, at least the following matters:

- the identification of all Transition Activities to be undertaken by Existing Licensees and the order of each activity in the 3.6 GHz Band;
- the setting of milestone dates for each Transition Activity identified;
- where the Transition Activities of one Existing Licensee is dependent upon the Transition Activities of another, this will be clearly identified in the Transition Plan Proposal such that any consequential delays by one party due to the delay of another party can be clearly attributable to the responsible party;
- a robust and transparent mechanism to allow ComReg (including any of its agents or servants), Existing Licensees, Winning Bidders and other Interested Parties to monitor compliance with the Transition Activity milestones and deliverable dates (subject to non-disclosure of Confidential Information);
- attribution and acceptance of liability for liquidated damages that may be payable by the Existing Licensee(s), TPL Licensee and/or TUL Licensee in the event of non-compliance with the Transition Activity milestones identified in the Transition Plan, where such Existing Licensee(s)', TPL Licensee's or TUL Licensee's actions or omissions caused the non-compliance with the relevant milestone date.

3.201 Following receipt of Transition Plan Proposals ComReg will progress the matter in consultation with Winning Bidders and Existing Licensees with a view to finalising a Transition Plan. This may take the form of written consultation and/or multilateral and/or bilateral meetings with same.

3.202 In the event that any parties bound by the Transition Rules are unable or unwilling to submit a Transition Plan Proposal by the stipulated time, ComReg will formulate and implement a Transition Plan, following appropriate consultation or discussion with Winning Bidders and Existing Licensees. In any case, ComReg will 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.

3.203 ComReg reserves the right to make a final and binding decision on any and all matters pertaining to Transition Rules following appropriate consultation. In line with ComReg Document 15/140, all Winning Bidders and all Existing Licensees applying for a TUL are required to abide by the Transition Rules including the Transition Plan.

3.204 Once the Transition Plan is finalised, it will be published on ComReg's website, having regard to the provisions of ComReg's Guidelines on the Treatment of Confidential Information as set out in ComReg Document 05/24. ComReg reserves and retains the discretion to vary the Transition Plan as appropriate.

3.8.1 Liquidated Damages

3.205 An essential part of ensuring that the Winning Bidders and Existing Licensees who abide by the Transition Rules are appropriately incentivised to complete their respective Transition Activities in an effective and timely manner, is the identification of, and agreement to pay, liquidated damages to ComReg where such Existing Licensee or Winning Bidder fails to discharge its obligations in accordance with the milestones and deadlines set out in the Transition Plan.

3.206 The total amount of liquidated damages payable by these Existing Licensees or Winning Bidders will be based on the refunds or adjustments of Licence Fees that ComReg pre-estimates that it may have to make to Winning Bidders in the event that ComReg may be unable to make Lots available for use due to the delays in the completion of Transitional Activities in the Transition Plan.

3.207 Section 2.4.7 of this document contains details of the nature of refunds or adjustments payable by ComReg and shall be used by ComReg in pre-estimating the payable liquidated damages pursuant to the Transition Plan. These liquidated damages are payable immediately on request and are non-refundable.

Chapter 4

4 The Auction Rules

4.1 General

4.1.1 The Electronic Auction System

- 4.1 Both the Main Stage (including the Primary Bid Rounds and the Supplementary Bids Round) and the Assignment Round will be run using an Electronic Auction System (EAS). Bidders will use the EAS to submit Bids and any decisions on preferred frequency assignments, where applicable.
- 4.2 For completeness and transparency, ComReg has set out the details of how the Auction and Auction Rules will work, much of which involves complex economic Auction theory. As noted in Chapter 3, however, Interested Parties are assured that, in practice, the EAS will automatically work out the complex rules applicable to the Auction for Bidders.
- 4.3 Bidders will be able to access the EAS over the internet using a web-browser. There will be no onerous technical requirements for accessing the system.
- 4.4 Bidders are recommended to have back-up bidding facilities in place, including alternative computers and internet connections, to ensure that they can access the EAS reliably. ComReg is not able to provide specific advice on this matter, as this depends on the systems in use by any particular Bidder. Bidders should perform their own reviews of their bidding facilities prior to the start of the Auction.
- 4.5 Bidders may not submit Bids through any means other than the EAS, other than in exceptional circumstances and only then with the explicit permission of ComReg. In particular, 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. Procedures for the submission of Bids other than through the EAS are described in paragraph 4.11. It is in Bidders' own interests to submit Bids using the EAS, as the EAS provides facilities for checking the compatibility of Bids with the Auction Rules prior to submitting them.
- 4.6 Bidders have a limited number of Extension rights, which will automatically grant them additional time for submitting their Bids in the event that they do not make a submission before the scheduled end of a round as notified by ComReg. The Extension rights provide Bidders with an opportunity to switch to back-up bidding facilities and to submit their Bids through the EAS in the

event that they experience technical difficulties and are unable to make their submission within the scheduled round time.

- 4.7 In the event that a Bidder perceives an error in the functioning of the EAS it must contact ComReg immediately. ComReg may, at its discretion, suspend or continue the Auction while investigating any such concerns.

4.1.2 Bid submission

- 4.8 All Bids must be submitted through the EAS, unless exceptional circumstances prevent Bidders from doing so.
- 4.9 The process for submitting Bids in each of the Primary Bid Rounds, Supplementary Bids Round and the Assignment Round is described in the relevant sections below. In each of these cases, submission involves a two-step process in which Bidders must first **check** their Bids and then **confirm** them:
- in the first step, Bidders enter their Bid(s) on the relevant electronic Bid form provided by the EAS for that round, and submit that form back to the EAS for checking; and
 - in the second step, which is only available if the submitted Bid(s) checked are valid according to the Auction Rules, Bidders can verify the Bid(s) checked by the EAS and confirm them (or alternatively revert to the Bid form if they wish to make any amendments).

A submission is only valid if it is submitted in accordance with the process outlined above and received by the EAS before the deadline for Bid(s) submission (taking into account of any Extensions, as explained below).

- 4.10 Bidders should be aware that the transmission of Bid data from a client computer to the EAS will take a short, but material, time. Submissions can only be accepted if they are received by the EAS before the relevant deadline, regardless of the time at which they are sent from the Bidder's computer. Therefore, data transmission delays could lead to a Bidder missing the deadline for making a submission (which might trigger an Extension, or prevent the Bidder from making a submission in the round). Bidders are responsible for making their own assessments of such risks and ensuring that they have access to the necessary infrastructure and equipment to allow reliable submission.
- 4.11 Once a confirmation has been received by the EAS it is irrevocable. Upon receipt of a Valid Bid, the EAS will provide an acknowledgement page with details of the submission. It is the responsibility of the Bidder to check this acknowledgement page, and to alert ComReg if technical problems are suspected to have prevented successful submission. If a Bidder is unable to

submit its Bid(s) using the EAS, then it should immediately notify ComReg and seek permission to make a submission using an alternative channel. Permission will be granted at the discretion of ComReg. Such permission will usually not be given if ComReg has been notified of difficulties in making a submission after the deadline for submissions has expired. Where notification of such difficulties is received before the deadline for submissions, ComReg may 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. 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.

4.1.3 Competition Caps

4.12 All Bids for the Main Stage of the Auction are subject to a Competition Cap of 150 MHz in each Region.

4.1.4 Communication with ComReg

4.13 The EAS will provide a one-way messaging system, which will be used as the primary method for ComReg to communicate with Bidders during the Auction.

4.14 Bidders may contact ComReg by telephone, using designated telephone numbers, only to report technical problems. In certain exceptional circumstances, Bidders may be given permission to submit Bid(s) through alternative means, such as fax, email or telephone. Where ComReg has expressly granted permission to a Bidder, such a Bidder may submit Bids only by the means agreed with ComReg.

4.15 Contact details for ComReg and guidelines on the submission of Bids in exceptional circumstances will be made available to Bidders in advance of the Auction. ComReg may take steps to verify the authenticity of any communications from a Bidder using one-time passwords provided to the Bidder prior to the start of, or during, the Auction, or by other means as considered necessary by ComReg.

4.1.5 Exceptional Circumstances

4.16 If exceptional circumstances arise during any stage of the Auction, ComReg has the discretion to:

- postpone the scheduled start of a round;
- postpone the end of a round in progress or the release of results of a round;

- postpone the scheduling of further rounds;
- cancel a round that has been scheduled, but not yet started;
- cancel a round that is either underway or which has finished but for which round results have not yet been released, and re-schedule that round;
- void one or more rounds and the Bids made therein, and resume the Auction from an earlier round;
- void all Bids received in the Auction, and either suspend the Auction or restart the Auction;
- end the Primary Bid Rounds early (i.e. while there is still excess demand in one or more Lot categories), and proceed directly to the Supplementary Bids Round; and/or
- take any other 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 ComReg's functions, objectives and duties.

4.17 ComReg will determine whether a situation of exceptional circumstances has arisen. Exceptional circumstances could include, for example, widespread technical failure or material concern about collusion amongst some Bidders.

4.18 In the event that a Bidder is excluded from the Auction and some, or all, of its Bids so far deemed invalid, ComReg would typically expect not to use any of its exceptional powers to modify any Auction outcome or intermediate state of the Auction as it affects other Bidders, as described earlier. However, ComReg does not fetter its discretion in this regard.

4.1.6 Bidder Behaviour

4.19 Bidders are reminded that, with the exception of the specific rules for bidding in Alliances which are relevant only in the Assignment Stage, the Auction Rules forbid:

- coordinating bidding decisions with other Bidders; and
- sharing information with other Bidders that could affect their bidding decisions.

4.20 Such behaviours may also be illegal under EU and Irish competition law. These prohibitions apply throughout the Award Process. In the Main Stage, the prohibitions apply to each Bidder; in the Assignment Stage, the prohibitions apply to each Assignment Bidder. See Section 3.3.5 of this Information Memorandum for the Auction Rules relating to Bidder behaviour.

4.2 The Main Stage

4.21 This section provides a detailed description of the rules applying to the Main Stage of the Auction.¹⁰²

4.2.1 Information made available to Bidders before the start of the Main Stage

4.22 Before the start of the Main Stage, ComReg will announce to all Bidders:

- the Round Price for each Lot Category in the first Primary Bid Round;
- Aggregate Demand for each Lot Category, based on Initial Bids; and
- the provisional Round Schedule for the first few days of the Auction (that is, the scheduled start time and end time of rounds, assuming no Extension rights are used).

4.23 ComReg will also inform each Bidder of its own Initial Eligibility (as determined by its Initial Bid).

4.2.2 Primary Bid Rounds

Schedule for Primary Bid Rounds

4.24 Primary Bid Rounds are scheduled at ComReg's discretion.

4.25 There is no minimum or maximum length for a Primary Bid Round. However, ComReg does not anticipate scheduling Primary Bid Rounds with a round duration of less than 30 minutes or greater than two hours. Subject to the constraints of the notification requirements below, the time between Primary Bid Rounds is discretionary and a matter for ComReg to determine round-by-round. Nevertheless, each Working Day prior to an Auction Day, ComReg would typically expect to issue a notice of its indicative plans with regard to the number of rounds of the Auction to be run the following Auction Day. However, this will be issued as guidance only and will not be binding. Due to the provisions for Extensions of rounds and the potential for exceptional circumstances to arise, it is not possible to guarantee the start and end times of each round in advance. The actual start time of a round will be notified after the completion of the preceding round, in line with the notice requirements.

¹⁰² Interested Parties should note that ComReg reserves the right to make amendments to the Auction Rules after the finalisation of this Information Memorandum to correct any errors therein, or to further clarify matters, whether identified by ComReg, its consultants or Interested Parties, where such amendments are necessary or appropriate to ensure that the Auction Rules and the EAS operate in the manner intended by ComReg, as set out in the Information Memorandum. ComReg will promptly bring any such amendments to the attention of interested parties. Interested Parties are reminded that they are obliged to bring any errors to ComReg's attention promptly.

- 4.26 All Primary Bid Rounds will be scheduled to run between 10.00 and 16.00 Irish time on Working Days¹⁰³, assuming that no Extension rights are used. For the avoidance of doubt, no specific times for scheduled breaks (for example lunch) will be set aside.
- 4.27 There will be a minimum of 30 minutes between Primary Bid Rounds.
- 4.28 Bidders will be notified of the Round Schedule for a Primary Bid Round via the EAS at least 15 minutes in advance of the scheduled start time of the round.
- 4.29 Upon announcement of the start time of the next Primary Bid Round, each Bidder will also be informed about:
- the scheduled duration and end time for the next Primary Bid Round;
 - the Round Price per Lot for each Lot Category in the round;
 - the Bidder's Eligibility to bid in the round; and
 - the number of Extension rights the Bidder has remaining.
- 4.30 If no Extension rights are used, a Primary Bid Round will end at the scheduled round end time. Under normal circumstances, Primary Bid Rounds will not end before their scheduled end time, even if all Bidders have already made their submissions for the round.

Round Prices

- 4.31 For each Primary Bid Round, ComReg will specify a Round Price per Lot for each Lot Category.
- 4.32 For the first Primary Bid Round, the Round Price per Lot in each Lot Category for which there was no excess demand on the basis of Initial Bids will be the Reserve Price per Lot in the Lot Category. The Round Price per Lot in each Lot Category for which there was excess demand on the basis of Initial Bids will be the Reserve Price per Lot in the Lot Category plus a Price Increment.
- 4.33 In subsequent Primary Bid Rounds, for each Lot Category, the Round Price will be increased if in the previous round there was excess demand in that Lot Category.
- 4.34 Excess demand in a Lot Category exists where the total number of Lots in that Category across all Valid Bids submitted in the round is greater than the number of Lots available in that Lot Category.

¹⁰³ Public holidays and bank holidays will be treated as non-working days

- 4.35 For Lot Categories where there is no excess demand in a given round, the Round Price per Lot for that Lot Category will remain unchanged for the following round.
- 4.36 For the avoidance of doubt, it is not possible for the Round Price for any Lot Category to fall during the Primary Bid Rounds.
- 4.37 For each Lot Category, the amount by which the Round Price is increased in the case of excess demand is set at ComReg's discretion, and may vary across Lot Categories and across Primary Bid Rounds.
- 4.38 In any case, the Round Price for any Lot Category will not increase by more than 20% from one Primary Bid Round to the next.
- 4.39 Round Prices will be in units of EUR 100.

Primary Bid submission

- 4.40 During a Primary Bid Round, a Bidder may submit a Primary Bid for at most one Package of Lots. 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. A Package of Lots may include any combination of Lots, subject to the constraints arising from the Application of Competition Caps (described in Section 4.1.3) and the Activity Rules (described subsequently in this Section 4.2.2).
- 4.41 The price offered for the Package of Lots subject to a Primary Bid (the Bid Amount) is determined as follows:
- for each Lot Category, the number of Lots in that Category included in the Package of Lots subject to the Primary Bid is multiplied by the relevant Round Price for that Lot Category; and
 - these values are added across all Lot Categories.
- 4.42 It is not possible for a Bidder to amend the Bid Amount for a Primary Bid.
- 4.43 Bid submission follows the two-step check and confirm process described in Section 4.1.2.
- 4.44 A Primary Bid is a binding offer to buy the selected Package of Lots for a price not exceeding the Bid Amount. Each Primary Bid will only be considered in its entirety and will not be sub-divided.
- 4.45 During the Primary Bid Rounds, Bidders have the option to submit a Zero Bid, i.e. to bid for zero Lots in all of the available Lot Categories with a Bid Amount of zero. If a Bidder submits a Zero Bid in a Primary Bid Round, it will not be possible for the Bidder to submit any further Bids during subsequent Primary Bid Rounds. A Bidder who submits a Zero Bid during the Primary Bid Rounds

may still submit Supplementary Bids in the Supplementary Bids Round subject to the caps detailed in Section 4.2.3

- 4.46 In some cases, as explained below, a Bidder may be able to submit a so-called Relaxed Primary Bid. The EAS will assist Bidders in determining whether it is possible to make a Relaxed Primary Bid on particular Packages of interest.
- 4.47 The submission of a Relaxed Primary Bid may require that the Bidder also submits so-called Chain Bids at the same time. However, Bidders who wish to submit a Relaxed Primary Bid only need to select the Package of Lots subject to the Relaxed Primary Bid in their bid form, and any necessary Chain Bids will be identified and notified to the Bidder by the EAS. Provided that the Bidder can make these Bids in accordance with the Auction Rules, it will then be given the opportunity to submit the Relaxed Primary Bid and any necessary Chain Bids simultaneously.
- 4.48 If a Bidder fails to submit a Bid before the scheduled end of a Primary Bid Round or subsequent Extension period (if the Bidder had Extensions remaining), the EAS will automatically enter a Zero Bid on the Bidder's behalf.

Activity and Bidder Eligibility

- 4.49 Each Lot available in the Auction is assigned a number of Eligibility Points, as set out in Table 8. The differences in the Eligibility Points assigned to Lots in different Lot Categories approximate relative differences in their Reserve Prices. However, Lot Categories in different Regions have been grouped into a limited number of tiers for the purpose of setting Eligibility Points, with a view to facilitate switching across Regions and simplifying the bidding process.
- 4.50 The Eligibility of a Package of Lots is the sum of the Eligibility Points of the Lots included in the Package of Lots.
- 4.51 A Bidder starts each Primary Bid Round with a number of Eligibility Points; this is the Bidder's Eligibility for the round.
- 4.52 The Activity Associated with a Bid is equal to the Eligibility of the Package of Lots subject to the Bid.
- 4.53 In any Primary Bid Round, each Bidder may submit a Primary Bid with Activity less than or equal to its Eligibility at the start of the round, provided that the Bid satisfies the Competition Caps.
- 4.54 Under certain conditions, a Bidder may submit a Primary Bid with Activity strictly greater than its Eligibility at the start of the round. Such a bid is called a Relaxed Primary Bid. Such bids are permitted where they express preferences that are consistent with earlier Bids made by the Bidder. The

specific requirements for submission of a Relaxed Primary Bid are detailed below.

- 4.55 The Eligibility of a Bidder for the first Primary Bid Round (its Initial Eligibility) is equal to the Activity of its Initial Bid. For the avoidance of doubt, a Bidder may submit bids (either as Primary or Supplementary Bids) for Packages with Eligibility exceeding its Initial Eligibility providing this is compatible with the Activity Rules. In the case of a Primary Bid, this would need to be by means of a Relaxed Primary Bid (discussed below).
- 4.56 For each subsequent Primary Bid Round, a Bidder's Eligibility is set to the lesser of:
- the Bidder's Eligibility at the start of the preceding Primary Bid Round; and
 - the Bidder's Activity in the preceding Primary Bid Round.
- 4.57 This rule implies that a Bidder's Eligibility can never increase. Specifically, if a Bidder submits a Relaxed Primary Bid (which has an Activity that strictly exceeds its Eligibility at the start of the Round), its Eligibility will be maintained for the next Primary Bid Round.
- 4.58 The EAS will not allow any Bidder to submit a Bid that violates the Competition Caps. Further, the EAS will not permit a Bid with Activity greater than the Bidder's Eligibility at the start of the round. Such Bids can potentially be placed using the provisions for submitting Relaxed Primary Bids (discussed in the following section). If a Bidder checks a Bid that is invalid, the EAS will require the Bidder to return to the Bid form to revise the Bid and resubmit this for checking. The EAS will only allow confirmation of Bids that have satisfied the checking step.

Consequences of reductions in Eligibility

- 4.59 The consequence of the rules above is that from one Primary Bid Round to the next, a Bidder's Eligibility could stay the same (if it Bids for a Package of Lots with Eligibility equal to its current Eligibility, or makes a Relaxed Primary Bid for a Package of Lots exceeding its current Eligibility) or fall (if it bids for a Package of Lots with Eligibility strictly less than its current Eligibility).
- 4.60 The EAS will warn a Bidder if the Bidder selects a Primary Bid that would result in a reduction of Eligibility for the next Primary Bid Round.
- 4.61 Both the Initial Bid and Primary Bids made in rounds in which a Bidder reduces Eligibility are significant in terms of the Activity Rules. Such Eligibility-setting Bids have consequences for the Bidder's ability to submit subsequent Primary Bids (as described further below) and also cap the maximum amount that the

Bidder can bid as Supplementary Bids for some Packages (as described in Section 4.2.3 below).

- 4.62 Where a Bidder makes an Eligibility-setting Bid, it loses its ability to Bid unconditionally for some Packages of larger Eligibility in subsequent Primary Bid Rounds. The Bidder may still in some cases be able to make a subsequent Relaxed Primary Bid for such a Package, but the Activity Rules will only allow this where such a Bid would be consistent with the preferences that the Bidder has implicitly expressed when submitting previous Eligibility-setting Bids.
- 4.63 When a Bidder makes an Eligibility-setting Primary Bid, this sets a constraint on all the Packages with Eligibility no greater than the Bidder's Eligibility at the start of the round, but strictly greater than the Activity of the Eligibility-setting Bid (i.e. the Eligibility of the Bidder going forward into the next round). Where a Bidder subsequently bids for any of these Packages – whether by a Relaxed Primary Bid or a Supplementary Bid – this needs to be consistent with the preference it has expressed by choosing the Package subject to the Eligibility-setting Primary Bid.
- 4.64 For example, suppose that a Bidder currently has Eligibility to make a Primary Bid for Package X, but chooses to bid for a Package Y with strictly smaller Eligibility; the Bidder's Eligibility in the subsequent round will be set equal to the Eligibility of Package Y. In the current round, there is a price difference¹⁰⁴ of D between Package X and Package Y at the prevailing Round Prices. The Bidder's choice to bid for Package Y implies that the Bidder is not willing to offer more than D to obtain Package X rather than Package Y. It will only be possible for the Bidder to bid for Package X subsequently provided that this respects the preference that the Bidder has already expressed in the current round through its Eligibility-setting bid for Package Y. In particular, this means that the Bidder cannot offer more than D to obtain Package X rather than Package Y, either in any subsequent Primary Bid Round (through a Relaxed Primary Bid) or in the Supplementary Bids Round. Therefore, the Activity Rules require that any subsequent bid for Package X cannot exceed the highest bid made for Package Y plus the amount D.
- 4.65 Where a Bidder has reduced Eligibility in a number of rounds, then these consistency requirements can chain together. For example:
- in some Primary Bid Round, the Bidder had sufficient Eligibility to make a Primary Bid for Package X, but made a Primary Bid for a Package Y with strictly smaller Eligibility at a price difference of D;

¹⁰⁴ Here D is the price of Package X less that of Package Y. It could be positive, negative or zero.

- in a subsequent Primary Bid Round, the Bidder had sufficient Eligibility to make a Primary Bid for Package Y, but made a Primary Bid for a Package Z with strictly smaller Eligibility at a price difference of E.

4.66 In this case, the Activity Rules (detailed below) have the effect of:

- limiting the amount that can subsequently be bid for Package Y to the highest Bid for Package Z plus the amount E; and
- limiting the amount that can subsequently be bid for Package X to the highest Bid for Package Y plus the amount D.

4.67 The amount that can subsequently be Bid for Package X is, therefore, indirectly limited relative to the highest Bid for Package Z plus the sum of D and E through two steps.

Relaxed Primary Bids

4.68 Under certain conditions, a Bidder will be permitted to make a Primary Bid with Activity greater than the Bidder's Eligibility at the start of the round. This is called a Relaxed Primary Bid. See Annex 5 for a worked example of Relaxed Primary Bids.

4.69 In practice, the EAS will automatically check if the conditions for being able to submit a Relaxed Primary Bid on a certain Package are met. The EAS will provide the functionality for Bidders to maintain a list of Package of interest; the EAS will notify Bidders if a Relaxed Primary Bid is possible for any of the Packages in this list.

4.70 As for all Primary Bids, the Bid Amount for a Relaxed Primary Bid is determined by the Round Prices applied to the Package of Lots selected. The Bidder is not able to amend the Bid Amount Associated with a Relaxed Primary Bid.

4.71 A Bidder cannot submit a Relaxed Primary Bid if its Eligibility at the start of the round is zero.

4.72 A pre-requisite for a Bidder to be able to submit a Relaxed Primary Bid for a Package X is that the Bidder's Eligibility at the start of the Primary Bid Round must be strictly smaller than the Eligibility of Package X.

4.73 A Bidder may only submit a Relaxed Primary Bid for a Package X if:

- (i) If Y is the Package subject to the *first* Bid that the Bidder made with Activity less than the Eligibility of X, then the difference in price between X and Y at current Round Prices is not greater than when the Bidder submitted its *first* Bid for Y.
- (ii) All the Bids submitted by the Bidder (which during the Primary Bid Rounds may only include the Initial Bid, Primary Bids and Chain Bids)

must at all times satisfy the requirement that, for any Package W subject to a Bid by the Bidder:

- if the Bidder has submitted a Bid for a Package W and the Activity of this Bid exceeds the Bidder's Eligibility at the start of the current round; and
- Z is the Package for which the Bidder made the *first* Bid with Activity below the Eligibility of W; then
- the difference between the highest Bid that the Bidder submitted for W and the highest Bid that the Bidder submitted for Z cannot exceed the difference¹⁰⁵ between the price of W and Z when the Bidder made its first Bid for Z.

For the purposes of satisfying this condition, it is possible for a Bidder to submit one or more Chain Bids along with a Relaxed Primary Bid, as explained below, provided that none of the Chain Bids exceeds the price of its Package at the current Round Prices.

4.74 Note that whether condition (i) in paragraph 4.73 is met only depends on the evolution of Round Prices. In particular:

- If the first Bid that the Bidder made with Activity below the Eligibility of X was the Initial Bid, Y is the Package subject to the Initial Bid. In this case, condition (i) in paragraph 4.73 requires that the difference in price between X and Y at the Round Prices set for the current round cannot exceed the difference in price between X and Y at Reserve Prices.
- If the first Bid that the Bidder made with Activity below the Eligibility of X was a Primary Bid for Package Y, submitted in round R, then condition (i) in paragraph 4.73 requires that the difference in price between X and Y at the Round Prices set for the current round cannot exceed the difference in price between X and Y at the Round Prices in round R.

4.75 In contrast, condition (ii) in paragraph 4.73 depends on the Bids made by the Bidder. It is possible that the second condition may be satisfied given the Bids already submitted by the Bidder. In this case, the Bidder is allowed to submit a Relaxed Primary Bid for X without any further requirements. However, if the condition is not already satisfied, then the Bidder is allowed to submit further Bids for the relevant Packages *along* with the Relaxed Primary Bid in order to satisfy this requirement. Any such Bids are called Chain Bids and potentially arise in respect of Packages that have been subject to a previous Eligibility-

¹⁰⁵ i.e. the price of W less the price of Z, which could be positive, negative or zero.

setting Bid by the Bidder. If the Bidder submits Chain Bids, Condition (ii) in paragraph 4.73 must be satisfied in relation to all of these Chain Bids.

Chain Bids

4.76 The need for any Chain Bids and their required Bid Amounts will be calculated automatically by the EAS on behalf of the Bidder.

4.77 The Bid Amount for Chain Bids must satisfy the following conditions:

- the Bid Amount must be equal to the minimum Bid Amount that is needed to satisfy condition (ii) in paragraph 4.73; and
- the Bid Amount cannot exceed the price of the Package at the Round Prices set for the current round.

The Bidder is not able to amend the Bid Amount Associated with a Chain Bid. This amount will automatically be determined by the EAS when relevant.

4.78 As Round Prices cannot decrease as the Auction progresses, if the Bidder makes a Relaxed Primary Bid for X, then this Bid must be the highest Bid that the Bidder will have submitted for X so far. Therefore, if the first Bid that the Bidder made with Activity below the Eligibility of X was for Package Y, then the minimum Bid Amount for Y required to satisfy condition (ii) in paragraph 4.73 (call this Bid Amount M) is:

- the price of X in the current round; *minus*
- the difference in price between X and Y when the Bidder made its *first* Bid for Y. (If Y is the Package subject to the Bidder's Initial Bid, then the price of Packages when this Bid was made is given by Reserve Prices. If the first Bid for Y was a Primary Bid, then the price of Packages when this Bid was made is given the Round Prices in the round in which the Bidder made its first Bid for Y.)

4.79 If the highest Bid that the Bidder has already submitted for Package Y is already greater than or equal to M, then the Bidder would be able to make a Relaxed Primary Bid for X without submitting any Chain Bids. However, if the highest bid so far for Package Y is less than M, there are two possibilities:

- If M is strictly greater than the price of Package Y at current Round Prices, then the Bidder is not permitted to make a Relaxed Primary Bid for X; or
- If M is less than or equal to the price of Package Y at current Round Prices, then the Bidder may be able to make a Relaxed Primary Bid for X, but only if it also makes a Chain Bid for Package Y increasing its

previous Bid for Package Y to M (subject to such a Bid itself being consistent with the requirements of condition (ii) in paragraph 4.73).

4.80 If a Bidder is required to make a Chain Bid for a Package Y for an amount of M and the Activity of this Bid exceeds the Bidder's Eligibility at the start of the current round, then condition (ii) in paragraph 4.73 must also be satisfied by this Chain Bid. Suppose that the *first* Bid that the Bidder made with Activity below the Eligibility of Y was for Package Z. Then, the minimum Bid Amount for Z required to satisfy condition (ii) in paragraph 4.73 (call this Bid Amount L) is:

- M; *minus*
- the difference in price between Y and Z when the Bidder made its first Bid for Z. (As above, if Z is the Package subject to the Bidder's Initial Bid, then the price of Packages when this Bid was made is given by Reserve Prices. If the first Bid for Z was a Primary Bid, then the price of Packages when this Bid was made is given by the Round Prices in the round in which the Bidder made its first Bid for Z.)

4.81 If the highest Bid that the Bidder has already submitted for Package Z is already greater than or equal to L, then the Bidder would be able to make a Chain Bid for Package Y at amount M without submitting any further Chain Bids. However, if the highest bid so far for Package Z is less than L, there are two possibilities:

- If L is strictly greater than the price of Package Z at current Round Prices, then the Bidder is not permitted to make a Chain Bid for Y at amount M. In turn, this means that the Bidder is not permitted to make a Relaxed Primary Bid for X as this would require a Chain Bid for package Y at amount M; or
- If L is less than or equal to the price of Package Z at current Round Prices, then the Bidder may be able to make a Relaxed Primary Bid for X, but only if it also makes a Chain Bid for Package Y increasing its previous Bid for Package Y to M and also a Chain Bid for Package Z increasing its previous Bid for Package Z to L (subject to such a Bid itself being consistent with the requirements of condition (ii) in paragraph 4.73).

4.82 By applying condition (ii) in paragraph 4.73 recursively to Chain Bids identifies the full list of Chain Bids that would be required for the Bidder to be allowed to make a Relaxed Primary Bid for X. For the Bidder to be permitted to make such a Relaxed Primary Bid for X, it is necessary that none of the required Chain Bid Amounts exceed the price of the Package subject to the Chain Bid at current Round Prices.

- 4.83 If at least one of the Associated Chain Bid Amounts exceeds the price of the Package of Lots for which the Chain Bid is to be made at current Round Prices, it is not possible to make a Relaxed Primary Bid for X in the current Primary Bid Round. For the avoidance of doubt, this does not rule out the possibility that a Relaxed Primary Bid might be possible for X in some later Primary Bid Round, depending on the subsequent evolution of Round Prices.
- 4.84 Note that the rules for Relaxed Primary Bids (for Package X) mean that Chain Bids may be required only for Packages subject to Eligibility-setting Bids, that is either the Package of Lots subject to the Bidder's Initial Bid or for Packages of Lots subject to a Primary Bid in a round where the Bidder reduced its Eligibility.

Validity of Primary Bids

- 4.85 All Bids submitted during the Primary Bid Rounds (including Primary Bids, Relaxed Primary Bids and Chain Bids) in accordance with the Auction Rules are Valid Bids. A Valid Bid represents a binding commitment to:
- buy the specified Package of Lots at a Price not exceeding the specified Bid Amount; and
 - pay the appropriate Spectrum Usage Fee over the duration of the Licence.
- 4.86 In respect of Bidders other than Winning Bidders this commitment remains in force until ComReg announces the conclusion of the Award Process as specified in Section 5.2.10 of this document. In respect of Winning Bidders this commitment remains in force in line with the terms and conditions as set out in this document.
- 4.87 A Bid will remain valid for the duration of the Award Process unless it is replaced by a Bid for the same Package of Lots by the same Bidder for a higher Bid Amount in a subsequent Primary Bid Round or in the Supplementary Bids Round, or it is voided by ComReg pursuant to the Auction Rules.

Extension rights

- 4.88 An Extension right allows a Bidder additional time in which to submit a Bid during a Primary Bid Round. Each Bidder starts the Primary Bid Rounds with two Extension rights for the Primary Bid Rounds.
- 4.89 Additional Extension rights for the Primary Bid Rounds may be granted either to all Bidders or to individual Bidders at the absolute discretion of ComReg. Additional Extension rights can only be granted in the period between Primary Bid Rounds. Additional Extension rights cannot be granted during a Primary Bid Round.

- 4.90 In the event that a Bidder with non-zero Eligibility and one or more remaining Extension rights fails to submit a Bid during a Primary Bid Round, the round will automatically be extended for that particular Bidder, and one of its remaining Extension rights will be deducted. The EAS will automatically extend the time within which that Bidder can submit a Bid by 30 minutes from the scheduled end of the round.
- 4.91 The Extension period will end 30 minutes after the scheduled end of the round, or once all Bidders who are using Extensions have successfully submitted their Bids, whichever is the earlier.
- 4.92 Bidders that have already submitted a Bid during the Primary Bid Round cannot take any further action during the Extension period; they will be informed that the round has been extended and should wait for the announcement that the Extension period has ended.
- 4.93 Bidders that have not submitted a Bid during a Primary Bid Round and have no Extension rights remaining will not be able to submit a Bid during the Extension period, and a Zero Bid will be entered automatically on their behalf.
- 4.94 Extension rights are provided to Bidders in order to protect them from unforeseen circumstances that would prevent them from entering a Bid during a round. Extensions are intended to provide a safeguard against effects of technical failures, rather than to provide Bidders with extra time to consider their decisions.
- 4.95 Note that if a Bidder has exhausted its Extension rights and runs into technical difficulties during a round, no additional Extension will be granted at that point. Any Bidder seeking additional Extensions, having exhausted its allowance, should contact ComReg prior to the start of a round. ComReg will not grant additional Extensions unless it is satisfied that the Bidder has taken all reasonable steps to avoid missing the round deadlines and that previous Extensions were triggered through circumstances beyond the Bidder's reasonable control. However even where there is evidence to support a case for a Bidder or Bidders, ComReg retains its absolute discretion to extend a round or to make other rulings in the event of significant technical difficulties.
- 4.96 A Bidder may notify ComReg that it is unable to submit a Bid during a Primary Bid Round and is likely to require an Extension period through the approved channels of communication; notification is not mandatory, but would assist administration of the Auction.

Deposit Calls during the Primary Bid Rounds

- 4.97 During the Primary Bid Rounds, ComReg may give notice to one or more Bidders requiring them to increase their Deposits (a Deposit Call) to an amount specified by ComReg.
- 4.98 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% of its highest Bid. ComReg will specify a deadline not less than three Working Days from giving notice by which time the required funds must have been received as cleared funds in the bank account specified by ComReg during the Award Process (details of which are provided in Annex 3).
- 4.99 In the case of a Bidder that is in the course of a restructuring process ComReg reserves the right to make such Deposit Calls as it deems appropriate.
- 4.100 ComReg reserves the right to not schedule Primary Bid Rounds in the period between giving notice of a Deposit Call to one or more Bidders and the deadline for the receipt of funds or the actual receipt of cleared funds, whichever occurs earlier.
- 4.101 In the event that a Bidder fails to meet the Deposit Call requirement, ComReg may amongst other things restrict it in making further Bids and/or declare some or all of its Bids already submitted as being incapable of becoming Winning Bids.

Information available during the Primary Bid Rounds

- 4.102 Before the start of the first Primary Bid Round, each Bidder will be informed of:
- its own Initial Eligibility;
 - the number of Extension rights it has for the Primary Bid Rounds;
 - the Aggregate Demand for Lots in each Lot Category (based on all Initial Bids); and
 - the Round Price per Lot for each Lot Category in the first Primary Bid Round.
- 4.103 Information about the Initial Eligibility of other Bidders will not be disclosed.
- 4.104 At the end of a Primary Bid Round, each Bidder will be informed of:
- the Aggregate Demand for Lots in each Lot Category in the most recently completed round; and
 - its own Bid during the round;
 - its Eligibility for the next Primary Bid Round; and

- the number of Extension rights it has remaining for the Primary Bid Rounds.

4.105 Upon scheduling of a further Primary Bid Round, each Bidder will be informed of:

- its Eligibility for the forthcoming scheduled round;
- the number of Extension rights it has remaining for the Primary Bid Rounds; and
- the Round Price per Lot for each Lot Category in the forthcoming scheduled round.

4.106 No information will be released about the Bids submitted by other Bidders during the Primary Bid Rounds.

4.107 The EAS will include the functionality to view and download information on Round Prices, Aggregate Demand and the Bidder's own demand in previous Primary Bid Rounds.

End of the Primary Bid Rounds

4.108 The Primary Bid Rounds end following a round in which there was no excess demand for Lots in any Lot Category. At this point, ComReg will announce that the Primary Bid Rounds have finished and that the Auction will progress to the Supplementary Bids Round.

4.109 In addition, following the close of a Primary Bid Round, ComReg may announce that it is ending the Primary Bid Rounds early (i.e. while demand is still above supply in at least one Lot Category). In this case, the Auction will proceed directly to the Supplementary Bids Round, and there will be no further Primary Bid Rounds.

4.110 ComReg will only terminate the Primary Bid Rounds early if it believes that proceeding directly to the Supplementary Bids Round at this time is in the general interest of running an efficient Award Process.

4.2.3 The Supplementary Bids Round

Schedule for the Supplementary Bids Round

4.111 The start time and duration of the Supplementary Bids Round will be announced by ComReg following the completion of the Primary Bid Rounds.

4.112 There will be at least three clear Working Days between the last Primary Bid Round and the start of the Supplementary Bids Round.

- 4.113 ComReg has discretion over the Round Schedule and duration of the Supplementary Bids Round. However, ComReg anticipates that the round will take place between 09.00 and 18.00 hours on a single Working Day.
- 4.114 A single Extension right will be available to all Bidders in the Supplementary Bids Round. Extension rights in the Supplementary Bids Round will operate in the same way as Extension rights in the Primary Bid Rounds. The Extension of the Supplementary Bids Round will not be longer than 30 minutes. For the avoidance of doubt, the Extension right available for the Supplementary Bids Round is distinct from the Extension rights available during the Primary Bid Rounds.

Supplementary Bid submission

- 4.115 When the Supplementary Bids Round is in progress, Bidders may submit Supplementary Bids for multiple Packages using the EAS.
- 4.116 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.
- 4.117 Bidders may submit a Supplementary Bid for any Package of Lots except the Zero Package (i.e. the Package consisting of no Lots in any Lot Category) subject to not breaching the Competition Caps.
- 4.118 The interface of the EAS will provide functionality for Bidders to:
- generate and amend a list of Packages on which the Bidder wants to submit Supplementary Bids (subject to the requirement that Packages bid for in Bidders' Initial Bids and in the Primary Bid Rounds must all be included in the list); and
 - specify the Bid Amount for each of the Packages in the list.
- 4.119 The Bid Amount for each Supplementary Bid is discretionary, subject to the restrictions set out in the sections below.
- 4.120 A Supplementary Bids form may contain Bids for up to 1,000 Packages. This limit includes the Bidder's Initial Bid and all Packages for which the Bidder submitted Bids during the Primary Bid Rounds.
- 4.121 Bid submission will follow the two-step process described in Section 4.1.2.
- 4.122 The EAS will prevent a Bidder from submitting a Supplementary Bids form that contains invalid Bids. If a Supplementary Bids form is rejected by the EAS, the Bidder will be able to revise its set of Supplementary Bids; any necessary revisions must be completed within the time limits set for the Supplementary Bids Round.

- 4.123 A Bidder may submit only one Supplementary Bids form in the Supplementary Bids Round. Once the Bidder has confirmed its Supplementary Bids, the Bidder will not be able to revise or withdraw any of these Bids, or submit further Bids in the Supplementary Bids Round.
- 4.124 A Bidder is deemed not to have submitted Supplementary Bids until such time as confirmation of a valid set of Supplementary Bids is received by the EAS. Receipt of such confirmation will be communicated to the Bidder through the EAS. It is the responsibility of the Bidder to check receipt of the Supplementary Bids confirmation by the EAS, and to alert ComReg if problems are suspected to have prevented successful confirmation.

Restrictions on Bid Amounts for Supplementary Bids

- 4.125 Bid Amounts in the Supplementary Bids must be specified in units of EUR 100.
- 4.126 The Bid Amount for a Package must not be lower than the sum of the Reserve Prices for the Lots included.
- 4.127 The Bid Amount for a Package for which the Bidder has made a Primary Bid must not be lower than the highest Bid submitted for the Package (regardless of whether this is a standard Primary Bid, Relaxed Primary Bid or Chain Bid).
- 4.128 Each Bidder has a Final Primary Package; this is the Package of Lots Bid for in the Final Primary Bid Round. If the Bidder submitted a Zero Bid in the Primary Bid Rounds (either during the Final Primary Bid Round or in an earlier round), the Final Primary Package is the Zero Package consisting of no Lots in any Lot Category (for which the Bid Amount is zero and cannot be changed).
- 4.129 All Supplementary Bids for Packages other than the Final Primary Package are subject to a Final Price Cap relative to the Bid submitted for the Final Primary Package.
- 4.130 For all Packages with Associated Activity greater than the Bidder's Activity in the Final Primary Bid Round, the Bid Amount is also subject to a Relative Cap.¹⁰⁶
- 4.131 As a consequence of the rules above, if a Bidder's Final Primary Package contains at least one Lot and the Bidder did not submit a Relaxed Primary Bid in the Final Primary Bid Round, then there is no limit on the Supplementary Bid that can be submitted for the Final Primary Package.

¹⁰⁶ Note that if a Bidder submits a Relaxed Primary Bid, its Activity in the round is equal to its Eligibility at the start of the round. This means that if the Bid submitted in the Final Primary Round is a Relaxed Primary Bid, the Bid Amount for that Package is subject to a relative cap in the Supplementary Bids Round.

Final Price Cap¹⁰⁷

4.132 For any Package of Lots X, the Supplementary Bid for X may not exceed:

- the Bidder's highest Bid for the Final Primary Package (which may be a Primary Bid, Relaxed Primary Bid or a Supplementary Bid); plus
- the difference between the price of X and the Final Primary Package at the Round Prices in the final Primary Bid Round.

Relative Caps

4.133 Relative Caps apply to Supplementary Bids for any Packages with Eligibility greater than the Bidder's Eligibility at the start of the Final Primary Bid Round.

4.134 The Relative Cap limits the Supplementary Bid for a Package X based on the prices when the Bidder made the *first* Bid with Activity below the Eligibility of X. More specifically, let Y denote the Package subject to the *first* Bid with Activity below the Eligibility of X. In this case, the Supplementary Bid for X cannot exceed:

- the Bidder's highest Bid for Y (which may be a Primary Bid, a Relaxed Primary Bid, a Chain Bid or a Supplementary Bid); plus
- the difference between the price of X and Y when the Bidder made its *first* Bid for Y. (If Y is the Package subject to the Bidder's Initial Bid, then the difference in price between X and Y when the Bidder made its first Bid for Y is given by the Reserve Price of each Package. Otherwise, the difference in price between X and Y when the Bidder made its first Bid for Y is given by the price of each Package in the Primary Round in which the Bidder made its first Primary Bid for Y.)

How caps apply to the Final Primary Package

4.135 If the Bidder submitted the Zero Bid in the Final Primary Bid Round (regardless of whether the Bidder had already submitted a Zero Bid in an earlier Primary Bid Round), then the Final Price Cap means that all Supplementary Bids are constrained to be at most the price of the corresponding Package in the Final Primary Bid Round.

4.136 Otherwise, there are two cases to consider, depending on whether or not the Bidder made a Relaxed Primary Bid in the Final Primary Bid Round:

¹⁰⁷ See examples as per Annex 5.

- If a Bidder's Final Primary Package did not submit a Relaxed Primary Bid in the Final Primary Bid Round, then there is no limit on the Supplementary Bid that can be submitted for the Final Primary Package;
- If the Final Primary Bid was a Relaxed Primary Bid, the Supplementary Bid for the Final Primary Package is subject to a Relative Cap, as the Eligibility of the Final Primary Package is strictly greater than the Bidder's Eligibility at the start of the Final Primary Bid Round. The effect of this rule is that increasing the bid for the Final Primary Package in the Supplementary Bids Round may require also increasing the bids for the Packages subject to Eligibility-setting Bids with Activity strictly less than the Eligibility of the Final Primary Package. Provided that the Bids for all of these Packages are increased in step, there is no limit on their Bid Amounts.

4.137 Examples of this situation are discussed in Annex 5, which includes a comprehensive worked example.

Validity of Supplementary Bids

4.138 Each Supplementary Bid submitted in accordance with the Auction Rules is considered to be a Valid Bid. A Valid Bid represents a binding commitment to:

- buy the specified Package of Lots at a Price not exceeding the specified Bid Amount; and
- pay the appropriate Spectrum Usage Fee over the duration of the Licence.

4.139 In respect of Bidders other than Winning Bidders, this commitment remains in force until ComReg announces the conclusion of the Award Process as specified in Section 5.2.10 of this document. In respect of Winning Bidders this commitment rElectronicemains in force in line with the terms and conditions as set out in document.

4.140 A Valid Bid will remain valid for the duration of the Award Process, unless it is voided by ComReg pursuant to the Auction Rules.

4.2.4 Winner and Base Price Determination

4.141 Following the close of the Supplementary Bids Round, ComReg will determine the combination of Winning Bids, and the prices (the Base Prices) to be paid by Winning Bidders.

4.142 Only Valid Bids that have not subsequently been voided by ComReg (and hence are no longer Valid Bids) will be considered when determining the Winning Bidders and Base Prices. For the avoidance of doubt:

- if a Bidder has been excluded from the Auction, all of the Bids it submitted will be voided and will not be taken into account for the determination of Winners and Base Prices; and
- any other Bids that have been voided by ComReg pursuant to the Auction Rules will not be considered Valid Bids, and will not be included in the Winner and Base Price determination process.

4.143 Hereafter, within this section any reference to 'Bid' or 'Bids' is solely to Valid Bids.

Winner Determination

4.144 A Feasible Combination of Bids is one in which:

- in each Lot Category, no more Lots are awarded than are available in that Lot Category; and
- at most one Bid is accepted from each Bidder.

4.145 The value of a Feasible Combination of Bids is equal to the sum of Bid Amounts for all Bids in the combination, plus the Reserve Price of any Lots that would remain unassigned if only the Bids in the combination are accepted.

4.146 The combination of Winning Bids is a Feasible Combination of Bids that has the greatest value across all Feasible Combinations of Bids, considering all the Bids submitted in the Auction (including Initial Bids, standard and Relaxed Primary Bids, Chain Bids and Supplementary Bids).

4.147 In the event that there are multiple Feasible Combinations of Bids with equal greatest value that meet the conditions above, the winning assignment will be the Feasible Combination of Bids amongst these tied scenarios with greatest total price for the assigned Lots valued at Reserve Prices.

4.148 If rules outlined at paragraphs 4.142 and 4.145 do not identify a unique Feasible Combination of Bids, then the winning assignment will be selected at random from all combinations of Bids that satisfy these rules.

Base Price determination

4.149 For each Winning Bid (and thus for each Winning Bidder), ComReg will determine a Base Price that must be paid by the Bidder. This is an overall price for the entire Package (i.e. the combination of Lots included in the Winning Bid).

4.150 Base Prices are the minimum amount that each Winning Bidder, and each group of Winning Bidders jointly, could have bid without changing the outcome

of the winner determination process, and are based on the concept of Opportunity Cost.

4.151 The Opportunity Cost of a Bidder, or a group of Bidders, is defined to be the difference between:

- the value of the hypothetical winning assignment in a scenario where all Bids from the Bidder(s) in question were excluded; and
- the value of the original winning assignment less the total Bid Amount from all Winning Bids from the Bidder(s) in question.

As above, the value of a winning assignment is the total of Amounts of Winning Bids plus the value of any unassigned Lots at relevant Reserve Prices.

4.152 Base Prices are determined jointly for all Winning Bidders in a single calculation. A unique set of Base Prices is found by applying the following requirements:

- First requirement: the Base Price of a Winning Bid must be greater than or equal to the total Reserve Prices of the Lots in the Package Associated with that Winning Bid, but less than or equal to the Winning Bid Amount.
- Second requirement: the set of Base Prices must be sufficiently high such that the sum of prices to be paid by each possible subset of Winning Bidders must be at least their joint Opportunity Cost. If there is only one set of Base Prices that meet the first and second requirements, this determines the Base Prices for the Main Stage.
- Third requirement: If there are multiple sets of Base Prices that fulfil the first and second requirements, the set(s) of Base Prices that minimise(s) the sum of Base Prices across Winning Bidders is selected. If there is only one set of Base Prices satisfying the first, second and third requirements, this determines the Base Prices for the Main Stage.
- Fourth requirement: If there are multiple sets of Base Prices that satisfy the first three requirements, the set of Base Prices that minimises the sum of squares of differences between the Base Prices for each Winner and the individual Opportunity Cost for that Winner is selected.

4.153 These conditions characterise a unique Base Price for each Winning Bidder that is no more than their Winning Bid and is at least the Reserve Price for the Package of Lots assigned to the Bidder. Finally, if these Base Prices are not amounts in units of EUR 100 they are rounded up to the nearest EUR 100.

4.2.5 Deposit Calls following the Supplementary Bids Round

- 4.154 At the end of the Supplementary Bids Round, and prior to the notification to Bidders on the outcome of the Main Stage, ComReg may give notice to one or more Bidders that they need to increase their Deposits to an amount specified by ComReg.
- 4.155 ComReg reserves the right to issue a Deposit Call of up to 100% of a Bidder's highest Bid at this point.
- 4.156 If a Deposit Call is issued, ComReg will specify a deadline not less than three Working Days from giving notice by which time the required funds must have been received as cleared funds in the bank account specified by ComReg during the Award Process (details of which are provided in Annex 5).
- 4.157 ComReg will not notify the outcome of the Main Stage in the period between issuing notice of a Deposit Call to one or more Bidders and the deadline for the receipt of funds or the actual receipt of cleared funds, whichever occurs earlier.
- 4.158 In the event that ComReg issues a Deposit Call following the completion of the Main Stage of the Auction, but before the results of the Main Stage have been announced to Bidders, and one or more Bidders do not provide their required funds by the deadline set by ComReg, ComReg may at its sole discretion exclude any such Bidder and re-run the Winner and Price Determination algorithm excluding all Bids submitted by any such Bidder during the Award Process.

4.2.6 End of the Main Stage

- 4.159 Once ComReg has determined the Winning Bids and the Base Prices, and any Deposit Calls issued have been fulfilled, the outcome of the Main Stage will be announced to Bidders.
- 4.160 All Bidder's will be informed of the number of Lots won by each Bidder in each Lot Category.
- 4.161 Each Winning Bidder will be told the Base Price that applies to its own Winning Bid. This information will not be released to other Bidders at this stage.

4.3 The Assignment Stage

- 4.162 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 B-Lots.¹⁰⁸

¹⁰⁸ Given the outcome of the Main Stage (or the Qualification Stage where the Award Process progresses directly from the Qualification Stage to the Assignment Stage).

- 4.163 Winning Bidders awarded B-Lots will be able to participate in the Assignment as part of an Alliance, formed with one or more other Winning Bidders.
- 4.164 The Assignment Stage initially establishes a Provisional Frequency Plan by determining a specific frequency assignment for each Winning Bidder, or Alliance of Winning Bidders, awarded frequency-generic B-Lots. For any Alliance formed, the Provisional Frequency Plan will be established as if each Alliance were a single entity. For this reason, the term 'Assignment Bidder' is used to reference individual entities considered for determining the Provisional Frequency Plan in the Assignment Stage. That is, an Assignment Bidder is either:
- a single Winning Bidder participating independently in the Assignment Stage; or
 - a group of Winning Bidders participating as an Alliance in the Assignment Stage.
- 4.165 The determination of a Provisional Frequency Plan may require an Assignment Round, in which Assignment Bidders are able to express their preferences over the various possible assignments available to them in relation to the B-Lots. Assignment Bidders may be required to pay an amount (the Additional Price) in addition to their Base Prices for the specific frequencies assigned to them.
- 4.166 A-Lots specify predetermined frequency assignments; therefore frequency assignments for A-Lots do not need to be determined in the Assignment Stage.
- 4.167 Following the determination of the Provisional Frequency Plan, Bidders will be given a period of ten clear Working Days (the Negotiation Phase) in which they may negotiate between themselves and agree on an alternative assignment of the frequencies above state services in one or more Regions, subject to a number of restrictions and approval of ComReg.
- 4.168 The frequency assignments established following the Negotiation Phase would form the Final Frequency Plan.

4.3.1 Need for an Assignment Round

- 4.169 Following the Main Stage (or Qualification Stage if a Main Stage is not required), ComReg will establish the ways in which specific frequencies can be assigned to the Assignment Bidders awarded frequency-generic Lots (B-Lots), subject to the requirements that:
- for each Region in which an Assignment Bidder won B-Lots in the Main Stage, the Assignment Bidder is awarded a contiguous block of spectrum within the Region, in accordance with the number of B-Lots it won in that Region;

- any option for assigning frequencies to a particular Assignment Bidder is consistent with all other Assignment Bidders each receiving contiguous spectrum in every Region;
- any Assignment Bidder that has been awarded exactly the same number of B-Lots in every Region is assigned the same frequencies in each Region;
- subject to the previous requirements being satisfied, for Assignment Bidders that have been awarded B-Lots in multiple Regions, the options presented will be those where they are assigned the same frequencies in each Region to the maximum extent; and
- subject to the previous requirements being satisfied, the extent to which unassigned spectrum rights of use can be combined into the fewest number of contiguous blocks is maximised.

4.170 Each possible assignment of frequencies across all Assignment Bidders and Regions is referred to as a 'frequency plan'. Note that the frequencies assigned in relation to the A-Lots are predetermined and so fixed across all frequency plans.

4.171 An Assignment Round is required if there are multiple frequency plans that meet the criteria specified above, and there is a need to select one for the formation of the Provisional Frequency Plan.

4.3.2 Participating as an Alliance in the Assignment Stage

4.172 As stated above, Winning Bidders that have been awarded at least one B-Lot may choose to bid together as an Alliance in the Assignment Stage.

4.173 For each Alliance established:

- Assignment Options will be generated as if the members of the Alliance were a single Winning Bidder who had won all of the B-Lots in total won by the Alliance members in the Main Stage; and
- the Alliance will submit Assignment Bids or decisions as a single entity during the Assignment Round, using the bidding credentials of a designated Alliance member (the Leading Member).

4.174 Given the limited time available for the formation of such Alliances, it is desirable to ensure that appropriate powers of Authorised Agents are in place at the time of Application. Accordingly, if Applicants wish to have the ability to participate in the Assignment Stage as part of an Alliance, Authorised Agents must further be authorised to delegate the power to make Assignment Stage Bids, which are binding on the Applicant on a joint and several basis with all members of the Alliance, to up to two Authorised Agents of another member of

the Alliance (the “**Leading Member**”). Alliance members may put whatever private contractual protections they wish in place between themselves so long as such protections do not undermine ComReg’s ability to rely on such bids.

4.175 Winning Bidders will be given a period of ten clear Working Days following the announcement of the Main Stage outcome in which to form any Alliances and provide written notification¹⁰⁹ to ComReg of:

- the identity of each Winning Bidder to be included in the Alliance; and
- the identity of a nominated Alliance member (the Leading Member) whose bidding credentials will be used by the Alliance for submitting Assignment Bids and decisions during the Assignment Round.

4.176 The Leading Member of an Alliance will be primarily responsible for:

- payment of any Additional Price related to the Alliance’s winning Assignment Bid;
- payment of any Deposit increase required by ComReg following an Assignment Round in relation to any Assignment Bids submitted by the Alliance; and
- notifying ComReg of the specific frequencies to be assigned to each Alliance member during the Negotiation Phase.

4.177 Alliance members will be jointly and severally liable for payment of the Deposit relating to the Assignment Bids submitted for the Alliance and the payment of any Additional Price. Should the Leading Member fail to transfer the required funds, ComReg reserves the right to require payment from other Alliance members (see also paragraph 4.209 below).

4.178 A Winning Bidder can be part of at most one Alliance.

4.179 The formation of an Alliance is prohibited if the total amount of spectrum awarded to the proposed Alliance members would exceed the Competition Cap of 150 MHz in any Region.

4.180 Before the start of an Assignment Round, ComReg will notify all Winning Bidders of the formation of any Alliances and the identities of the Alliance members.

4.181 During the Negotiation Phase, the Leading Member of an Alliance will be required to notify ComReg of the specific frequencies to be assigned to each Alliance member, subject to the requirement that in each region, every Alliance member is awarded a contiguous block of spectrum within the Region in

¹⁰⁹ The Alliance Notification Form provided in Annex 4 must be completed and submitted to ComReg

accordance with the number of B-Lots it won and the frequency range assigned to the Alliance in that Region.

4.182 If an Alliance fails to notify ComReg of the frequency assignments for members within the time allowed, frequency assignments for the Alliance members will be determined by ComReg.

4.3.3 Assignment Options

4.183 If an Assignment Round is required, for each Assignment Bidder the set of feasible frequency plans identified has an associated set of unique frequency assignments that could be assigned to that Assignment Bidder. These are the Assignment Bidder's 'Assignment Options'. The number of Assignment Options available to an Assignment Bidder will be less than or equal to the number of possible frequency plans.¹¹⁰

4.184 During the Assignment Round, an Assignment Bidder with multiple Assignment Options will be invited to either:

- submit Assignment Bids for its Assignment Options in the case that its choice of option could conflict with the choice of option of another Assignment Bidder;¹¹¹ or
- select its most preferred frequency assignment from amongst the Assignment Options available to it, in the case that its choice of option cannot conflict with the choice of option of another Assignment Bidder (if any).¹¹²

4.185 In the case that only one Assignment Option is available for an Assignment Bidder that Bidder will simply be assigned the corresponding frequencies and will not participate in the Assignment Round.

¹¹⁰ For example, there may be ten frequency plans that meet the requirements, but the specific assignments for a particular Bidder can only be accommodated in one of two ways in each of the frequency plans. In this case, the Bidder will have only two Assignment Options.

¹¹¹ For example, if Bidder A and Bidder B win all of the B-Lots in a given Region (and suppose they only win Lots in that Region), one Bidder's frequency assignment would be positioned at the top of the available frequencies, with the other Bidder's assignment in the frequencies below. If both Bidders would prefer the lower frequencies, there is a conflict in their demand. The two Bidders will then be able to submit Assignment Bids for the two possible frequency assignments and the winner of the lower frequencies will be determined on the basis of these Assignment Bids.

¹¹² Suppose a Bidder is the only winner of B-Lots in a given Region (and the Bidder does not win spectrum in any other Region). According to the rules for Assignment Option generation, the frequencies assigned to the Bidder could be positioned at the top or the bottom of the frequency range associated with the B-Lots. Which of those is ultimately adopted has no impact on any other Bidder's chances of being awarded its preferred frequencies, and so there is no need to use a bidding process for choosing between the two. Instead, the Bidder is allowed to simply choose which of the two options it would like to be assigned.

4.3.4 Schedule for the Assignment Round

- 4.186 After the Main Stage (or after completion of the Qualification Stage if a Main Stage is not required) a period of ten clear Working Days will be afforded to Winning Bidders to establish Alliance(s).
- 4.187 ComReg will then notify all Assignment Bidders of the schedule for the Assignment Round.
- 4.188 Upon scheduling of the Assignment Round, the EAS¹¹³ will inform each Assignment Bidder of its Assignment Options, if applicable.
- 4.189 There will be at least two clear Working Days from the notification of the Assignment Options to Assignment Bidders until the start of the Assignment Round.
- 4.190 ComReg has discretion over the start time and duration of the round. However, ComReg anticipates that the Assignment Round will take place between 09.00 and 18.00 hours on a single Working Day, and last for at least 2 hours.
- 4.191 A single Extension right will be available to each Assignment Bidder in the Assignment Round. The Extension right in the Assignment Round will operate in the same way as Extension rights in the Primary Bid Rounds and Supplementary Bids Round. The Extension of the Assignment Round, where relevant, will not be longer than 30 minutes. For the avoidance of doubt, the Extension right in the Assignment Round is distinct from the Extension rights in the Main Stage.

4.3.5 Selection of Assignment Option without bidding

- 4.192 When the Assignment Round is in progress, a participating Assignment Bidder with the option to select a frequency assignment from amongst the Assignment Options presented to it will be able to do so using the EAS.
- 4.193 The EAS will provide each relevant Assignment Bidder with the functionality to choose its preferred Assignment Option and submit the decision.
- 4.194 Submission of the decision in the Assignment Round follows a two-step process, similar to the Bid submission process described in Section 4.1.2. The Assignment Bidder must first check its decision, and then confirm the decision.
- 4.195 If an Assignment Bidder fails to submit a decision during the Assignment Round (or during the Associated Extension), the Assignment Option it is awarded will be determined through random selection.

¹¹³ Alternatively, in exceptional circumstances, ComReg reserves the right to run the Assignment Round via other means (e.g. sealed envelopes).

4.196 The Additional Price for any Assignment Bidder who can select an Assignment Option without bidding will be zero.

4.3.6 Assignment Bid Submission

4.197 When the Assignment Round is in progress, a participating Assignment Bidder with the option to submit Assignment Bids may do so for some or all of its Assignment Options.

4.198 The EAS will provide each relevant Assignment Bidder with the functionality to check and confirm Assignment Bids through a two-step submission process.

4.199 The Bid Amount Associated with each Assignment Bid is discretionary. Assignment Bids must be in multiples of whole euros. The minimum Bid Amount for each Assignment Option is zero. There is no upper limit on the Bid Amounts for Assignment Options.

4.200 Note that all Assignment Bidders are guaranteed to be assigned the amount of spectrum in each Region that they were assigned in the Main Stage. Assignment Bids will only affect which of the possible Assignment Options will be awarded, and any Additional Prices to be paid.

4.201 Assignment Bids for different Assignment Options with the same Bid Amount indicate that the Assignment Bidder is indifferent between these options. It is recommended (but not obligatory) that Assignment Bidders submit an Assignment Bid of zero euros for their least favoured option(s).

4.202 If an Assignment Bidder submits Assignment Bids for some, but not all, of its Assignment Options, it will be deemed to have submitted a Bid Amount of zero for those Assignment Options for which it did not submit a Bid.

4.203 If an Assignment Bidder fails to submit Assignment Bids during the Assignment Round (or during the Associated Extension), it will be deemed to have submitted a Bid Amount of zero for every Assignment Option.

4.3.7 Validity of Bids in the Assignment Round

4.204 Each Assignment Bid submitted in accordance with the Auction Rules is considered to be a Valid Bid.

4.205 Each Valid Bid represents a binding commitment to pay an Additional Price for the corresponding Assignment Option that is less than or equal to the Bid Amount submitted for that Assignment Option.

4.206 An Assignment Bid submitted during the Assignment Round and identified as valid under Section 4.1.2 remains valid unless voided by ComReg pursuant to the Auction Rules. Assignment Bids may be voided, and no longer considered to be Valid Bids, if:

- an Assignment Bidder fails to provide the required funds to ComReg within the set deadline following a Deposit Call, in which case, at ComReg's discretion, all of the Assignment Bidder's Assignment Bids may be voided (as set out in Section 4.3.8);
- an Assignment Bidder is excluded from the Auction, pursuant to the Auction Rules, in which case all of that Assignment Bidder's Assignment Bids will be voided; or
- ComReg voids the Assignment Round or all Bids submitted in the Auction (as set out in Section 4.1.6), in which case all Assignment Bids submitted by every Assignment Bidder will be voided.

4.3.8 Deposit Call following the Assignment Round

4.207 At the end of an Assignment Round, and prior to the notification to Assignment Bidders of the outcome of the Assignment Round, ComReg may give notice to one or more Assignment Bidders that they need to increase their Deposit to ensure that the difference between the Bidder's Deposit and its Base Price must be at least the amount of its highest Assignment Bid. For an Alliance, this will be calculated on the basis of the Deposit and Base Price for the Leading Member responsible for submitting Assignment Bids and paying the Additional Price for the Alliance.

4.208 If a Deposit Call is issued, ComReg will specify a deadline not less than three Working Days from giving notice by which time the required funds must have been received as cleared funds in the bank account specified by ComReg during the Award Process (details of which are provided in Annex 3).

4.209 ComReg will not notify the outcome of the Assignment Round in the period between issuing notice of a Deposit Call to one or more Assignment Bidders and the deadline for the receipt of funds or the actual receipt of cleared funds, whichever occurs earlier.

4.210 In the event that ComReg issues a Deposit Call following the completion of the Assignment Round but before the results of the Assignment Round have been announced to Bidders, and one or more Assignment Bidders¹¹⁴ do not provide their required funds by the deadline set by ComReg, ComReg reserves the discretion to void all of the Assignment Bidder's Assignment Bids (setting them to zero) before running the Winner and Price Determination algorithm.¹¹⁵

¹¹⁴ In respect of an Alliance, the Leading Member is responsible for transferring the required funds.

¹¹⁵ The Assignment Bidder will still be awarded spectrum in accordance with the Lots won in the Main Stage and one of the frequency assignments available to it, but any preferences it has expressed for specific frequencies through the submission of Assignment Bids will not be taken into account when determining the Provisional Frequency Plan.

4.211 In the case that an Assignment Bidder is an Alliance of Winning Bidders, the transfer of funds for the Deposit should be made by the Leading Member nominated on formation of the Alliance, as set out in Paragraph 4.175. Notwithstanding this, Alliance members will be jointly and severally liable for payment of the Deposit relating to the Assignment Bids submitted by their corresponding Assignment Bidder. Should the Leading Member fail to transfer the required funds, ComReg reserves the right to require payment from other Alliance members.

4.3.9 Winner and Additional Price Determination

Determination of winning Assignment Options

4.212 Following the end of the Assignment Round, ComReg will determine the Assignment Option awarded to each Assignment Bidder, based on Assignment Bids submitted during the Assignment Round.

4.213 The winning Assignment Bids are the combination of valid Assignment Bids of greatest total value amongst all valid Assignment Bids submitted, subject to the conditions that:

- exactly one Assignment Bid is accepted from each Assignment Bidder;
- the specific frequency assignments corresponding to the set of winning Assignment Bids correspond to one of the possible frequency plans identified by ComReg.

4.214 If more than one combination of Assignment Bids meeting the conditions above have equal highest total value, one combination will be selected at random.

Additional Price Determination

4.215 Following the determination of winning Assignment Bidders, Additional Prices will be determined.

4.216 The Opportunity Cost of an Assignment Bidder, or a group of Assignment Bidders, is defined to be the difference between:

- the total amount of all winning Assignment Options in a hypothetical scenario in which all the Assignment Bids of the Assignment Bidder(s) in question were set to zero; less
- the total amount of the original winning Assignment Option(s) less the total Bid Amount of all Winning Assignment Option(s) from the Bidder(s) in question.

4.217 Additional Prices are determined jointly for all Assignment Bidders in a single calculation. A unique set of Additional Prices is determined by applying the following requirements:

- First requirement: the Additional Prices are required to be positive or zero, and no greater than the Bid Amount of the Winning Assignment Bid.
- Second requirement: the set of Additional Prices must be sufficiently high such that the sum of Additional Prices to be paid by each possible subset of Assignment Bidders must be at least their Opportunity Cost. If there is only one set of Additional Prices that satisfies the first two requirements, this determines the Additional Prices.
- Third requirement: if there are multiple sets of Additional Prices that fulfil the first and second requirement, the set(s) of Additional Prices that minimise(s) the sum of Additional Prices across all Assignment Bidders is selected. If there is only one set of Additional Prices satisfying these three requirements, this determines the Additional Prices.
- Fourth requirement: If there are multiple sets of Additional Prices that satisfy the first three requirements, the set of Additional Prices that minimises the sum of squares of differences between the Additional Prices for each Assignment Bidder and the Opportunity Cost for that Assignment Bidder is selected.

4.218 These requirements characterise a unique Additional Price for each Assignment Bidder that is no more than their winning Assignment Bid. Finally, if these Additional Prices are not amounts in whole euros, they are rounded up to the nearest whole euro.

4.3.10 End of the Assignment Round

4.219 Once ComReg has determined frequency Assignments for Assignment Bidders and any Additional Prices (whether an Assignment Round was required or not) these, along with the frequency assignments relating to the A-Lots awarded, will form the Provisional Frequency Plan.

4.220 Bidders will be informed of the specific frequency ranges assigned to each Assignment Bidder in each Region. Where a frequency range is assigned to an individual Bidder, the identity of that Bidder will be revealed. In the case that the frequency range has been assigned to an Alliance, the identity of the members in the Alliance and the Leading Member will be provided.

4.221 Each Assignment Bidder will also be told the Additional Price that will apply to its own winning Assignment Bid.

4.222 From this point, it is considered that the Negotiation Phase is in progress.

4.3.11 Negotiation Phase

4.223 Following the completion of the Assignment Round and announcement of the Provisional Frequency Plan and Additional Prices, Assignment Bidders will be allowed a period of ten clear Working Days (the Negotiation Phase) in which:

- Assignment Bidders¹¹⁶ may communicate with each other to negotiate a re-organisation of the frequency assignments above state services in each Region; and
- the Leading Member of each Alliance should inform ComReg of the specific frequencies to be assigned to each Alliance member.

Any frequency assignment proposed to ComReg is 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.

4.224 For the avoidance of doubt, Assignment Bidders will be required to pay the Additional Prices calculated as a result of Assignment Bids submitted in the Assignment Round, regardless of the outcome of the Negotiation Phase.

Negotiation of alternative frequency assignment

4.225 All Assignment Bidders will have the opportunity to agree amongst themselves an alternative configuration of the frequency assignments above state services (relative to the Provisional Frequency Plan) within each Region.

4.226 Specifically, for any given Region, two or more Assignment Bidders awarded B-Lots within the Region may agree on a re-organisation of the specific frequencies assigned to them above state services within that Region, provided that:

- following the re-organisation, each of the parties involved is assigned the same total amount of contiguous spectrum within the Region as was awarded to them in the Main Stage;
- all other Assignment Bidders are unaffected by the re-organisation.

4.227 For the avoidance of doubt:

- Assignment Bidders will not be allowed to 'swap' frequencies across Regions; and

¹¹⁶ For the avoidance of doubt, an Alliance negotiates in the Negotiation Phase as a single entity i.e. Members of an Alliance cannot negotiate individually during the Negotiation Phase.

- Alliance Bidders will only be allowed to ‘swap’ their frequencies as a whole.
- 4.228 If Assignment Bidders are able to successfully negotiate and agree on an alternative frequency plan for one or more Regions, a request for the changes must be submitted to ComReg before the end of the Negotiation Phase. ComReg will assess each request received before deciding on the frequency reassignments it will allow. Successful requests will be adopted for the Final Frequency Plan.
- 4.229 ComReg reserves the right to refuse any or all requests for amendments to the frequency assignment, relative to the Provisional Frequency Plan.
- 4.230 If Winning Bidders do not submit a request for an alternative configuration of frequency assignments, ComReg will rely on the Provisional Frequency Plan (and valid frequency assignments for Alliance members notified to ComReg).

Frequency assignment for Alliance members

- 4.231 Before the end of the Negotiation Phase, Leading Members of Alliances must provide written notification to ComReg of the specific frequency assignments (in relation to the B-Lots) for each Alliance member.
- 4.232 The frequency assignments proposed must be such that, in every Region:
- each Alliance member receives a contiguous block of spectrum corresponding to the number of B-Lots awarded to it in that Region; and
 - the frequency assignments for each Alliance member are within the contiguous block of frequencies assigned to the Alliance within the Region, as set out in the Provisional Frequency Plan and subject to any further negotiations the Alliance might have made with other Assignment Bidders during the Negotiation Phase.
- 4.233 Valid frequency assignments will be adopted in the Final Frequency Plan.
- 4.234 If the Leading Member does not submit a proposal for frequency assignments for all members of the corresponding Alliance to ComReg before the end of the Negotiation Phase, or if the proposed frequency assignments are invalid according to the Auction Rules, the frequencies to be assigned to each Alliance member will be determined by ComReg.

4.3.12 End of the Assignment Stage

- 4.235 Once ComReg has determined the Final Frequency Plan (the specific frequencies to be assigned to each Winning Bidder), the outcome of the Assignment Stage will be notified to Bidders.

4.236 The following information will be released:

- Each Bidder will be informed of the specific frequency ranges assigned to each Winning Bidder.
- Each Assignment Bidder will be informed about the Additional Price that will apply to its own winning Assignment Round Bid. This information will not be released to other Bidders at this point in the process.

4.4 End of Auction

4.4.1 Closing of the Auction

4.237 The Auction ends with the completion of the Assignment Stage. At this point, the results of the Auction will be released to all Bidders and in tandem made public.

4.238 The following information will be released to all Bidders:

- the identity of the Winning Bidders;
- the frequency ranges awarded to each Winning Bidder in each Region;
- the Base Price to be paid by each Winning Bidder; and
- any Additional Price for specific frequency assignments to be paid by each Assignment Bidder.

4.4.2 Upfront Fees

4.239 The Upfront Fee for each Winning Bidder that participated individually in the Assignment Stage will be the sum of their Base Price plus any Additional Prices for the specific frequencies assigned to them (in the Assignment Stage).

4.240 Where Winning Bidders participated as an Alliance in the Assignment Stage, the Upfront Fee for the Leading Member will be the sum of its Base Price plus any Additional Price for the Alliance; the Upfront Fee for any other Alliance member will be its Base Price. Therefore, Alliance members will need to agree internally any apportionment of the Alliance's Additional Price amongst themselves. Notwithstanding the Leading Member's responsibility to pay the Additional Price for the Alliance, members will be jointly and severally liable for the payment of any Additional Price for the Alliance.

4.241 Each Winning Bidder must pay its Upfront Fee in accordance with the Notification & Grant Stage as set out in Section 3.7.

Chapter 5

5 Legal Terms and Conditions

5.1 Important Notice

- 5.1 [The text of this paragraph has no effect in this draft Information Memorandum as it applies only to the final Information Memorandum] This Information Memorandum is being made available by ComReg solely for the purposes of assisting prospective Bidders in deciding whether they wish to proceed to participate in the Award Process in accordance with the terms of this Information Memorandum and to assist prospective Bidders and their agents in preparing for and understanding the Award Process. This Information Memorandum may not be used for any other purpose and, when using it for the stated purposes above, prospective Bidders are strictly subject to the terms and conditions set out in this Information Memorandum.
- 5.2 In this Information Memorandum an “**Interested Party**” shall have the meaning ascribed to this expression in the Glossary to this Information Memorandum.
- 5.3 To the extent permitted by law, no representation or warranty or undertaking (express or implied) is or will be made by ComReg or its personnel or agents and no liability or responsibility is or will be accepted by ComReg or its personnel or agents as to:
- i. the adequacy, accuracy or completeness of the information, opinions or statements (or the basis on which they are premised) contained in this Information Memorandum or in any of the documents referred to herein;
 - ii. any omissions, errors or misstatements contained in this Information Memorandum or in any documents referred to herein;
 - iii. the software used to implement the Award Process’ electronic Auction system; and
 - iv. the contents of any written or oral information made available by ComReg or its personnel or agents to Interested Parties or any third party relating to the Award Process.
- 5.4 To the extent permitted by law, any liability and/or loss of any nature arising from this Information Memorandum and its use by Interested Parties is expressly disclaimed.
- 5.5 Without prejudice to the foregoing and to the extent permitted by law, ComReg’s aggregate liability for all losses or damages or any nature arising

from delayed access to Lots is expressly limited to the refunds or adjustments of Licence Fees as set out in Section 2.4.7 of this Information Memorandum.

- 5.6 To the extent permitted by law, Interested Parties shall not be entitled to rely on the contents of this Information Memorandum to argue that they have rights or expectations, pursuant to legitimate expectation, estoppel or other related legal arguments, that:
- i. ComReg will not exercise any of its rights reserved in Section 5.2.6 of this chapter;
 - ii. they will be awarded any spectrum at the end of the Award Process;
 - iii. bidding in any particular manner will, of itself, guarantee success in the Award Process;
 - iv. ComReg will during the term of any Licence granted pursuant to the Award Process modify the terms of such Licence, or the regulations affecting such Licence, in any manner and, without prejudice to the generality of the foregoing, that ComReg will permit the use of any particular new technologies in the spectrum rights of use licensed in the Award Process; or
 - v. ComReg will reassign rights of use of spectrum licensed pursuant to the Award Process in any particular way at the termination of any Licences granted pursuant to the Award Process.
- 5.7 While ComReg, its personnel and agents intend to implement the Award Process, ComReg, its personnel and agents give no indication or commitment and make no statements as to the possible outcomes of this Award Process.
- 5.8 In accessing this Information Memorandum, Interested Parties acknowledge that they will be solely responsible for their own assessment of any matter connected with the Award Process to which the Information Memorandum relates. Interested Parties are responsible for forming their own views, deciding if they will partake in the Award Process, completing the relevant Application Forms and calculating any Bids.
- 5.9 All dates in this Information Memorandum are, unless specifically stated to the contrary, target or indicative dates only and may be subject to change at the sole discretion of ComReg acting subject to its statutory functions, objectives and duties.
- 5.10 Whilst the information in this Information Memorandum has been provided in good faith, it does not purport to be comprehensive nor to have been independently verified. Interested Parties should form their own views. ComReg reserves the right to amend this Information Memorandum and any

information or documents contained or referred to herein in accordance with paragraph 5.32 of this Chapter 5.

- 5.11 Nothing in this Information Memorandum is, or should be relied upon as, a promise or representation as to ComReg's ultimate decision in relation to the award of a Licence or Licences. ComReg reserves the right to suspend or not to proceed with the Award Process or any part thereof and may terminate the Award Process or any part thereof at any time and, in such event, ComReg shall not be liable, howsoever, to any Interested Party save for ComReg's obligations to return Deposits in certain circumstances. ComReg also reserves the right, in accordance with law, to change any procedure in relation to the Award Process. ComReg reserves the right to reject any and all Applications received as part of the Award Process or not to select any Applicant for the grant of a Licence. Interested Parties are recommended to seek their own financial, legal and technical advice at their own cost in relation to the Award Process. The publication of this Information Memorandum or any information made available in connection with the Award Process does not constitute nor is to be taken as constituting the giving of financial, legal, technical or investment advice by ComReg, its personnel or agents.
- 5.12 Any conflict of interest or potential conflict of interest – including but not limited to any conflict arising under the rules set out in Sections 3.3.4 and 3.3.5 of this Information Memorandum - must be disclosed to ComReg by any Interested Party or by any prospective or actual Bidder as soon as such conflict of interest or potential conflict of interest becomes apparent. The appropriate course of action to be taken in such event shall be decided upon by ComReg, at its discretion acting subject to its statutory functions, objectives and duties.
- 5.13 This Information Memorandum should be read and construed in accordance with the previous documentation issued by ComReg as part of this process including:
- Consultation 14/101;
 - Consultation 15/70;
 - Response to Consultation and Draft Decision 15/140; and
 - [Response to Consultation and Decision 16/XX]

Noting that the consultation process has been complex and the views of ComReg and the respondents have evolved over time, in the event of any conflict between the views expressed in any of the consultation process documents the view expressed in the later document shall take precedence. Where any draft document, for instance a draft statutory instrument, draft

decision or draft Information Memorandum has been supplanted by a finalised document, the draft document should be discounted entirely. In the event of any conflict or inconsistency between the consultation process documents and this Information Memorandum, this Information Memorandum shall take precedence.

- 5.14 No legal obligations on the part of ComReg to grant any Licensees will arise unless and until the granting and commencement of a Licence or Licences by ComReg following the completion of the Award Process.
- 5.15 The legal and contractual obligations described in this Chapter of the Information Memorandum are imposed on Interested Parties who are furnished with or who download this Information Memorandum and ComReg reserves the right to enforce such obligations. Copyright (and any other intellectual property rights) in this Information Memorandum vest and remain in ComReg and its licensors and recipients of this document including Interested Parties shall not use or copy this Information Memorandum other than in pursuit of the purposes described in paragraph 5.1 above, without the permission of ComReg. Applicants who submit Applications to enter the Award Process shall be obliged to express their acceptance to the provisions of this Chapter as part of the Application process (see Section 3.3 and Annex 3).
- 5.16 This Information Memorandum and all matters arising out of or in connection with or in any way related to this Information Memorandum shall be governed and construed in accordance with the laws of Ireland and shall be subject to, and Interested Parties hereby expressly submit to, the exclusive jurisdiction of the Irish courts.

5.2 Additional Conditions

5.2.1 Open Applications

- 5.17 All Applications (including Applications which do not ultimately become qualifying Applications) by Applicants comprise offers which must remain open and valid for six (6) months from the date of submission with the exception that an Applicant may withdraw its Application on or before [a date will be specified in the final Information Memorandum]. Applications are contractually binding offers and the submission of an Application shall mean the Applicant unconditionally offers to agree to:
- vi. the provisions of this Chapter;
 - vii. the Applicant Declaration which forms part of the Application (see Annex 3); and
 - viii. the Auction Rules and Transition Rules described in Section 5.2.3 below.

- 5.18 Offers shall be deemed to be accepted (meaning that an agreement covering (i), (ii) and (iii) above has been formed between the Applicant and ComReg) once they are submitted to ComReg in accordance with the Information Memorandum and an acknowledgment of receipt has been issued by ComReg even if they subsequently do not become qualifying Applications.
- 5.19 All Applications will be assessed in accordance with Section 3.3 of this Information Memorandum.
- 5.20 For the avoidance of doubt, the contract described in this Section 5.2.1 is in addition to and not in substitution for the contract described in paragraph 5.15 above, which binds all parties in receipt of this Information Memorandum to the provisions of this Chapter. In the event that an Applicant withdraws its Application on or before [a date will be specified in the final Information Memorandum], such Applicant will remain bound by the contract described in paragraph 5.15.

5.2.2 Canvassing

- 5.21 Interested Parties must not canvass directly or indirectly any staff or the Commissioners of ComReg or any person associated in any way with the Award Process. Failure to comply with this requirement may result in an Application being deemed invalid or disqualification from the Award Process. This does not restrict an Applicant from making any representations through the communications channels specified in this Information Memorandum.

5.2.3 Auction and Transition Rules / Bidder behaviour / Improper Influence

- 5.22 The Award Process and Auction Rules described in this Information Memorandum and its Annexes shall form part of the agreement between ComReg and Applicants described in Section 5.2.1 above and by submitting an Application, the Applicant agrees to be bound by and to comply with the Auction Rules and the Transition Rules. Without prejudice to the detailed Auction Rules around Bidder behaviour and for the avoidance of doubt, any attempt by Interested Parties to improperly influence, in any way, the Award Process, may result in the disqualification of that/those Interested Parties or, where the party engaging in such behaviour is an agent that agent's principal. Non-exhaustive examples of such improper influence are collusion, price fixing, bid rigging, bid rotation, market division or breach of Award Process confidentiality.

5.2.4 Publicity information disclosure

- 5.23 No publicity whatever regarding this Information Memorandum and/or Award Process is permitted unless and until ComReg has consented in writing, at its discretion, to the relevant communication. For the avoidance of doubt, this publicity prohibition shall prevent Interested Parties and/or their agents from making any public statements or statements likely to be made public whatsoever concerning the Award Process and/or this Information Memorandum.
- 5.24 ComReg may issue such communications and generate such publicity in relation to the Award Process as it considers appropriate and without notice to Interested Parties. ComReg, subject to its guidelines on the treatment of Confidential Information¹¹⁷, in particular, has the right to publicise or otherwise disclose any information regarding the Award Process, the identity of Applicants (including the identity of their members, sub-contractors and agents), successful Bidders or the granting of related Licence or Licences at any time.
- 5.25 Before, during or after the Award Process ComReg may receive a request made pursuant to applicable law (including the Freedom of Information Act 2014) to disclose particular information. ComReg is not liable or responsible under any circumstances for any losses, claims or damages any kind incurred as a result of the good faith disclosure of any information purportedly pursuant to law, which occurs before, during or after the Award Process. It is the sole responsibility of a Bidder to determine if any of the information it supplies in the course of the Award Process should not be disclosed because of its sensitivity.

5.2.5 Errors

- 5.26 If Interested Parties discover any error or omission or lack of clarity in this Information Memorandum, such Interested Parties must immediately notify ComReg in writing of such error, omission or lack of clarity which will be resolved by ComReg in such manner as it considers appropriate.

5.2.6 No Warranty and Termination

- 5.27 The publication of this Information Memorandum does not warrant or imply that any Interested Party will be awarded a Licence or Licences.
- 5.28 ComReg will act at all times to a standard expected of a public body and in line with its statutory functions, objectives and duties. ComReg reserves the right, for any reason whatever at its discretion:

¹¹⁷ ComReg Guidelines on the treatment of confidential information, Document 05/24.

- to reject Applications which do not comply with the Auction Rules;
- not to proceed with any part of the Award Process described in this Information Memorandum;
- not to provide an Interested Party with any additional information;
- not to implement any arrangement contemplated by this Information Memorandum;
- to withdraw from any discussions or consultation which ComReg might engage or have engaged in;
- to suspend the Award Process at any time;
- not to award any Licence or Licences;
- to procure the award of a Licence or Licences by alternative means; and/or
- to terminate the Award Process at any time.

5.2.7 Own Costs

5.29 Each Interested Party shall be fully responsible for the entirety of all expenses and/or costs it incurs in the preparation or submission of an Application or in participating in the Award Process. Save as otherwise expressly stated in this Information Memorandum, ComReg is not responsible for and will not pay for any expense or cost incurred or loss suffered by an Interested Party in the preparation or submission of its Application, its participation in the Award Process (including mock Auctions and workshops) or otherwise. Further, ComReg is not responsible for any travel or accommodation costs incurred by Interested Parties unless previously agreed in writing by ComReg.

5.30 This applies in all cases, including if the Award Process is suspended or terminated for any reason whatsoever.

5.2.8 Waiver

5.31 The failure or neglect by ComReg to enforce any provision of the Information Memorandum is not (and will not be deemed to be) a waiver of that provision and does not prejudice ComReg's right to take subsequent action in respect of such provision.

5.2.9 Amendments

5.32 ComReg reserves, at its discretion, the right, at any time until the conclusion or termination of the Award Process, to amend or modify this Information Memorandum or Award Process in any respect, including the shortening or

Extension of any and all timelines, by way of clarification, addition, deletion or otherwise. ComReg will inform Interested Parties of any such amendments or modifications, if appropriate.

5.2.10 Conclusion of Process

- 5.33 The conclusion of the Award Process as set out in Section 4.4, shall be without prejudice to the accrued rights, and obligations of ComReg and Interested Parties pursuant to this Chapter 5. The provisions of this Information Memorandum shall continue to bind ComReg and/or Interested Parties, to the extent that each of these provisions has become applicable to an Interested Party during the Award Process, after the conclusion of the Award Process.
- 5.34 Additional continuing obligations are imposed on Applicants pursuant to the contract formed by Section 5.2.1 of this Chapter.

Chapter 6

6 Submitting Comments and Next Steps

6.1 Submitting Comments

- 6.1 All input and comments are welcome. However, in order to analyse responses more efficiently respondents are requested to, where possible, please cross-reference their comments to the relevant section/paragraph number in each chapter and annex in this document.
- 6.2 Respondents are also kindly requested to set out detailed reasoning and all supporting information.
- 6.3 The five week period for comment will run until 17:00 on Wednesday 20 April 2016, during which time ComReg welcomes written comments on any of the issues raised in this paper.
- 6.4 ComReg has chosen a longer response period of five weeks considering that there are non-Working Days during this period.
- 6.5 Responses must be submitted in written form (post or email) to the following recipient, clearly marked —Submissions to ComReg 16/22:

Mr Joseph Coughlan
Commission for Communications Regulation
Irish Life Centre
Abbey Street
Freepost
Dublin 1
Ireland

Email: marketframeworkconsult@ComReg.ie

- 6.6 ComReg would request that electronic submissions be submitted in an unprotected format so that they can be included in the ComReg submissions document for electronic publication.

6.7 ComReg appreciates that respondents may also wish to provide Confidential Information in their responses. In order to promote openness and transparency, ComReg will publish all respondents' submissions to this consultation as well as all substantive correspondence on matters relating to this document, subject to the provisions of ComReg's guidelines on the treatment of Confidential Information¹¹⁸. In that regard, respondents are requested to provide both a confidential and non-confidential version of their submissions, including supporting reasoning as to why they consider particular material to be confidential. Alternatively, respondents are requested to place confidential material in a separate annex to their response, again with supporting reasoning in that annex as to why such material is considered to be confidential.

6.2 Next Steps

- 6.8 ComReg welcomes all submissions received to Document 15/140, Response to Consultation and Draft Decision, and will fully consider and address all comments in a further response to consultation before proceeding to publish a Final Decision with respect to the 3.6 GHz Band award.
- 6.9 Further, to the extent that ComReg receives submissions relating to the draft Information Memorandum, ComReg will consider and proceed to issue a final Information Memorandum for the proposed 3.6 GHz Band award.
- 6.10 While ComReg cannot provide further clarity on the overall timelines at this juncture, as this will depend, among other things, on the nature of responses received, ComReg would reiterate that it remains conscious of the expiry of existing 3.6 GHz licences in July 2017 and is working towards providing clarity on the future of the 3.6 GHz Band as far as possible significantly in advance of this date.

¹¹⁸Document 05/24 - Response to Consultation - Guidelines on the treatment of confidential information - March 2005.

Annex 1: Glossary

A1.1 Definitions

- A 1.1 The definitions in this glossary shall apply to this draft Information Memorandum as a whole save that they shall not apply to the final Draft Regulations in Annex 2.
- A 1.2 Where a term in this glossary is defined by reference to a definition in a section or paragraph and an explanation of that term is provided in this glossary, the latter explanation is for convenience only and reference should be made to the appropriate part of the document for the definitive meaning of that term in its appropriate context.
- A 1.3 Any reference to any provision of any legislation shall include any modification re-enactment or Extension thereof.
- A 1.4 Any reference to an Interested Party shall include that Interested Party's successors and assigns.
- A 1.5 The headings contained in this draft Information Memorandum are inserted for convenience of reference only and shall not in any way form part of or affect or be taken into account in the construction or interpretation of any provision of this draft Information Memorandum or the Annexes or Schedules hereto.
- A 1.6 Terms defined in this draft Information Memorandum shall, unless the context otherwise requires or admits, have the meaning set out below:

3.6 GHz Band	The radio frequency spectrum in the range 3 400 MHz to 3 800 MHz but excluding the Guard Band Spectrum and the State Services Spectrum;
3.6 GHz Band Liberalised Use Licence	A Licence issued under Schedule 1 of the Regulations (as may be amended prior to enactment) in the form set out in Annex 2 which entitles the holder to use certain specific Lots of spectrum in the 3.6 GHz Band in one or more than one Region, subject to the terms and conditions set out therein.
3.6 GHz Band Preparatory Licence	A Licence issued under Schedule 3 of the Regulations (as may be amended prior to enactment) in the form set out in Annex 2 which entitles the holder to possess and install Apparatus designed or configured for operation in certain Lots of spectrum in the 3.6 GHz Band in one or more than one Region, but which

	does not permit any wireless telegraphy transmissions, subject to the terms and conditions set out therein.
3.6 GHz Band Spectrum Lease Licence	A Licence issued under Schedule 2 of the Regulations (as may be amended prior to enactment) in the form set out in Annex 2 which entitles the holder to use certain specific Lots of spectrum in the 3.6 GHz Band in one or more than one Region, subject to the terms and conditions set out therein.
3.6 GHz Band Transition Protected Licence (TPL)	A Licence issued under Schedule 4 of the Regulations (as may be amended prior to enactment) in the form set out in Annex 2 which entitles the holder to keep and have possession of Apparatus for the provision of FWA services in one or more than one FWALA Service Area, subject to the terms and conditions set out therein.
3.6 GHz Band Transition Unprotected Licence (TUL)	A Licence issued under Schedule 5 of the Regulations (as may be amended prior to enactment) in the form set out in Annex 2 which entitles the holder to keep and have possession of Apparatus for the provision of FWA services in one or more than one FWALA Service Area on a Non-Interference and Non-Protected Basis, subject to the terms and conditions set out therein.
A-Lot	A single 25 MHz frequency-specific Lot using frequency 3 410 MHz – 3 435 MHz in each region.
Activity	In a given Primary Bid Round, the number of Eligibility Points Associated with the Bid submitted by a Bidder in that round.
Activity Rules	Rules governing the Bids that each Bidder can make in successive rounds based on Bids submitted by the Bidder in previous rounds and their Associated Activity.
Additional Price	The price Associated with the assignment of B-Lots as a result of the Assignment Stage of the Award Process. This price will be determined in the Assignment Stage using an Opportunity Cost pricing methodology, and will be no greater than the amount Bid by the winning Assignment Bidder for these specific Lots.

Aggregate Demand	The sum of demand for Lots in a Lot Category expressed by all Applicants at the Application Stage or by all Bidders in a Primary Bid Round in the Auction.
Alliance	<p>A group of Winning Bidders who are permitted to coordinate at the beginning of the Assignment Stage to participate together as one Assignment Bidder and be presented with Assignment Options in the Assignment Round to Bid on as if it were a single Winning Bidder.</p> <p>Assignment Options would be generated for the Alliance as a whole, as if the Alliance members were a single Winning Bidder (winning all frequency-generic Lots awarded to individual the Alliance members in the Main Stage).</p>
Alliance Notification Form	<p>The Alliance Notification Form, as set out in Annex 4 of this Document, to be submitted by Winning Bidders to ComReg wishing to notify ComReg of the formation of an Alliance consisting of:</p> <ul style="list-style-type: none"> • Part 1: Administrative Information • Part 2: Alliance Declaration.
Apparatus	In relation to Licences means Apparatus for wireless telegraphy as defined in Section 2 of the Act of 1926, for terrestrial systems capable of providing Electronic Communications Services in the 3.6 GHz Band
Applicant	An Entity that submits an Application to ComReg to be assigned at least one Lot of the Lots being made available in the Award Process.
Applicant Declaration	Part 2 of the Application Form.
Application	<p>The Application to participate in the Award Process made by an Applicant.</p> <p>A valid Application is a binding commitment to pay the sum of the Reserve Prices (and SUFs) for all Lots contained in the Package of Lots specified on the Applicant's Lot Application Form.</p>

Application Date	The date by which Interest Parties must submit an Application to participate in the Award Process together with the required monetary Deposit.
Application Form	The Application Form, as set out in Annex 5 of this Document, to be delivered as part of an Application consisting of: <ul style="list-style-type: none"> • Part 1: Administrative Information • Part 2: Applicant Declaration • Part 3: Initial Bid Form • any supporting documentation required to be delivered including Ownership Structure
Application Stage	The stage of the Award Process described in Section 3.3 of this Information Memorandum, which runs from the day on which the Information Memorandum is published up to and including the Application Date.
Assignment Bidder	An Assignment Bidder refers to each individual entity considered for determining the Provisional Frequency Plan in the Assignment Stage. An Assignment Bidder is either: <ul style="list-style-type: none"> • a single Winning Bidder participating independently in the Assignment Stage; or • a group of Winning Bidders operating as an Alliance in the Assignment Stage.
Assignment Option	The set of unique feasible assignments that could be assigned to each Assignment Bidder. The number of Assignment Options available to an Assignment Bidder will be less or equal to the possible number of frequency plans.
Assignment Round	The single round of bidding in the Assignment Stage, during which Assignment Bidders may submit one or more Bids to be assigned specific Lots within the frequency range 3 475 MHz – 3 800 MHz in each Region.
Assignment Stage	The stage of the Auction where Assignment Bidders are assigned specific Lots in accordance with the number of Lots they have won either from their Initial Bid or from the results of the Main Stage of the Award.

Associate	As defined in Annex 8 of the Information Memorandum.
Associated Bidders	As defined in Annex 8 of the Information Memorandum.
Auction	The mechanism within the Award Process used to determine Winning Bidders and Winning Prices in the event that there is insufficient supply in at least one Lot Category to meet the demand expressed by Applicants for Lots, overall and/or for specific Lots, at the stated Reserve Prices at the Application Stage of the Award Process.
Auction Day	A day upon which the one or more rounds of the Auction are scheduled to run.
Auction Rules	Rules and procedures relating to the Auction, as presented in this Information Memorandum and its Annexes.
Auctioneer	ComReg.
Authorised Agent	A person who the Applicant has notified ComReg is entitled to bind an Applicant contractually in relation to the Award Process.
Award Process	The overall process through which it is intended that rights of use of spectrum will be awarded in the 3.6 GHz Band in the event that at least one Applicant submits a valid Application for at least one Lot at the stated Reserve Prices.
B-Lot	Sixty five (65) 5 MHz frequency-generic Lots in the 3 475 MHz – 3 800 MHz frequency range in each Region.
Base Price	The price to be paid by a Winning Bidder for the Package of Lots assigned to it in the Main Stage of the Auction (determined using a second price rule).
Bid	A binding offer to buy a Package of Lots for a specific monetary amount (the Bid Amount).
Bid Amount	The monetary amount Associated with an offer made by a Bidder for a specified Package of Lots.

Bidder	An Interested Party that has both submitted an Application and Associated Initial Deposit to ComReg to be assigned a Package of Lots in the Award Process (thereby becoming an Applicant) and had its Application approved by ComReg, qualifying it to either be assigned such Lots (where a Main Stage of the Award Process is not required) or to compete for Packages of Lots in the Auction.
Bidding Group	A Bidder and its Connected Persons as defined in Annex 8 of the Information Memorandum.
Bidder Materials	Information made available to Qualified Bidders to regarding the EAS
Centre Point	The geographic location at the centre of an Existing Licence to which a 3.6 GHz Band Transition Protected Licence (TPL) or 3.6 GHz Band Transition Unprotected Licence (TUL) relates as the case may be.
Chain Bid	A Bid at a non-discretionary level for a Package of Lots previously subject to the Bidder's Initial Bid or a Package of Lots subject to a Primary Bid in a Primary Bid Round where the Bidder dropped Eligibility and which is submitted alongside a Relaxed Primary Bid.
Communications Provider	A provider of electronic communications networks or services as those terms are defined in the Framework Regulations.
Competition Cap	Explicit maximum limits set on the amount of spectrum that any one Bidder can be awarded in the Award Process. All Bids are subject to a Competition Cap of 150 MHz in each Region. The Competition Cap only applies for the duration of the Award Process.
Confidential Information	Details of what may constitute Confidential Information for the purposes of this Award Process are provided in Section 3.3.5.
Connected Person	Shall have the meaning ascribed to it in Annex 8 of the Information Memorandum.
Constrained Package	Any Package of Lots subject to the Relative Cap in the Supplementary Bids Round.

Constraining Package	<p>The Package of Lots that originated the Relative Cap and is either the Package of the Primary Bid that led to the Bidder losing Eligibility or where a Bidder wishes to Bid above Initial Eligibility, the Package of the Bidders Initial Bid.</p> <p>Shall have the meaning ascribed to it in Chapter 3 of the Information Memorandum.</p>
Constraining Price Differential	The difference in the price between the Constrained Package of Lots and the Constraining Package of Lots at the time in which the Bidder chose to make that Bid for the Constraining Package
Controlled Person	As defined in Annex 8 of the Information Memorandum.
Controlling Person	As defined in Annex 8 of the Information Memorandum.
CPI	Consumer Price Index as published by the Central Statistics Office.
Deposit	<p>A monetary amount submitted by an Applicant as part of its Application to be assigned Lots in the Award Process. For an Application to be valid, the amount of an Applicant's Deposit must be equal to the sum of the Reserve Prices of Lots specified by the Applicant in its Lot Application Form.</p> <p>If a Main Stage of the Auction is required, ComReg may require that this Deposit be increased, as described in this Information Memorandum, during the Primary Bid Rounds to a level no greater than the value of the Bidder's highest Bid at the point in the Auction at which it increases such Deposit requirements.</p>
Deposit Call	A notice given by ComReg to one or more Bidders that they need to increase their Deposits to at least the amount specified by ComReg in its notice.
Draft Regulations	Means the Wireless Telegraphy Draft Regulations as set out in Annex 2 of this document.
Drive Test Measurement	Measurements collected using a motor vehicle

Electronic Auction System (EAS)	The system used for running the Auction. Specifically, this will be used by Bidders to check and submit Bids during the Main Stage (where required) and the Assignment Stage of the Auction (except in exceptional circumstances).
Eligibility	<p>The extent of a Bidder's capacity to Bid for Lots in the current round of the Auction. This is expressed as a number of Eligibility Points and is calculated for each Lot Category in each Region and is equal to:</p> <ul style="list-style-type: none"> • In the first Primary Bid Round, the number of Eligibility Points Associated with a Bidder's Application, as specified on its Lot Application Form (its Initial Eligibility); and • In subsequent Primary Bid Rounds, the number of Eligibility Points Associated with a Bidder's Bid for Lots in the previous round.
Eligibility Points	The numerical expression of a Bidder's ability to make further Bids.
Existing Licence	A Licence currently held under the Wireless Telegraphy (Fixed Wireless Access Local Area Licence) Regulations, 2003 (S.I. No. 79 of 2003).
Existing Licensee	A holder of an Existing Licence.
Extension	The increasing of the round end time, extending the deadline for submission of a Bid in the round (or Bids in the case of the Supplementary Bids Round) by up to 30 minutes for the Bidder (or Bidders) that have utilised an Extension right in the round. An Extension right of a Bidder will be exercised automatically in a round if the Bidder has at least one Extension right remaining and has not submitted a Bid (or Bids in the Supplementary Bids Round) by the scheduled end time of the round.
Final Frequency Plan	The frequency assignments established following the Negotiation Phase.
Final Price Cap	A cap applying to all Supplementary Bids (except for a Final Primary Package which is non-Zero or a Relaxed Primary Bid) limiting the maximum Bid Amount for a Package of Lots to the highest Bid made for the Final Primary Package plus the difference in prices between the Package of Lots in question and

	the Final Primary Package at the Round Prices in the final Primary Bid Round.
Final Primary Package	The Package of Lots Bid for by a Bidder in the final Primary Bid Round.
FWA or Fixed Wireless Access	The wireless provision of Electronic Communications Services between a single base station at a fixed location and multiple subscriber terminal stations at fixed locations where the base station is connected to an Electronic Communications Network
FWALA Service Area	The geographic area defined by way of a circle around the Centre Point with a maximum radius of 20km from that Centre Point
General Authorisation	An authorisation for an undertaking to provide an electronic communications network or service under and in accordance with Regulation 4 of the Authorisation Regulations.
Guard Band Spectrum	Radio frequency spectrum in the range 3 400 MHz to 3 410 MHz.
Information Memorandum	This Information Memorandum including all of the Annexes and Schedules hereto.
Initial Bid	A Bidder's Initial Bid is the Package defined by the Lots specified by the Bidder on its Initial Bid Form and the corresponding Bid Amount calculated as the sum of the Reserve Prices for the Lots specified on the Bidder's Initial Bid Form.
Initial Bid Form	Part 3 of the Application Form.
Initial Eligibility	The number of Eligibility Points that a Bidder has in the first Primary Bid Round. This is based on the number of Eligibility Points Associated with the Package of Lots the Bidder specified on its Application Form, submitted to ComReg at the Application Stage.
Indexation	The adjustment of prices for inflation. The index of inflation that will be used will be the Consumer Price Index as published by the Central Statistics Office.

Insider	Shall have the meaning ascribed to it in Section 3.3.5
Interested Party	Includes, to the extent that the context requires or admits, any of the following: <ul style="list-style-type: none"> • a respondent to the draft Information Memorandum [this document]; • a prospective Bidder; • an Applicant; • a Qualified Bidder; or • an agent of any of the foregoing.
Leading Member	The Alliance member designated by the Alliance to submit Assignment Bids or decisions for the Alliance during the Assignment Stage
Lease	The leasing by a Licensee (“the Lessor”) of some or all of a right of use granted under a 3.6 GHz Band Liberalised Use Licence to another party (“the Leaseholder”) for a period less than the entire remaining duration of the right of use, after which the right of use reverts to the Lessor.
Licence	A 3.6 GHz Band Liberalised Use Licence, a 3.6 GHz Band Preparatory Licence, a 3.6 GHz Band Transition Protected Licence (TPL), a 3.6 GHz Band Transition Unprotected Licence (TUL), a 3.6 GHz Band Spectrum Lease Licence or an Existing Licence as the case may be and “Existing Licensee” and “Licensee” shall be construed accordingly.
Lot	A 5 MHz or 25 MHz block of spectrum in the 3.6 GHz Band.
Lot Category	Lot Categories A1-A9 and B1-B9, two Lot Categories for each Region, splitting the A-Lots and B-Lots available. As further defined in Section 3.1 of the draft Information Memorandum.
Main Stage	The stage of the Auction that determines the number of Lots assigned to different Bidders and the Associated prices in the case where there is excess demand for Lots in any of the Lot Categories expressed by Qualified Bidders at the Application Stage. This consists of a number of Primary Bid Rounds and a Supplementary Bids Round.

Negotiation Phase	The two week period allowed after the Assignment Round where successful Assignment Bidders can attempt to agree an alternative frequency plan.
Non-Interference and Non-Protected Basis	The use of Apparatus is subject to no Harmful Interference being caused to any Radiocommunication Service, and that no claim may be made for the protection of Apparatus used on this basis against Harmful Interference originating from Radiocommunication Services.
Notification and Grant Stage	The stage of the Award Process during which Upfront Prices are paid by Winning Bidders, less their Deposits (and Rebates where applicable), and Licences are granted to Winning Bidders and Deposits are returned to Unsuccessful Bidders.
Opportunity Cost	Shall have the meaning ascribed to it in paragraph 4.151
Ownership Structure Document	Shall have the meaning ascribed to it in Section 3.3.2
Package of Lots / Package	<p>A selection of one or more Lots:</p> <ul style="list-style-type: none"> • Specified in a Bidder's Application; • Bid for in one or more Primary Bid Rounds; and/or • Bid for in the Supplementary Bids Round. <p>Such a selection of Lots will only be considered in its entirety, in combination with the Associated Bid Amount, in determining the Winning Combination of Bids and Associated Base Prices.</p>
Payment Deadline	The last day upon which Winning Bidders can increase their Deposits to the level of their Upfront Fee in order to receive 3.6 GHz Band Liberalised Use Licences for the Lots assigned to them within the Award Process.
Price Increment	The increase of the price of Lots in a Lot Category from one round of the Auction to the next based on demand expressed for Lots in that Lot Category in the previous Primary Bid Round (or in the case of the Price Increment applicable to Reserve Prices for the first Primary Bid Round, demand expressed by Qualified Bidders at the Application Stage).

Primary Bid	A Bid made by a Bidder in a Primary Bid Round.
Primary Bid Round	A round of the Main Stage during which Bidders each have the opportunity to submit a single Bid for a Package of Lots for a Bid Amount equal to the sum of the Round Prices Associated with each Lot within the Package of Lots upon which it submits a Bid.
Provisional Frequency Plan	<p>A specific frequency assignment for each Winning Bidder, or Alliance of Winning Bidders, awarded frequency-generic B-Lots and is determined by the outcome of the Assignment Round.</p> <p>If an Assignment Round is not required, the Provisional Frequency Plan will be the unique frequency assignments for each Assignment Bidder.</p>
Qualified Bidder	An Applicant who, following consideration of its Application by ComReg, has been informed, in accordance with Section 3.4, that its Application is compliant and that it is entitled to participate in the Award Process.
Qualification Stage	A stage of the Award Process during which ComReg assesses Applications to be assigned Lots in the Award Process submitted before the deadline for Applications, evaluates which Applications are valid and determines which Applicants qualify to become Qualified Bidders in the Award Process. Based on the level of demand for Lots by Qualified Bidders, these Bidders will either be assigned the Lots in their respective Applications or Bid for Lots in the Main Stage of the Auction.
Region	Any of the nine distinct non-overlapping regional areas of the State as defined in Section 2.2 where A-Lots and B-Lots are available for assignment.
Relative Cap	A cap applying to a Supplementary Bid, which limits the Bid Amount for a Package of Lots as described in Section 4.2.3
Relaxed Primary Bid	A Primary Bid submitted by a Bidder whose Activity exceeds the Bidder's Eligibility to Bid in one or more Regions but is permitted because it satisfies certain specified constraints. These conditions surrounding the submission of Relaxed Primary Bids

	and the Associated bids they may require in order to preserve relative preferences are detailed in Section 4.2.
Reserve Price	The minimum Bid for a Lot for such a Lot to be assigned. This minimum Bid might be met based on demand expressed by Applicants at the Application Stage or in the Main Stage of the Auction.
Round Price	The Price per Lot within a specified Lot Category in a given round.
Round Schedule	The scheduled start and end time of a round.
Spectrum Usage Fees (SUFs)	Annual Fees which a successful Bidder must pay in respect of spectrum rights of use assigned in the Award Process.
State Services Spectrum	Radio frequency spectrum in the range 3 435 MHz to 3 475 MHz.
Supplementary Bid	A Bid submitted in the Supplementary Bids Round for a Package of Lots for a Bid Amount specified by the Bidder. The specified Bid Amount will be subject to a minimum (floor) and, in some cases, a maximum (cap), as set out in the Activity Rules for the Auction.
Supplementary Bids Round	A single round of bidding during which each Bidder can submit multiple Bids, each for a Package of Lots for a Bid Amount specified by the Bidder. The specified Bid Amount for each Supplementary Bid submitted in this round will be subject to a minimum (floor) and, in some cases, a maximum (cap), as set out in the Activity Rules for the Auction.
Transition Activities	Adjustments as maybe required by Existing Licensees to their existing networks and may involve relocating or retuning of existing spectrum assignments.
Transition	Relocating or retuning of existing spectrum assignments
Transition Plan	A plan which outlines interim milestones for retuning and relocation activities for Existing FWALA Licensees.

Transition Plan Proposals	Formulated by Winning Bidders and Existing Licensees who have agreed to abide by the Transition Rules.
Transitional Rules	Rules regarding Transition, as set out in Section 3.8 of this document
Unsuccessful Bidder	An Interested Party that submits an Application to ComReg to be assigned Lots in the Award Process, is declared a Qualified Bidder but is not assigned any Lots in the Auction.
Upfront Price/Upfront Fee	The sum of the Base Price and any Additional Prices to be paid by a Winning Bidder for the spectrum assigned to it within the Award Process.
Valid Bid	A Bid submitted within the Auction or by way of the Lot Application Form that is in accordance with the Auction Rules.
Winning Bid	A Bid in respect of which a Winning Bidder is assigned at least one Lot in the Winning Combination.
Winning Bidder	A Bidder that wins at least one Lot in the Award Process.
Winning Combination of Bids	The optimum allocation of Lots among Bidders.
Working Day	Working Day” means a day which is not a Saturday or Sunday or a public holiday as defined in section 2(1) of the Organisation of Working Time Act 1997.
Zero Bid	<p>A Bid for no Lots with an Associated Bid Amount of zero. Entry of a Zero Bid in the Primary Bid Rounds does not prevent the entry of Supplementary Bids.</p> <p>A Zero Bid will be submitted automatically in the case that a Bidder fails to submit a Bid within the Round Schedule of a round, or within 30 minutes of the scheduled end time of a round where the Bidder had at least one Extension right at the beginning of the round.</p>

A1.2 European and Governmental Bodies, Regulatory and Standardisation Organisations

ComReg	Commission for Communications Regulation
EC	European Commission
EU	European Union

A1.3 Primary and Secondary Legislation

SI	Statutory Instrument
2002 Act	The Communications Regulation Act 2002 (No. 20 of 2002), as amended ¹¹⁹
Act of 1926	The Wireless Telegraphy Act 1926 (No. 45 of 1926) as amended
Authorisation Regulations	European Communities (Electronic Communication Networks and Services) (Authorisation) Regulations 2011 (S.I. No 335 of 2011)
Framework Directive	Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services, as amended
Framework Regulations	European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No 333 of 2011)
The Minister	Minister for Communications, Energy and Natural Resources

¹¹⁹ Includes the Communications Regulation (Amendment) Act 2007 and the Communications Regulation (Premium Rate Services and Electronic Communications Infrastructure) Act 2010.

Specific Regulations	Specific Regulations has the same meaning as set out in Regulation 2 of Framework Regulations 2011 (S.I. No. 333 of 2011)
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A1.4 Glossary of Technical Terms

Combinatorial Auction (CCA)	Clock	An Auction format that progresses in two distinct phases. The first phase consists of a number of open rounds, which provide for price discovery (the 'Primary Bid Rounds'). This is followed by a single round of bidding (the 'Supplementary Bids Round') during which Bidders can express their demand for all Packages of Lots that they value, subject to certain constraints.
CPI		Consumer Price Index
ECS		Electronic Communications Service as defined under the Framework Regulations
EIRP (or eirp)		Equivalent Isotropically Radiated Power
EMC		Electro Magnetic Compatibility
FDD		Frequency Division Duplex
Guard-band		An unused spectrum bandwidth separating channels to prevent interference
GHz		Gigahertz (1,000,000,000 Hertz)
GNP		Gross National Product
Hertz		Unit of Frequency
kHz		Kilo Hertz (1,000 Hertz)
LTE		Long Term Evolution of 3G
MHz		Megahertz (1,000,000 Hertz)

MoU	Memorandum / Memoranda of Understanding
QoS	Quality of Service
R&TTE	Radio Equipment And Telecommunications Terminal Equipment
RED	Radio Equipment Directive: Directive 2014/53/EU of the European Parliament and of the Council, 16th April 2014, on harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC
SUF	Spectrum Usage Fee
TDD	Time Division Duplex

Annex 2: Draft Regulations

INDICATIVE¹ DRAFT STATUTORY INSTRUMENTS

S.I. No. of 2016

**WIRELESS TELEGRAPHY (LICENCES IN THE 3.6 GHZ BAND) REGULATIONS
2016**

¹ These draft Regulations are indicative only and are subject to the Minister's consent pursuant to Section 37 of the Communications Regulation Act 2002.

WIRELESS TELEGRAPHY (LICENCES IN THE 3.6 GHZ BAND) REGULATIONS 2016

The Commission for Communications Regulation, in exercise of the powers conferred on it by section 6 (as substituted by section 182 of the Broadcasting Act 2009 (No. 18 of 2009)) of the Wireless Telegraphy Act 1926 (No. 45 of 1926) and with the consent of the Minister for Communications, Energy and Natural Resources, pursuant to section 37 of the Communications Regulation Act 2002 (No. 20 of 2002), hereby makes the following regulations:

Citation

1. These Regulations may be cited as the Wireless Telegraphy (Licences in the 3.6 GHz band) Regulations, 2016.

Interpretation

2. (1) In these Regulations, unless the context otherwise requires:

“3.6 GHz Band” means radio frequency spectrum in the range 3400 MHz to 3800 MHz but excluding the Guard Band Spectrum and the State Services Spectrum;

“3.6 GHz Band Liberalised Use Licence” means a Licence in the form set out in Schedule 1, to keep and have possession of Apparatus in one, or more than one, Region, in accordance with and subject to the terms and conditions contained in the licence;

“3.6 GHz Band Preparatory Licence” means a Licence in the form set out in Schedule 3 to keep and have possession of Apparatus in one or more than one Region, in accordance with and subject to the terms and conditions contained in the Licence;

“3.6 GHz Band Spectrum Lease Licence” means a Licence in the form set out in Schedule 2 to keep and have possession of Apparatus in one or more than one Region, in accordance with and subject to the terms and conditions contained in the Licence;

“3.6 GHz Band Transition Protected Licence” means a Licence in the form set out in Schedule 4 to keep and have possession of Apparatus for the provision of FWA services in one or more than one FWALA Service Area, in accordance with and subject to the terms and conditions contained in the Licence;

“3.6 GHz Band Transition Unprotected Licence” means a Licence in the form set out in Schedule 5 to keep and have possession of Apparatus for the provision of FWA services in one or more than one specified FWALA Service Area on a Non-Interference and Non-Protected Basis, in accordance with and subject to the terms and conditions contained in the Licence;

“Act of 1926” means Wireless Telegraphy Act 1926 (No. 45 of 1926);

“Act of 1972” means Wireless Telegraphy Act 1972 (No. 5 of 1972);

“Act of 2002” means Communications Regulation Act 2002 (No. 20 of 2002);

“Additional Price” has the meaning set out in the Information Memorandum;

“Apparatus” in relation to Licences means apparatus for wireless telegraphy as defined in section 2 of the Act of 1926, for terrestrial systems capable of providing Electronic Communications Services in the 3.6 GHz Band;

“Award” means the competitive award procedure used by the Commission for the purpose of granting individual rights of use for radio frequencies in the 3.6 GHz Band, as detailed in the Information Memorandum;

“Award Rules” means the rules and procedures relating to the Award as set out in the Information Memorandum;

“Authorisation Regulations” means the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. 335 of 2011);

“Base Price” has the meaning set out in the Information Memorandum;

“Bidder” has the meaning set out in the Information Memorandum;

“Centre Point” means the geographic location at the centre of an Existing Licence to which a 3.6 GHz Band Transition Protected Licence or 3.6 GHz Band Transition Unprotected Licence relates as the case may be;

“Commission” means the Commission for Communications Regulation;

“CPI” means the Consumer Price Index as published from time to time by the CSO;

“CPI Adjustment” means a negative or positive adjustment to the SUF, calculated using the CPI according to the methodology set out in the Information Memorandum;

“CSO” means the Central Statistics Office or its successor;

“Decision of 2008” means European Commission Decision 2008/411/EC, of 21 May 2008, on the harmonisation of the 3400-3800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community;

“Decision of 2014” means European Commission Implementing Decision (2014/276/EU) of 2 May 2014 on amending Decision 2008/411/EC on the harmonisation of the 3400-3800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community;

“Electronic Communications Network” and “Electronic Communications Service” have the meanings assigned to them in the Framework Regulations;

“Existing Licence” means a licence under the Wireless Telegraphy (Fixed Wireless Access Local Area Licence) Regulations, 2003 ([S.I. No. 79 of 2003](#));

“Existing Licensee” means a holder of an Existing Licence;

“Framework Regulations” means European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011);

“FWA” or “Fixed Wireless Access” means the wireless provision of Electronic Communications Services between a single base station at a fixed location and multiple subscriber terminal stations at fixed locations where the base station is connected to an Electronic Communications Network;

“FWALA Service Area” means the geographic area defined by way of a circle around the Centre Point with a maximum radius of 20km from that Centre Point;

“General Authorisation” means an authorisation for an undertaking to provide an electronic communications network or service under and in accordance with Regulation 4 of the Authorisation Regulations;

“GHz” means gigahertz;

“Guard Band Spectrum” means radio frequency spectrum in the range 3400 MHz to 3410 MHz;

“Harmful Interference” has the meaning set out in the Framework Regulations;

“Information Memorandum” means the information memorandum which was published on [yet to be published] and set out in the Commission’s Document numbered [XX/YY] for the purposes of outlining in detail the processes and procedures the Commission would follow in running the Award;

“Lease” means the leasing by a Licensee (“the Lessor”) of some or all of a right of use granted under a 3.6 GHz Band Liberalised Use Licence to another party (“the Leaseholder”) for a period less than the entire remaining duration of the right of use, after which the right of use reverts to the Lessor;

“Licence” means a Non-exclusive licence granted under section 5 of the Act of 1926 in accordance with and subject to the matters prescribed in these Regulations to keep and have possession of Apparatus in a defined geographic area, being one of:

- (a) a 3.6 GHz Band Liberalised Use Licence;
- (b) a 3.6 GHz Band Spectrum Lease Licence;
- (c) a 3.6 GHz Band Preparatory Licence;
- (d) a 3.6 GHz Band Transition Protected Licence; or
- (e) a 3.6 GHz Band Transition Unprotected Licence,

as the case may be;

“Licence Commencement Date” means the date, as specified in the Licence, upon which the Licence comes into effect;

“Licensee” means the holder of a Licence;

“MHz” means megahertz;

“Non-exclusive”, in relation to a Licence, means that the Commission is not precluded from authorising the keeping and having possession by persons other than the Licensee, on a Non-Interference and Non-Protected Basis, of apparatus for wireless telegraphy on the radio frequency spectrum specified in the Licence;

“Non-Interference and Non-Protected Basis” means that the use of Apparatus is subject to no Harmful Interference being caused to any Radiocommunication Service, and that no claim may be made for the protection of Apparatus used on this basis against Harmful Interference originating from Radiocommunication Services;

“R&TTE Regulations” means European Communities (Radio Equipment and Telecommunications Terminal Equipment) Regulations, 2001 (S.I. 240 of 2001);

“Radiocommunication Service” means a service as defined in the Radio Regulations of the International Telecommunication Union involving the transmission, emission or reception of radio waves for specific telecommunication purposes;

“Radionavigation Service” means a service involving the determination of the position, velocity and/or other characteristics of an object, or the obtaining of information related to its parameters, by means of the propagation properties of radio waves and used for the purposes of navigation, including obstruction warning;

“Region” means a regional area of the State specified in Schedule A;

“Reserve Price” means the relevant price as detailed in Schedule 6;

“Spectrum Usage Fee” or “SUF” means the relevant fee as detailed in Schedule 7;

“State Services Spectrum” means radio frequency spectrum in the range 3435 MHz to 3475 MHz;

“Transfer” has the meaning set out in the Transfer Regulations;

“Transferee” has the meaning set out in the Transfer Regulations;

“Transfer Regulations” means the Wireless Telegraphy (Transfer of Spectrum Rights of Use) Regulations 2014 (S.I. No 34 of 2014);

“Type A Spectrum Block” means a 25 MHz unpaired block of radio frequency spectrum in the range 3410 MHz – 3435 MHz;

“Type B Spectrum Block” means a 5 MHz unpaired block of radio frequency spectrum in the range 3475 MHz – 3800 MHz;

“Undertaking” has the meaning set out in the Framework Regulations;

“Upfront Fee” has the meaning set out in the Information Memorandum;

“Winning Bidder” has the meaning set out in the Information Memorandum; and

“Working Day” means a day which is not a Saturday or Sunday or a public holiday as defined in section 2(1) of the Organisation of Working Time Act 1997.

(2) In these Regulations:

(a) a reference to an enactment or regulation shall be construed as a reference to the enactment or regulation as amended or extended by or under any subsequent enactment or regulation;

(b) a reference to a Regulation or a Schedule is to a Regulation of or Schedule to these Regulations, unless it is indicated that a reference to some other enactment is intended;

(c) a reference to a paragraph or subparagraph is to the paragraph or subparagraph of the provision in which the reference occurs unless it is indicated that reference to some other provision is intended; and

(d) a reference to a Directive of the European Parliament and Council shall be the Directive as amended or extended by any subsequent Directive.

(e) a reference to a Decision of the European Commission shall be the Decision as amended or extended by any subsequent Decision.

(3) A word or expression that is used in these Regulations and that is also used in the Act of 1926 has, unless the context otherwise requires, the same meaning in these Regulations that it has in that Act.

(4) A word or expression that is used in these Regulations and that is also used in the Act of 2002 has, unless the context otherwise requires, the same meaning in these Regulations that it has in that Act.

(5) A word or expression that is used in these Regulations and that is also used in the Framework Regulations or in the Authorisation Regulations has, unless the context otherwise requires, the same meaning in these Regulations that it has in those Regulations.

(6) The Interpretation Act 2005 (No. 23 of 2005) applies to these Regulations.

Licences to which these Regulations apply

3. (1) These Regulations apply to:

- (a) 3.6 GHz Band Liberalised Use Licences,
- (b) 3.6 GHz Band Spectrum Lease Licences,
- (c) 3.6 GHz Band Preparatory Licences,
- (d) 3.6 GHz Band Transition Protected Licences, and
- (e) 3.6 GHz Band Transition Unprotected Licences.

Application for the Grant and Form of Licences

4. (1) Application for the grant of a 3.6 GHz Band Liberalised Use Licence, 3.6 GHz Band Preparatory Licence or 3.6 GHz Band Transition Protected Licence on foot of the Award shall be made by a Winning Bidder to the Commission in writing, and in such form as may be determined by the Commission from time to time.

(2) The Commission may grant a 3.6 GHz Band Liberalised Use Licence, 3.6 GHz Band Preparatory Licence or 3.6 GHz Band Transition Protected Licence on foot of the Award following payment by the applicant of the relevant fees prescribed in Regulation 8.

(3) Application for the grant of a 3.6 GHz Band Transition Unprotected Licence shall be made by an Existing Licensee to the Commission in writing, and in such form as may be determined by the Commission from time to time. The Commission may grant a 3.6 GHz Band Transition Unprotected Licence upon receipt of an application submitted in accordance with these Regulations following payment by the applicant of the relevant fees prescribed in Regulation 8.

(4) The Commission may grant a 3.6 GHz Band Liberalised Use Licence to a transferee in accordance with the Transfer Regulations.

(5) Application for the grant of a 3.6 GHz Band Spectrum Lease Licence shall be made by a Lessee to the Commission in writing, and in such form as may be determined by the Commission from time to time. The Commission may grant a 3.6 GHz Band Spectrum Lease Licence to a Leaseholder following the approval of the relevant spectrum Lease by the Commission in accordance with paragraphs 18 and 19 of Regulation 6.

(6) A person who makes an application under paragraphs (1), (3) or (5) shall furnish to the Commission such information as the Commission may reasonably require for the purposes of these Regulations, and if the person, without reasonable cause, fails to comply with this paragraph, the Commission may refuse to grant the Licence concerned to the person.

(7) A 3.6 GHz Band Liberalised Use Licence to which these Regulations apply shall be in the form specified in Schedule 1, with such variation, if any, whether by addition, deletion or alteration as the Commission may determine from time to time or in any particular case.

(8) A 3.6 GHz Band Spectrum Lease Licence to which these Regulations apply shall be in the form specified in Schedule 2, with such variation, if any, whether by addition, deletion or alteration as the Commission may determine from time to time or in any particular case.

(9) A 3.6 GHz Band Preparatory Licence to which these Regulations apply shall be in the form specified in Schedule 3, with such variation, if any, whether by addition, deletion or alteration as the Commission may determine from time to time or in any particular case.

(10) A 3.6 GHz Band Transition Protected Licence to which these Regulations apply shall be in the form specified in Schedule 4, with such variation, if any, whether by addition, deletion or alteration as the Commission may determine from time to time or in any particular case.

(11) A 3.6 GHz Band Transition Unprotected Licence to which these Regulations apply shall be in the form specified in Schedule 5, with such variation, if any, whether by addition, deletion or alteration as the Commission may determine from time to time or in any particular case.

Duration of Licences

5. (1) The commencement date of a 3.6 GHz Band Liberalised Use Licence shall be 1 August 2017 or such other date as may be specified by the Commission. Unless it has been withdrawn or had its duration amended under Regulation 7(2), a 3.6 GHz Band Liberalised Use Licence to which these Regulations apply shall in any event expire on 31 July 2032.

(2) The commencement date and expiry date of a 3.6 GHz Band Spectrum Lease Licence shall be set by the Commission and specified in the 3.6 GHz Band Spectrum Lease Licence. A 3.6 GHz Band Spectrum Lease Licence to which these Regulations apply shall in any event expire before 31 July 2032.

(3) The commencement date and expiry date of a 3.6 GHz Band Preparatory Licence shall be set by the Commission and specified in the 3.6 GHz Band Preparatory Licence.

(4) The commencement date of a 3.6 GHz Band Transition Protected Licence shall be 1 August 2017 or such other date as may be specified by the Commission. The expiry date of a 3.6 GHz Band Transition Protected Licence shall be set by the Commission and specified in the 3.6 GHz Band Transition Protected Licence.

(5) The commencement date and expiry date of a 3.6 GHz Band Transition Unprotected Licence shall be set by the Commission and specified in the 3.6 GHz Band Transition Unprotected Licence. Unless it has been withdrawn or had its duration amended under Regulation 7(2) and in accordance with the Authorisation Regulations, a 3.6 GHz Band Transition Unprotected Licence to which these Regulations apply shall in any event expire on 31 July 2022.

Conditions of Licences

6. It shall be a condition of any Licence to which these Regulations apply that the Licensee shall:

(1) ensure that it complies with the conditions contained within the Licence concerned and these Regulations;

(2) ensure that any Apparatus complies with the Decision of 2008 and the Decision of 2014;

(3) ensure that Apparatus installed, maintained, possessed or kept under the Licence is capable of operating within the radio frequency spectrum specified in the Licence concerned;

(4) ensure that where the Apparatus is worked or used, as appropriate, it is worked or used on such radio frequency spectrum as specified in the Licence concerned;

(5) comply with any rules to prevent spectrum hoarding as may be laid down by the Commission under the Framework Regulations;

(6) ensure that it makes payment of the fees set out in Regulation 8;

(7) ensure that in advance of the Licence Commencement Date and on or before 1 August for each calendar year in which the Licence concerned is in force, it submits up to date information to the Commission in respect of Parts XX and YY of its 3.6 GHz Band

Liberalised Use Licence, Parts XX and YY of its 3.6 GHz Band Spectrum Lease Licence, Parts XX and YY of its 3.6 GHz Band Transition Protected Licence and/or Parts XX and YY of its 3.6 GHz Band Transition Unprotected Licence, as the case may be;

(8) furnish such information and reports as may be requested by the Commission from time to time;

(9) ensure that the Apparatus, or any part thereof, shall be installed, maintained, and where a Licence other than a 3.6 GHz Band Preparatory Licence is held, worked and used, so as not to cause Harmful Interference;

(10) ensure that the Apparatus or any part thereof, complies with section 4 of the R&TTE Regulations;

(11) comply with any special conditions imposed under section 8 of the Act of 1972;

(12) (a) notify the Commission, not less than 6 months prior to the proposed cessation of use of any terrestrial system listed in Schedule 1 to which the 3.6 GHz Band Liberalised Use Licence or 3.6 GHz Band Spectrum Lease Licence relates as the case may be; and

(b) use all reasonable endeavours to ensure that any adverse effects on users caused by the cessation of use of a terrestrial system are minimised;

(13) upon becoming aware of any event likely to materially affect its ability to comply with these Regulations, or any conditions set out or referred to in any Licence, notify the Commission of that fact in writing no later than 5 Working Days upon becoming aware;

(14) comply with all obligations under relevant international agreements relating to the use of Apparatus or the frequencies to which they are assigned;

(15) notify the Commission of its intention to transfer any rights of use for radio frequencies attaching to a Licence under paragraph 16;

(16) only transfer the rights of use for radio frequencies attaching to a Licence in accordance with the Transfer Regulations;

(17) notify the Commission of its intention to lease any rights of use for radio frequencies attaching to a Licence under paragraph 18;

(18) subject to paragraph 19, only lease the rights of use for radio frequencies attaching to a Licence in accordance with such procedures as may be specified by the Commission from time to time under Regulation 19 of the Framework Regulations;

(19) where the Commission has not yet put in place procedures referred to in paragraph 18 of this Regulation, not, without the prior consent of the Commission, which shall not be unreasonably withheld, lease any such rights of use attaching to a Licence; and

(20) ensure that if the address of the Licensee or its Transferee or Lessee changes, the Licensee, Transferee or Lessee shall, as soon as possible, but in any event within 28 days, notify the Commission in writing of the change.

Enforcement, Amendment, Withdrawal and Suspension

7. (1) Enforcement by the Commission of compliance by a Licensee with conditions attached to its Licence shall be in accordance with the Authorisation Regulations.

(2) The Commission may amend any Licence from time to time in accordance with the Authorisation Regulations.

(3) A Licence may be suspended or withdrawn by the Commission in accordance with the Authorisation Regulations.

(4) A Licence may be suspended or withdrawn by the Commission if, after the grant of a Licence pursuant to these Regulations, it emerges that the Licensee has breached the Award Rules.

Licence Fees

8. (1) The fee for a 3.6 GHz Band Liberalised Use Licence granted on foot of the Award is the sum of the Upfront Fee and the Spectrum Usage Fees over the duration of the Licence less any adjustments or refunds applicable to the Licensee, as identified in the Information Memorandum.

(2) The Reserve Price per Type A Spectrum Block and Type B Spectrum Block per Region is detailed in Schedule 6.

(3) The Base Price and the Additional Price for a 3.6 GHz Band Liberalised Use Licence are determined using the pricing methodology set out in the Information Memorandum.

(4) The annual Spectrum Usage Fee before CPI Adjustment per Type A Spectrum Block and Type B Spectrum Block per Region is detailed in Schedule 7.

(5) The Spectrum Usage Fee for a 3.6 GHz Band Liberalised Use Licence is the sum of the annual SUFs before CPI Adjustment associated with each Type A Spectrum Block and Type B Spectrum Block identified in the Licence and the CPI Adjustment for each Type A Spectrum Block and Type B Spectrum Block identified in the Licence.

(6) In the case of a Spectrum Usage Fee for a period of less than one year, the Spectrum Usage Fee shall be the relevant sum as detailed in paragraph (5) adjusted on a pro rata daily basis for such period.

(7) Where the commencement date of a 3.6 GHz Band Liberalised Use Licence is delayed due to circumstances as described in the Information Memorandum, a Licensee shall be entitled to an adjustment of the Licence Fees payable or a refund of Licence Fees already paid, as provided for in section X.X.X of the [final] Information Memorandum.

(8) The Upfront Fee specified in paragraphs (2) and (3) of this Regulation less any adjustments or refunds applicable to the Licensee shall be paid to the Commission on a date specified by the Commission in accordance with the Information Memorandum, by way of banker's draft or such other means and on such other terms, if any, as the Commission may decide. Where the date of payment falls on a day other than a Working Day, payment shall be made on or before the last Working Day before the date on which payment would otherwise have fallen due.

(9) The fee for a 3.6 GHz Band Liberalised Use Licence granted on foot of Transfer is the Spectrum Usage Fees specified in paragraphs (5) and (6) of this Regulation.

(10) The Spectrum Usage Fees specified in paragraphs (5), (6) and (9) of this Regulation, less any adjustments or refunds applicable to the Licensee, shall be charged by, and paid to, the Commission prior to the grant of a 3.6 GHz Band Liberalised Use Licence or prior to 1 August of each respective calendar year within the duration of the 3.6 GHz Band Liberalised Use Licence, as the case may be. Such payment shall be made by way of banker's draft or such other means and on such other terms, if any, as the Commission may decide. Where the date of payment falls on a day other than a Working Day, payment shall be made on or before the last Working Day before the date on which payment would otherwise have fallen due.

(11) If a 3.6 GHz Band Liberalised Use Licence is suspended or withdrawn under Regulation 7(3) or Regulation 7(4), the Licensee shall not be entitled to be repaid any part of the Upfront Fee or Spectrum Usage Fee paid by the Licensee under this Regulation, but shall still be liable to pay any sums, including interest, that are outstanding.

(12) If the amount of radio frequency spectrum specified in a 3.6 GHz Band Liberalised Use Licence is reduced under Regulation 7(2), the Licensee may be entitled to a refund of Spectrum Usage Fees already paid and a reduction on future SUFs on a pro-rata basis having regard to the nature of the amendment. The Licensee shall not be entitled to any refund of its Upfront Fee.

(13) If the duration of a 3.6 GHz Band Liberalised Use Licence is reduced at the request of the Licensee, the Licensee may be entitled to a refund of Spectrum Usage Fees already paid, on a pro-rata basis having regard to the reduced duration. The Licensee shall not be entitled to any refund of its Upfront Fee.

(14) The fee for a 3.6 GHz Band Spectrum Lease Licence shall be specified by the Commission in accordance with such procedures as may be specified by the Commission from time to time under Regulation 19 of the Framework Regulations.

(15) The fee for a Preparatory Licence is €100.

(16) The fee per FWALA Service Area in a 3.6 GHz Band Transition Protected Licence is detailed in Schedule 8.

(17) The fee per FWALA Service Area in a 3.6 GHz Band Transition Unprotected Licence shall be the fees specified in paragraph 16 above plus a 17.29% increase.

(18) Failure by a Licensee to make a Spectrum Usage Fee payment on or before the date it falls due constitutes non-compliance by the Licensee with these Regulations. The Commission, in addition to enforcement actions in accordance with Regulation 7 of these Regulations, may take steps to recover the fees due in accordance with paragraphs (19) and (20) of this Regulation.

(19) Where payment of any fee is not made in due time, then the Licensee shall pay to the Commission interest on the fees or part thereof that is outstanding at the rate payable in respect of late payments in commercial transactions pursuant to S.I. No. 580/2012 - European Communities (Late Payment in Commercial Transactions) Regulations 2012,

between the date when such fee or part fell due and the date of payment of such fee or part thereof.

(20) An amount payable by a person in respect of a fee under this Regulation may be recovered by the Commission from the person as a simple contract debt in any court of competent jurisdiction.

Licensee to satisfy all Legal Requirements

9. (1) Licences granted pursuant to these Regulations do not grant to the Licensee any right, interest or entitlement other than the right to keep, and have possession of, install, and maintain, and for Licences other than a 3.6 GHz Band Preparatory Licence, to work and use, at a specified location or locations in the State, Apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services.

SCHEDULE A

DESCRIPTION OF THE REGIONS

REGION NAME	REGION DESCRIPTION
Border, Midlands and West	That area of the State comprising counties Donegal, Leitrim, Sligo, Mayo, Roscommon, Cavan, Monaghan, Louth, Longford, Westmeath, Offaly, Laois and Galway, but excluding the CSO Boundary for Galway City and Suburbs region, and as further specified in the Information Memorandum.
East	That area of the State comprising counties Meath, Kildare, Wicklow and Dublin, but excluding the respective parts of these counties contained in the CSO Boundary for Dublin City and Suburbs region, , and as further specified in the Information Memorandum.
South East	That area of the State comprising counties Carlow, Wexford, the former local authority area of South Tipperary (as originally referred to as Tipperary South Riding in the Local Government Act 1898), Kilkenny and Waterford, but excluding the respective parts of these counties contained in the CSO Boundary of Waterford City and Suburbs region, and as further specified in the Information Memorandum.
South West	That area of the State comprising counties Clare, Limerick, Kerry, Cork and the former local authority area of North Tipperary (as originally referred to as Tipperary North

	Riding in the Local Government Act 1898) but excluding the respective parts of these counties contained in the CSO Boundary for Cork City and Suburbs region and the CSO Boundary for Limerick City and Suburbs region, and as further specified in the Information Memorandum.
CSO Boundary for Dublin City and Suburbs	That area of the State as defined by the CSO in the Census 2011 Boundary Files for Dublin City and Suburbs and as further specified in the Information Memorandum.
CSO Boundary for Cork City and Suburbs	That area of the State as defined by the CSO in the Census 2011 Boundary Files for Cork City and Suburbs and as further specified in the Information Memorandum.
CSO Boundary for Limerick City and Suburbs	That area of the State as defined by the CSO in the Census 2011 Boundary Files for Limerick City and Suburbs and as further specified in the Information Memorandum.
CSO Boundary for Galway City and Suburbs	That area of the State as defined by the CSO in the Census 2011 Boundary Files for Galway City and Suburbs and as further specified in the Information Memorandum.
CSO Boundary for Waterford City and Suburbs	That area of the State as defined by the CSO as per the Census 2011 Boundary Files for Waterford City and Suburbs and as further specified in the Information Memorandum.

SCHEDULE 1

WIRELESS TELEGRAPHY ACT, 1926

WIRELESS TELEGRAPHY (LICENCES IN THE 3.6 GHz BAND) REGULATIONS

2016

**3.6 GHz Band Liberalised Use Licence for terrestrial systems capable of providing
Electronic Communications Services**

Licence under section 5 of the Wireless Telegraphy Act, 1926, to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services.

The Commission for Communications Regulation, in exercise of the powers conferred on it by section 5 (as substituted by section 182 of the Broadcasting Act 2009 (No. 18 of 2009)) of the Wireless Telegraphy Act, 1926 (No. 45 of 1926) (“the Act”), hereby grants the following licence to _____ of _____ (“the Licensee”).

The Licensee is hereby authorised to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services as specified in Part 2 to this Licence, subject to such apparatus being installed, maintained, worked and used in accordance with the terms and conditions and restrictions set out in the Wireless Telegraphy (Licences in the 3.6 GHz Band) Regulations, 2016 (S.I. No. _____ of 2016) (“the Regulations”), including, but not limited to, the following:

- (1) The Licensee shall ensure that it complies with all of the conditions contained within the Regulations, under which this Licence is issued, and within Parts 1 to 4 of this Licence; and
- (2) The Licensee shall ensure that it makes payment of all fees as detailed in the Regulations under which this Licence is issued.

This Licence shall come into effect on DD/MM/YY (the “Licence Commencement Date”) and, subject to revocation, suspension or withdrawal, expires on DD/MM/YY (the “Licence Expiry Date”).

Unless the context otherwise admits or requires, words and expressions used in this Licence shall bear the meanings assigned to them in the Act, or Regulations, as the case may be.

Signed: _____

Part 1

Commencement and Expiry dates per Type A and Type B Spectrum Block per Region

Region	Name of Spectrum Block	Frequency Assigned to Spectrum Block	Commencement Date per Spectrum Block	Expiry Date per Spectrum Block
	<i>Block A, B, C etc.</i>	<i>From _____ MHz to _____ MHz</i>	<i>DD Month YYYY</i>	<i>DD Month YYYY</i>

Part 2

The Apparatus to which this Licence applies

Equipment Index Reference	Terrestrial System	Equipment Description	Manufacturer	Model

Part 3

Apparatus Location and Details

Region	County	Site Identity	Eastings	Northings	Equipment Index Reference	Maximum EIRP ²

Fixed outdoor Terminal Stations with a directional antenna

Region	County	Site Identity	Eastings	Northings	Equipment Index Reference	Maximum EIRP

Part 4

Licence Conditions

Section 1: General

1) The Frequency Band

² EIRP is the Equivalent Isotropically Radiated Power

“3.6 GHz Band” means radio frequency spectrum in the range 3400 MHz to 3800 MHz band excluding the Guard Band Spectrum of 3400 to 3410 MHz and the State Services Spectrum of 3435 MHz to 3475 MHz.

2) The Licensed Spectrum Blocks

“Licensed Spectrum Block(s)” means the Spectrum Blocks set out in Part 1 of the Licence.

3) The Terrestrial Systems and Services

“Terrestrial Systems” means terrestrial systems capable of providing Electronic Communications Services that are in compliance with the technical implementing measures adopted pursuant to EC Decision No 2008/411/EC (as amended) and in conformity with the standards referred to in Parts 4.

4) Provision of Maps and Data

For the purposes of complying with rollout obligations (see Section 4) and quality of service obligations (see Section 5) compliance assessments, the Licensee shall, on request, provide to the Commission the following:

- (a) Maps showing rollout as required under Section 4;
- (b) An up-to-date list of the locations of the Base Station including the Rollout Base Stations covered by the Licence; and
- (c) An adequate number of Terminal Stations, Subscriber Identity Modules (SIM) cards or equivalents for testing as applicable.

5) The Licensed Regions

“The Licensed Regions” means the Regions specified in Part 1 of the Licence.

Section 2: Technical Conditions

A: Definitions

- “Base Station” means Apparatus connected to a backhaul network, which provides a Radiocommunication Service to Terminal Stations using the 3.6 GHz Band;
- “dBm” means decibels of power referenced to one milliwatt;
- “Downlink” means transmissions from a Base Station to a Terminal Station;
- “Equivalent Isotropically Radiated Power” or “EIRP” means the product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna;

- “Indoor Small Cell” means a Base Station with an EIRP of less than or equal to 24 dBm per 20 MHz carrier that is located indoors either within a residential or non-residential property;
- “Inter-Licensee Co-ordination Agreement” means bi-lateral or multi-lateral agreements between Licensees on field strength co-ordination threshold levels at the boundaries of Regions;
- “Inter-Licensee synchronisation procedure” means the synchronisation procedure set out in Section 3;
- “TDD” means time-division duplex;
- “TD-LTE” means the TDD variant of LTE (Long Term Evolution) technology;
- “Terminal Station” means mobile user equipment and fixed customer premise equipment which communicate with a Base Station using the 3.6 GHz Band,
- “Uplink” means transmissions from a Terminal Station to a Base Station.

B: Technical Conditions

1. Only terrestrial systems compatible with Decision 2008/411/EC (as amended) can be worked and used in the 3.6 GHz band.
2. In the 3400 – 3600 MHz frequency range of the 3.6 GHz band, the preferred duplex mode of operation is TDD.
3. In the 3600 – 3800 MHz frequency range of the 3.6 GHz band, the duplex mode of operation is TDD.

Base Stations

4. Where the Inter-Licensee Synchronisation Procedure specified in Section 3 determines that the Permissive Block Edge Mask applies, the technical conditions defined in Table 1 below shall apply to Base Stations.

Table 1: Permissive Block Edge Mask

BEM Element	Frequency Range	Power Limit
In-block	Block assigned to the Licensee	68 dBm/5 MHz per antenna
Transitional Region	-5 to 0 MHz offset from lower block edge 0 to 5 MHz offset from upper block edge	Min(PMax - 40,21) dBm/5 MHz EIRP per antenna
Transitional Region	-10 to -5 MHz offset from lower block edge 5 to 10 MHz offset from upper block edge	Min(PMax - 43,15) dBm/5 MHz EIRP per antenna
Baseline	3400-3800 MHz (except for in-block and transitional regions)	Min(PMax - 43,13) dBm/5 MHz
Additional baseline	Below 3400 MHz and above 3800 MHz	-34 dBm/5 MHz EIRP per cell

5. Where the Inter-Licensee Synchronisation Procedure specified in Section 3 determines that the Restrictive Block Edge Mask applies, the technical conditions defined in Table 2 below shall apply. In order to meet the Restrictive Block Edge Mask Licensee may be required to adopt guard bands within its Licensed Spectrum Block(s).

Table 2: Restrictive Block Edge Mask

BEM Element	Frequency Range	Power Limit
In-block	Block assigned to the Licensee	68 dBm/5 MHz per antenna
Baseline	3400-3800 MHz (except for in-block frequencies)	-34 dBm/5 MHz EIRP per cell
Additional baseline	Below 3400 MHz and above 3800 MHz	-34 dBm/5 MHz EIRP per cell

6. The Licensee shall comply with all Memoranda of Understanding agreed from time to time between the Commission and the national regulatory authority responsible for communications matters in the UK, Ofcom, or its successor, in relation to the 3.6 GHz Band³.
7. A co-ordination threshold limit of 32 dB μ V/m/5MHz for 90% of the time and 90% of the locations at a height of 10 m at the borders of each Region shall apply.⁴

³ See Annex 3 of ComReg Document 0617R7

⁴ The field prediction method shall be according to Recommendation ITU-R P.452-16, unless otherwise specified by ComReg.

8. The co-ordination threshold limit specified at paragraph 7 may be relaxed when an Inter-Licensee Co-ordination Agreement is in place between all potentially affected Licensees. Inter-Licensee Co-ordination Agreements may be guided by ECC Recommendation (15) 01⁵ or subsequent relevant guidance documents.
9. In the event of Harmful Interference, the affected Licensees shall exchange information with a view to resolving the Harmful Interference by mutual consent. Where resolution cannot be agreed between the affected Licensees, ComReg may mediate in accordance with its statutory functions, objectives and duties.

Terminal Stations

10. With the exception of fixed outdoor Terminal Stations with a directional antenna the maximum in-block power for a Terminal Station shall not exceed 25 dBm/5 MHz EIRP.
11. The maximum in-block power limit for fixed outdoor Terminal Stations with a directional antenna shall not exceed 37 dBm/5 MHz EIRP.
12. Fixed outdoor Terminal Stations with a directional antenna shall:
 - a) be installed, controlled by and remain the responsibility of the Licensee; and
 - b) not cause Harmful Interference to any other users, be that Base Stations, other Terminal Stations, or other apparatus for wireless telegraphy in other radio frequency spectrum bands.

Section 3: Inter-Licensee Synchronisation Procedure

Introduction

1. Licensees shall co-operate in such a way that one network deployment does not cause Harmful Interference to that of another Licensee within the band.
2. Licensees shall be bound by the Inter-Licensee Synchronisation procedure.
3. This procedure sets out the circumstances in which Licensees may use the Permissive Block Edge Mask and the Restrictive Block Edge Mask, so as to minimise the risk of Harmful Interference to other Licensees.

Conditions for using the Permissive Block Edge Masks

⁵ See ECC Recommendation (15)01 – Cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 694-790 MHz, 1452-1492 MHz, 3400-3600 MHz and 3600-3800 MHz - <http://www.erodocdb.dk/Docs/doc98/official/pdf/REC1501.PDF>

4. **Default Frame Structure** – the technical conditions for Permissive Block Edge Mask set out in Section 2 shall apply where a Licensee’s Base Station complies with the default frame structure outlined below:
- i) Transmissions from a Licensee’s Base Station(s) shall have a frame structure as shown in Figure 1. Indicated timeslots (or subframes) must not be allocated to anything other than Downlink (D) and Uplink (U) transmissions. S denotes a special subframe;
 - ii) Timeslots shall have a duration of 1 millisecond;
 - iii) TD-LTE frame configuration 2 (Downlink: Uplink, 3:1) with special sub frame configuration 6 or alternative frame structures whose transmit and receive periods are aligned with this configuration are permitted on the condition that the requirements of sub-paragraphs (i) and (ii) above are met; and
 - iv) Licensees shall ensure that frames start at a common reference time so that all Licensees’ frames are aligned and transmissions synchronised.

Figure 1: Default Frame Structure

DL/UL ratio	Subframe number									
	0	1	2	3	4	5	6	7	8	9
3:1	D	S	U	D	D	D	S	U	D	D

Conditions for using the Restrictive Block Edge Masks

5. **“Other” Frame Structure** – the technical conditions for Restrictive Block Edge Mask set out in Section 2 shall apply where a Licensee’s Base Station complies with the “other” frame structure as outlined below:
- i) All frame configurations that are not compatible with TD-LTE frame configuration 2 (3:1), special sub frame configuration 6 or equivalent are permitted;
 - ii) Licensees shall co-operate to minimise Harmful Interference caused by sub-frame overlaps if different technologies are used; and
 - iii) Licensees using the Restrictive Block Edge Mask shall not cause Harmful Interference to those Licensees’ networks that use the Default Frame Structure (or equivalent). Achieving this may include applying internal guard bands and/or reduced in block power levels in blocks adjacent to those Licensees’ networks that use the Default Frame Structure (or equivalent).

Small Cells

6. Indoor Small Cells are exempted from synchronisation. The Permissive Block Edge Mask set out in paragraph 3 of Section 2 applies to such Small Cells on the condition that they do not cause Harmful Interference to any other Licensees.

Section 4: Rollout Requirements

1) Definitions

In this section the following additional definitions shall apply:

- “Rollout Base Station” means a Network Controlled Wireless Telegraphy Apparatus in the 3.6 GHz Band with a minimum spectrum efficiency capability of 4 bits/Hz; and
- “Network-Controlled Wireless Telegraphy Apparatus” means apparatus which has backhaul capability⁶ over a network connection under the control of the Licensee. For the avoidance of doubt, “plug-and-play” type apparatus, such as femto cells, Terminal Stations and repeaters, are not Network-Controlled Wireless Telegraphy Apparatus.

2) Base Station Minimum Rollout Requirements

1. For each Licensed Region, the Licensee shall achieve and maintain the Rollout Base Station obligation detailed in Table 3 below within 3 years of the Licence Commencement Date relevant to its Licensed Regions.

⁶ If the 3.6 GHz Band is used for the provision of backhaul connectivity, even if such apparatus comprises of multiple hops to the network, this counts as a single Rollout Base Station, provided such backhaul connectivity carries data originating from or destined for multiple customer premises. The connection to individual customer premises equipment is excluded.

Table 3: Rollout Base station obligation by Region

Reference Number of Region	Name of Region	Number of Rollout Base Stations to be worked and used	
		Licensee holding up to and including 100 MHz in the 3.6 GHz band in that Region	Licensee holding over 100 MHz in the 3.6 GHz band in that Region
1	Borders, Midlands and West	15	25
2	East	15	25
3	South East	15	25
4	South West	15	25
5	Dublin city and suburbs	10	15
6	Cork city and suburbs	2	4
7	Limerick city and suburbs	2	4
8	Galway city and suburbs	2	4
9	Waterford city and suburbs	2	4

2. For Regions 1, 2, 3 and 4 in Table 3 above, the Licensee is required to work and use Rollout Base Stations in at least 4 counties for each Licensed Region⁷.
3. Where a Licensee has a Rollout Base Station in one county and this Rollout Base Station is worked and used to provide service to another county, the Rollout Base Station will be counted as being worked and used in the county it serves (and not the county in which it is located).
4. Where a Licensee has a Rollout Base Station in one county and this Rollout Base Station is worked and used to provide services to more than one county (i.e. the county in which it is located in and also neighbouring counties), the Rollout Base Station will only be counted as a single Rollout Base Station for the purposes of meeting the Rollout Base Station obligation and the Licensee may chose the county in which such a Rollout Base Station is to be counted for this purpose.

⁷ Each of the areas of South Tipperary and North Tipperary will be deemed to be a county for the purposes of determining compliance with the rollout obligation.

5. Rollout Base Stations worked and used pursuant to a spectrum leasing arrangement count towards the Rollout Base Station obligation of the Lessor's Licence.
6. Where a Licensee has a spectrum leasing arrangement for a Rollout Base Station in a Region not contained in the Licensed Regions and this Rollout Base Station is being worked and used to serve a Region contained in the Licensed Regions, such a Rollout Base Station will be counted as being worked and used in the county and Region which it serves.
7. Where a Licensee shares a Rollout Base Station with another Licensee, such Rollout Base Stations can count towards the Rollout Base Station obligation of each Licensee in their respective Licensed Regions, provided that the Licensed Spectrum Blocks of each Licensee are worked and used by the Rollout Base Station.

3) Reporting of Compliance

1. The Licensee shall submit an annual compliance report to the Commission on rollout every twelve months within 31 days of the anniversary of commencement of the Licence.
2. In the annual compliance report the Licensee shall notify the Commission whether or not it has met the relevant rollout obligation specified in Section 4 (2) above. Where the Licensee has failed to meet the relevant rollout obligation, the Licensee shall provide adequate reasons and supporting information for same.
3. The information required for this annual compliance report shall be agreed with the Commission in advance and the compliance report shall have sufficient detail and granularity to allow the Commission to verify the contents of the Licensee's annual compliance report.
4. Failure by the Licensee to submit the annual compliance report to the Commission within the specified time period shall be deemed to be non-compliance by the Licensee with both the reporting obligations and the relevant Base Station Rollout obligation.
5. The Commission reserves the right to inspect any Rollout Base Station installed by a Licensee at any time to ensure that the system is configured and operating in accordance with its Licence conditions and the Licensee shall facilitate any such inspections by the Commission within such time as may be specified by the Commission.

Section 5: Quality of Service (QoS) Obligations

1) The Minimum “Availability of the Network” Standard

1. “Availability of the Network” shall be measured in terms of “Network Unavailability” and reported on an annual basis.
2. "Network Unavailability" means the average number of minutes per six month period for which services on the network are not available due to a disturbance, failure or scheduled unavailability to a Network.
3. “Network” means any Terrestrial System which uses the Licensed Spectrum Blocks.
4. The Licensee shall ensure that Network Unavailability is less than 35 minutes (based on the weighting factors set out in Table 4 below) per six month period.

Table 4: Weighting Factors for Network Unavailability tracking all periods of network unavailability.

Network Unavailability, Weighting Factors (divide duration of each network event by weighting factor)			
	Monday to Friday	Saturday	Sunday
For periods between 07.00 and 24.00	1	2	4
For periods between 00.00 and 07.00	4	8	16

5. The Licensee shall maintain a network log on a per Base Station basis in a manner that can demonstrate to the satisfaction of the Commission that such a network log is an adequate means of assessing whether the Licensee is complying with its “availability of the network” licence obligations.
6. The network log, or as may be appropriate part thereof, shall be made available to the Commission upon request by the Commission.
7. The Licensee shall calculate the Network Unavailability for any period specified by the Commission from the information recorded in the network log, and shall, upon request and within such time as may be specified by the Commission, provide the Commission with the results of the calculation.

2) The Minimum “Voice Call” Standard

1. In this section the following additional definition shall apply:

- “Voice Call” means all relevant non-VOIP and managed VOIP call services⁸ which are considered by the Commission to be substitutable with traditional voice call services.
2. Where the Licensee and/or any third party by means of a contractual or other arrangement with the Licensee provides a Voice Call service on a Terrestrial System using the Licensed Spectrum Blocks, the Licensee shall comply with the minimum Voice Call standard set out in Table 5 below.

Table 5: Minimum Voice Call Standards for each 6 month period for annual reporting

	Average	Worst Case
Maximum Permissible Blocking Rates (maximum percentage of total Voice Call attempts which are unsuccessful during the time consistent busy hour ⁹)	2%	4%
Maximum Permissible Dropped Call Rates (maximum percentage of total originating calls which are prematurely released by the Network within 3 minutes of the Voice Call being made.)	2%	4%
Transmission quality: The Licensee shall ensure that: <ul style="list-style-type: none"> • the speech transmission quality of Voice Calls is as good as or better than the speech quality associated with the relevant ETSI Standard and Technical Specifications; and • appropriate echo treatment equipment is used and that such equipment is properly configured. 		

3. Where a Voice Call service is provided by the Licensee and any third party via contractual or other arrangements with the Licensee, the minimum voice call standard shall be calculated by combining the “voice call” measurements of the Licensee with that of the third party.

3) Reporting on Compliance

1. The Licensee shall maintain a log in respect of the performance of its Network against the Minimum Voice Call Standards in Table 5, according to measuring standards as

⁸ See for example, paragraph 2.6 of ComReg Document 14/89, Market Review: Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non Residential Customers.

⁹ “Time consistent busy hour” means the period of one-hour starting at the same time each day for which the average traffic of the network concerned is greatest over the days under consideration. The time consistent busy hour shall be determined from an analysis of traffic data obtained from the service and be subject to the Commission’s approval.

The ‘Time consistent busy hour’ is determined from the Licensee’s voice traffic. It is the one-hour period during which there is the highest level of traffic. The blocked call rates are measured for the same one-hour period during each review period (i.e. 6 months). The one-hour period is determined by the Licensee and is subject to ComReg’s approval.

agreed with the Commission and in such a manner that can demonstrate to the satisfaction of the Commission that its network log is an adequate means of assessing whether the Licensee is complying with these standards.

2. Every twelve months, the Licensee shall measure and submit an annual compliance report to the Commission on the performance of its Network against the Minimum Voice Call Standards in Table 5 within 31 days of the anniversary of commencement of the Licence.
3. In the annual compliance report the Licensee shall notify the Commission whether or not it has met the Minimum Voice Call Standards in Table 5. Where the Licensee has failed to meet any of these standards, the Licensee shall provide adequate reasons and supporting information for same.
4. The annual compliance report shall have sufficient detail and granularity to allow the Commission to verify the Licensee's measurements.
5. Failure by the Licensee to submit the annual compliance report to the Commission within the specified time period shall be deemed to be non-compliance by the Licensee with both these reporting obligations and the Voice Call standards.
6. The Licensee shall, upon request by the Commission¹⁰, carry out drive test measurements against the Maximum Permissible Blocking Rates and Maximum Permissible Dropped Call Rates standards and submit these results to the Commission. These drive test measurements are to be carried out at the Licensee's own expense and to a standard as agreed with the Commission.
7. Failure by the Licensee to carry out and submit the drive tests measurements to the standard agreed with the Commission shall be deemed to be non-compliance by the Licensee with both these reporting obligations and the Maximum Permissible Blocking Rates and Maximum Permissible Dropped Call Rates standards.

¹⁰ The Commission does not envisage drive test measurements being required on a frequent basis, but notes that such measurements may be appropriate in circumstances where:

- a Licensee is submitting a compliance report on QoS for the first time;
- the Commission's own verification checks, drive test measurements or other information suggests that there may be discrepancies in the compliance report on QoS or the Licensee may not be meeting its QoS obligations.

SCHEDULE 2

WIRELESS TELEGRAPHY ACT, 1926

WIRELESS TELEGRAPHY (LICENCES IN THE 3.6 GHz BAND) REGULATIONS

2016

**3.6 GHz Band Spectrum Lease Licence for terrestrial systems capable of providing
Electronic Communications Services**

Licence under section 5 of the Wireless Telegraphy Act, 1926, to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services.

The Commission for Communications Regulation, in exercise of the powers conferred on it by section 5 (as substituted by section 182 of the Broadcasting Act 2009 (No. 18 of 2009)) of the Wireless Telegraphy Act, 1926 (No. 45 of 1926) (“the Act”), hereby grants the following licence to _____ of _____ (“the Licensee”).

The Licensee is hereby authorised to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services as specified in Part 2 to this Licence, subject to such apparatus being installed, maintained, worked and used in accordance with the terms and conditions and restrictions set out in the Wireless Telegraphy (Licences in the 3.6 GHz band) Regulations, 2016 (S.I. No. _____ of 2016) (“the Regulations”), including, but not limited to, the following:

- (1) The Licensee shall ensure that it complies with all of the conditions contained within the Regulations, under which this Licence is issued, and within Parts 1 to 4 of this Licence; and
- (2) The Licensee shall ensure that it makes payment of all fees as detailed in the Regulations under which this Licence is issued.

This Licence shall come into effect on DD/MM/YY (the “Licence Commencement Date”) and, subject to revocation, suspension or withdrawal, expires on DD/MM/YY (the “Licence Expiry Date”).

Unless the context otherwise admits or requires, words and expressions used in this Licence shall bear the meanings assigned to them in the Act, or Regulations, as the case may be.

Signed: _____

Part 1

Commencement and Expiry dates per leased Type A and Type B Spectrum Block per Region

Lessor 3.6 GHz Band Liberalised Use Licence Number	Region	Name of Spectrum Block	Frequency Assigned to Spectrum Block	Commencement Date per Spectrum Block	Expiry Date per Spectrum Block
		<i>Block A, B, C etc.</i>	<i>From _____ MHz to _____ MHz</i>	<i>DD Month YYYY</i>	<i>DD Month YYYY</i>

Part 2

The Apparatus to which this Licence applies

Equipment Index Reference	Terrestrial System	Equipment Description	Manufacturer	Model

Part 3

Apparatus Location and Details

Region	County	Site Identity	Eastings	Northings	Equipment Index Reference	Maximum EIRP¹¹

Fixed outdoor Terminal Stations with a directional antenna

Region	County	Site Identity	Eastings	Northings	Equipment Index Reference	Maximum EIRP

¹¹ EIRP is the Equivalent Isotropically Radiated Power

Part 4

Licence Conditions

The Licence Conditions will be specified by the Commission in accordance with such procedures as may be specified by the Commission from time to time under Regulation 19 of the Framework Regulations.

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SCHEDULE 3

WIRELESS TELEGRAPHY ACT, 1926

WIRELESS TELEGRAPHY (LICENCES IN THE 3.6 GHz BAND) REGULATIONS

2016

**3.6 GHz Band Preparatory Licence for terrestrial systems capable of providing
Electronic Communications Services**

Licence under section 5 of the Wireless Telegraphy Act, 1926, to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services.

The Commission for Communications Regulation, in exercise of the powers conferred on it by section 5 (as substituted by section 182 of the Broadcasting Act 2009 (No. 18 of 2009)) of the Wireless Telegraphy Act, 1926 (No. 45 of 1926) (“the Act”), hereby grants the following licence to _____ of _____ (“the Licensee”).

The Licensee is hereby authorised to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services as specified in Part 2 to this Licence, subject to such apparatus being installed and maintained in accordance with the terms and conditions and restrictions set out in the Wireless Telegraphy (Licences in the 3.6 GHz Band) Regulations, 2016 (S.I. No. _____ of 2016) (“the Regulations”), including, but not limited to, the following:

- (1) The Licensee shall ensure that it complies with all of the conditions contained within the Regulations, under which this Licence is issued, and within Parts 1 to 2 of this Licence; and
- (2) The Licensee shall ensure that it makes payment of all fees as detailed in the Regulations under which this Licence is issued.

This Licence shall come into effect on DD/MM/YY (the “Licence Commencement Date”) and, subject to revocation, suspension or withdrawal, expires on DD/MM/YY (the “Licence Expiry Date”).

Unless the context otherwise admits or requires, words and expressions used in this Licence shall bear the meanings assigned to them in the Act, or Regulations, as the case may be.

Signed: _____

Part 1

Licence Conditions

- (1) The Licensee may keep, have possession of, install and maintain the Apparatus detailed in Part 2 of this Licence.
- (2) The Licensee shall not work or use the Apparatus detailed in Part 2 of this Licence.

Part 2

Statement of Authorised Apparatus

To Include:

Region	Commencement Date	Expiry Date	Description of Apparatus
	<i>DD Month YYYY</i>	<i>DD Month YYYY</i>	

SCHEDULE 4

WIRELESS TELEGRAPHY ACT, 1926

WIRELESS TELEGRAPHY (LICENCES IN THE 3.6 GHz BAND) REGULATIONS

**3.6 GHz Band Transition Protected Licence for terrestrial systems capable of providing
Electronic Communications Services**

Licence under section 5 of the Wireless Telegraphy Act, 1926, to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services.

The Commission for Communications Regulation, in exercise of the powers conferred on it by section 5 (as substituted by section 182 of the Broadcasting Act 2009 (No. 18 of 2009)) of the Wireless Telegraphy Act, 1926 (No. 45 of 1926) (“the Act”), hereby grants to the Licensee specified in **Part I** of this Licence authorisation to keep and have possession of Apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services as specified in **Part III** to this Licence, subject to such Apparatus being installed, maintained, worked and used for the provision of FWA services in accordance with the relevant terms and conditions and restrictions set out in the Wireless Telegraphy (Licences in the 3.6 GHz Band) Regulations, 2016 (S.I. No. _____ of 2016) (“the Regulations”) including, but not limited to, the following:

- (1) The Licensee shall ensure that it complies with all of the relevant conditions contained within the Regulations, under which this Licence is issued, and within Parts IV, V, VII and VIII of this Licence; and
- (2) The Licensee shall ensure that it makes payment of all fees as detailed in the Regulations under which this Licence is issued.

This Licence shall come into effect on the date specified in Part VII to this Licence (the “Licence Commencement Date”) and, subject to revocation, suspension or withdrawal, expires on the termination date specified in Part VII to this Licence (the “Licence Expiry Date”).

Unless the context otherwise admits or requires, words and expressions used in this Licence shall bear the meanings assigned to them in the Act, or Regulations, as the case may be.

Signed: _____

For and on behalf of the Commission for Communications Regulation

Date of Issue: _____

Official Stamp

Part A

Definitions

1. The following additional definitions shall apply to this Licence:

“Interference Contour” means a circle around the Centre Point of the FWALA service area with a radius of 30km; and

“Minimum Loading Criteria” means criteria set down by the Commission to define the minimum usage of the frequency channel used by the FWA apparatus

Part B

Commencement and Expiry dates per FWALA Service Area

FWALA Service Area Reference Number	Existing Licence Reference Number	Centre Point of FWALA Service Area	Frequency Assigned	Commencement Date	Expiry Date
			<i>From _____ MHz to _____ MHz and From _____ MHz to _____ MHz</i>	<i>DD Month YYYY</i>	<i>DD Month YYYY</i>

Part I

Licensee

Part II

Address for notices

Part III

Description and Characteristics of Fixed Wireless Access Apparatus

Part IV

Technical Conditions for Fixed Wireless Access Apparatus

Part V

Minimum Loading Criteria, if applicable

Part VI

Roll-out Plan, if applicable

Part VII

Licence commencement and termination dates

Part VIII

Commitments made by the licensee in the course of a comparative evaluation selection procedure

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SCHEDULE 5

WIRELESS TELEGRAPHY ACT, 1926

WIRELESS TELEGRAPHY (LICENCES IN THE 3.6 GHz BAND) REGULATIONS

3.6 GHz Band Transition Unprotected Licence for terrestrial systems capable of providing Electronic Communications Services

Licence under section 5 of the Wireless Telegraphy Act, 1926, to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services on a Non-Interference and Non-Protected Basis.

The Commission for Communications Regulation, in exercise of the powers conferred on it by section 5 (as substituted by section 182 of the Broadcasting Act 2009 (No. 18 of 2009)) of the Wireless Telegraphy Act, 1926 (No. 45 of 1926) (“the Act”), hereby grants to the Licensee specified in **Part I** of this Licence authorisation to keep and have possession of Apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services as specified in **Part III** to this Licence, subject to such Apparatus being installed, maintained, worked and used for the provision of FWA services in accordance with the relevant terms and conditions and restrictions set out in the Wireless Telegraphy (Licences in the 3.6 GHz Band) Regulations, 2016 (S.I. No. of 2016) (“the 3.6 GHz Band Regulations”) including, but not limited to, the following:

- (1) The Licensee shall ensure that it complies with all of the relevant conditions contained within the 3.6 GHz Band Regulations, under which this Licence is issued, and within Parts IV, V, VII and VIII of this Licence; and
- (2) The Licensee shall ensure that it makes payment of all fees as detailed in the 3.6 GHz Band Regulations under which this Licence is issued.

This Licence shall come into effect on the date specified in Part VII to this Licence (the “Licence Commencement Date”) and, subject to revocation, suspension or withdrawal, expires on the termination date specified in Part VII to this Licence (the “Licence Expiry Date”).

Unless the context otherwise admits or requires, words and expressions used in this Licence shall bear the meanings assigned to them in the Act, or Regulations, as the case may be.

Signed: _____

For and on behalf of the Commission for Communications Regulation

Date of Issue: _____

Official Stamp

Part A

Definitions

1. The following additional definitions shall apply to this Licence:
 - “Minimum Loading Criteria” means criteria set down by the Commission to define the minimum usage of the frequency channel used by the FWA apparatus

Part B

Commencement and Expiry dates per FWALA Service Area

FWALA Service Area Reference Number	Existing Licence Reference Number	Centre Point of FWALA Service Area	Frequency Assigned	Commencement Date	Expiry Date
			<i>From _____ MHz to _____ MHz and From _____ MHz to _____ MHz</i>	<i>DD Month YYYY</i>	<i>DD Month YYYY</i>

Part I

Licensee

Part II

Address for notices

Part III

Description and Characteristics of Fixed Wireless Access Apparatus

Part IV

Technical Conditions for Fixed Wireless Access Apparatus

Part V

Minimum Loading Criteria, if applicable

Part VI

Roll-out Plan, if applicable

Part VII

Licence commencement and termination dates

Part VIII

Commitments made by the licensee in the course of a comparative evaluation selection procedure

DRAFT

SCHEDULE 6

Reserve price for Type A and Type B Spectrum Block per Region

Region	Reserve Price per Type A Spectrum Block €	Reserve Price per Type B Spectrum Block €
Border, Midlands and West	114,000	22,800
South West	72,000	14,400
East	64,000	12,800
South East	44,000	8,800
CSO Boundary for Dublin City and Suburbs	178,000	35,600
CSO Boundary for Cork City and Suburbs	34,000	6,800
CSO Boundary for Limerick City and Suburbs	16,000	3,200
CSO Boundary for Galway City and Suburbs	14,000	2,800
CSO Boundary for Waterford City and Suburbs	8,000	1,600

SCHEDULE 7

**Annual Spectrum Usage Fee before CPI Adjustment for Type A and Type B Spectrum
Blocks per Region**

Region	Annual Spectrum Usage Fee before CPI Adjustment per Type A Spectrum Block €	Annual Spectrum Usage Fee before CPI Adjustment per Type B Spectrum Block €
Border, Midlands and West	17,670	3,534
East	12,800	1,984
South East	8,800	1,364
South West	14,400	2,232
CSO Boundary for Dublin City and Suburbs	35,600	5,518
CSO Boundary for Cork City and Suburbs	6,800	1,054
CSO Boundary for Limerick City and Suburbs	3,200	496
CSO Boundary for Galway City and Suburbs	2,800	434
CSO Boundary for Waterford City and Suburbs	1,600	248

SCHEDULE 8

Annual fee per FWALA Service Area in a 3.6 GHz Band Transition Protected Licence

Radio frequency spectrum bandwidth (paired channel)	Annual Fee (€)
Up to 7MHz	1500
Over 7 MHz and up to 14 MHz	2000
Over 14 MHz and up to 28 MHz	2800

The fee for an unpaired channel is calculated by reference to its “equivalent” paired channel bandwidth.

Where a spectrum rights for a FWALA Service Area in a Licence is granted for a portion of a year the fee to be paid by the licensee shall be calculated as follows:

$$A \times (B/12) = C$$

Where:

- A is the relevant annual fee set out in this Schedule;
- B is the number of whole months for which the spectrum rights for a FWALA Service Area in the Licence is granted (if granted for a period of less than one month then, for the purpose of these calculations only, it shall be considered as a being granted for a period of one month); and
- C is the appropriate fee to be paid.

GIVEN under the official seal of the Commission for Communications Regulation this

2016

Jeremy Godfrey, Commissioner

For and on behalf of the Commission of Communications Regulation

The Minister for Communications, Energy and Natural Resources consents to the making of the foregoing Regulations.

GIVEN under the Official Seal of the Minister for Communications, Energy and
Natural Resources this

2016

[XXXX YYYY T.D].

Minister for Communications Energy and Natural Resources

EXPLANATORY NOTE

(This note is not part of the Instrument and does not purport to be a legal interpretation.)

These Regulations prescribe matters in relation to licences for apparatus for Wireless Telegraphy for terrestrial systems capable of providing Electronic Communications Services in the 3.6 GHz band.

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Annex 3: Application Form¹²⁰

Applicants must complete Parts 1, 2 and 3 of this Application Form. Any additional documentation required to be supplied by the Applicant as part of its Application is to be appended to this Application Form.

Part 1: Administrative Information

For an Application to be complete, the administrative information listed in Table 1 below must be provided. Note that the Applicant name provided will be that to whom licences will be awarded where relevant. Contact details for Authorised Agents are those that will be used by ComReg for circulating Bidder Materials for the Auction and for contacting the Bidder during the Auction if necessary.

Information required	Information provided
Name of Applicant*	Name:
Complete postal address of registered office , or if it does not have a registered office, the principal place where it carries on business, and, if different, address to which all communications will be sent regarding the Award Process	Address 1:
	Address 2 (if different):
Telephone/ fax number for Applicant	Telephone: Fax:
Bank details of Applicant (for the purpose of returning part	

¹²⁰ A writeable PDF format of this form will be made available on the ComReg website.

Information required	Information provided
or all of the Applicant's Deposit where applicable)	Name of Bank and address of relevant branch: Account Number: Sort Code: BIC Code: IBAN No:
Name of Applicant's Authorised Agent 1** (Block capitals)	Name:
Position of Applicant's Authorised Agent 1	Position:
Telephone numbers, fax number and e-mail address of Applicants Authorised Agent 1	Telephone (fixed): Telephone (mobile): Fax: Email:
Specimen signature of Applicant's Authorised Agent 1 Witnessed By	Signature 1: Name: Position: Signature:
Name of Applicant's Authorised Agent 2*** (Block capitals)	Name:

Information required	Information provided
Position of Applicant's Authorised Agent 2	Position:
Telephone numbers, fax number and e-mail address of Applicants Authorised Agent 2	Telephone (fixed): Telephone (mobile): Fax: Email:
Specimen signature of Applicant's Authorised Agent 2 Witnessed By	Signature: Name: Position: Signature:

Table 1: Administrative information

* Note: In the case of Applicants that are bodies corporate, attach a certified copy of Certificate of Registration along with Articles of Association and Memorandum of Association or equivalent together with a certified translation thereof into English or Irish, where the original is not in English or Irish. Company Secretary or authorised signatory is required to certify the copy.

** Note: Authorised Agents must be authorised to bind the Bidder and to take all decisions or communicate all decisions connected with the Auction on the Bidder's behalf including, but not limited to, the authority to submit Bids in respect of any of Lots available in the Award Process and to commit to payment of the necessary amount if the Bidder is granted spectrum. If Applicants wish to have the ability to participate in the Assignment Stage as part of an Alliance, Authorised Agents must further be authorised to delegate the power to make Assignment Stage Bids, which are binding on the Applicant on a joint and several basis with all members of the Alliance, to up to two Authorised Agents of another member of the Alliance.

*** Note: Applicants can authorise one more person, who could act as the Alternate Authorised Agent in case of unavailability of the primary Authorised Person. In case of any duplication of submissions made on behalf of the Bidder by different Authorised Agents, the submission made by the first Authorised Agent would be considered as final and binding.

Appropriate evidence of the authorisation of Authorised Agents, as per Section 3.3.2 of the Information Memorandum, must be attached hereto.

Part 2: Applicant Declaration

The terms “Auction Rules”, “Associated Persons”, “Applicant”, “Bidding Group”, “Connected Person”, “Confidential Information” and “Insider” for the purposes of this declaration shall be construed as defined in the Information Memorandum.

We, the undersigned, being Authorised Agents of [_____] (the “**Applicant**”) hereby undertake, warrant and declare, and to the extent that anything contemplated hereunder remains to be done, covenant, both on our own behalf and on behalf of the Applicant, having made all reasonable inquiries that:

1. The Applicant is entitled to submit the Application and participate in the Award Process, and the Applicant has obtained all necessary declarations of consent, permissions and approvals.
2. The Applicant has ensured and will ensure that all information and all declarations contained in the Application and appendices attached thereto are correct and accurate.
3. The Applicant has and will ensure that the Applicant, discloses Confidential Information only to the extent it is necessary and then, save as expressly permitted by the Information Memorandum, only to other parties within the Applicant's own Bidding Group or to persons who, prior to such disclosure, are Insiders in relation to the same Applicant and that the Applicant shall take all reasonable measures with a view to ensuring that the person who receives such Confidential Information treats it as confidential at all times.
4. The Applicant has ensured and will ensure that the Applicant, the Applicant's employees, board of directors (where Applicant is a body corporate) and persons connected with the Applicant or Insiders refrain from disclosing Confidential Information to parties other than as specified in paragraph 3 above until public announcement on the outcome of the Award Process and from exchanging Confidential Information with other parties regarding the Applicant's strategy for obtaining and use of the Licence or Licences.
5. Save as expressly permitted by the Information Memorandum, the Applicant will ensure that the Applicant and any Connected Persons and any Insiders - shall refrain from entering into agreements or negotiations with a view to entering into agreements with other interested parties or their Connected Persons in relation to matters concerning the Award Process, including without prejudice to the generality of the foregoing agreements relating to spectrum, network or infrastructure sharing, from the time at which this Application is submitted to the date of the issue of the Licences.

6. The Applicant has ensured and will ensure that the Applicant - and, to the best knowledge of the Applicant, any Connected Persons and any Insiders - neither prior to the submission of the Application, nor after the submission thereof and until the Licences have been issued, shall enter into agreements or establish any understanding with a provider of equipment or software which:
 - regulates such provider's possibility of supplying equipment or software to another Applicant or their Connected Persons concerning the planning, establishment or operation of a network using the frequencies dealt with in this Award Process, or
 - regulate the prices or other terms and conditions that a provider of equipment or software may offer another Applicant or their Connected Persons in connection with the planning, establishment or operation of a network using the frequencies dealt with in this Award Process.

The Applicant has ensured that agreements already entered into or understandings already established, as mentioned in this paragraph 6, have been terminated, and to the best knowledge of the Applicant, any Connected Persons and any Insider have ensured that any such agreements or understandings have been terminated.

7. The Applicant has ensured and will ensure that the Applicant - and, to the best knowledge of the Applicant, any Connected Persons and any Insider - does not enter into agreements or establish any understanding with a third party, either prior to or during the Award Process, for the access to or the use of the Applicant's network or networks using the frequencies dealt with in this Award Process, if the agreement or the understanding directs such third party not to participate or limits such third party's ability to participate in the Award Process.
8. The Applicant has ensured that agreements already entered into or understandings already established, as mentioned in the above paragraph, have been terminated, including to the best knowledge of the Applicant, any Connected Persons and any Insider have ensured such agreements or understandings have been terminated.
9. The Applicant has ensured and will ensure that the Applicant – and, to the best knowledge of the Applicant, any Connected Persons and any Insiders – both prior to and after the submission of an Application and until the Licences have been issued, refrains from any action that could have an adverse effect on the Award Process.
10. The Applicant shall comply with the Auction Rules as contained in the Information Memorandum including, without limitation, the provisions of

Chapter 5 at all times and shall procure that its personnel, Insiders and Connected Persons, to the extent appropriate, shall also comply with the Auction Rules from the date of publication of the Information Memorandum until the commencement of the Licences.

11. The Applicant has ensured and will ensure that prior to the filing of its Application, the Applicant takes all reasonable measures with a view to identifying its Connected Persons and Associated Persons.
12. The Applicant will ensure that, in accordance with Section 3.3 of the Information Memorandum, after submitting its Application all relevant changes to its ownership structures are notified to ComReg.
13. Save as disclosed in an appendix attached to this Declaration, the Applicant is (i) not, or, in case the Applicant is a partnership, a joint venture or equivalent, the relevant partners or participants are not, nor is expected to be subject to an insolvency process including, without prejudice to the generality of the foregoing, liquidation, examinership, receivership, bankruptcy, winding-up proceedings or equivalent proceedings in other jurisdictions and (ii) capable of paying its debts as they fall due.
14. Save as disclosed in an appendix attached to this Declaration, the Applicant is not, or, in case the Applicant is a partnership, a joint venture or equivalent, the relevant partners or participants are not, nor is expected to be involved in any disputes which may in any material and adverse way affect the Applicant's possibility of complying with the terms of the Licence, if the Applicant is awarded such Licence.
15. The Applicant agrees that any disclosure made under paragraph 13 and/or paragraph 14 above must contain sufficiently clear and detailed information to allow ComReg assess the Applicant's capacity to participate in the Award Process, to comply with the Auction Rules and to comply with the terms of the Licence. The Applicant agrees that ComReg's decision further to any assessment in this respect shall be final and that ComReg reserves the right to, where necessary and proportionate, seek further information or clarification from an Applicant, to specify the level of detail required and the timescales within which it must be provided. The Applicant agrees that any failure to cooperate fully with this disclosure requirement may result in an Applicant's Application being deemed invalid or in subsequent disqualification of the Applicant from the Award Process.
16. The Applicant agrees that, even if they are unsuccessful in becoming a Bidder, they remain bound by the Auction Rules, including those on confidentiality and

Bidder behaviour, until a public announcement on the outcome of the Award Process is made by ComReg.

17. The Applicant has the legal capacity to enter into an Alliance, and we have been expressly authorised by the Applicant to:*

- notify ComReg that the Applicant has joined an Alliance for the purpose of bidding in the Assignment Stage; and
- delegate the power to make Assignment Stage Bids, which are binding on the Applicant on a joint and several basis with all members of such an Alliance, to up to two Authorised Agents of another member the Alliance.

18. The Applicant has not put in train any steps for the formation of an Alliance and will not do so until it is informed of the results of the Main Stage.

**Delete entire paragraph 17 if the Applicant does not wish to have the ability to make Assignment Stage Bids as part of an Alliance.*

Applicant Name: _____

For and on behalf of the Applicant:

(Signature of those persons who are empowered to bind the Applicant or otherwise authorised to bind the Applicant)

Name in block capitals: _____

Date (DD/MM/YYYY):

--	--	--	--	--	--	--	--

If the Applicant is a partnership, a joint venture or equivalent, the Declaration must also be signed by the relevant partners or participants:

As partner/participant:

(Signature)

Name in block capitals: _____

Date (DD/MM/YYYY):

--	--	--	--	--	--	--	--

Part 3: Initial Bid Form

The submission of this Initial Bid Form as part of a complete Application represents a binding offer to licence the Lots specified herein in exchange for the upfront and annual fees linked to each of the specified Lots. The Initial Bid Form, including Lots in all Lot categories, Reserve Prices and Associated Eligibility Points are presented in Table 2 below. Note that for an Initial Bid Form to be valid, it must:

- Adhere to the Auction Rules on Competition Caps; and
- Be accompanied by a Deposit paid into ComReg's bank account that shall at least correspond to the sum of the Reserve Prices of Lots requested by the Applicant by the deadline of [to be inserted in final Information Memorandum].

All Deposits are to be paid into ComReg's bank account. Transfers to ComReg's account should be made to:

Bank of Ireland, 2 College Green, Dublin 2, Ireland.
 Account Number: 96614639
 Sort Code: 90-00-17
 BIC Code: BOFIIIE2D
 IBAN No: IE96 BOFI 9000 1796 6146 39

If making a bank transfer/EFT, please ensure that:

- Reference is "3.6 GHz Award"
- Your Bank quotes your Account Number (if an existing ComReg account holder) in making the transfer to ComReg.

Information Required	Information Provided
Applicant Name:	
Total no. Lots applied for:	
Total amount of Deposit:	

Lot Category	Region	Frequency band	Number of Lots available	Lot size	Reserve Price per Lot (€)	Annual SUF per Lot (€)	Eligibility Points per Lot	Number of Lots applied For per Lot Category
A1	Border, Midlands & West	3 410 – 3 435 MHz	1	25 MHz	114,000	17,670	50	
B1	Border, Midlands & West	3 475 – 3 800 MHz	65	5 MHz	22,800	3,534	10	
A2	South West	3 410 – 3 435 MHz	1	25 MHz	72,000	11,160	25	
B2	South West	3 475 – 3 800 MHz	65	5 MHz	14,400	2,232	5	
A3	East	3 410 – 3 435 MHz	1	25 MHz	64,000	9,920	25	
B3	East	3 475 – 3 800 MHz	65	5 MHz	12,800	1,984	5	
A4	South East	3 410 – 3 435 MHz	1	25 MHz	44,000	6,820	25	
B4	South East	3 475 – 3 800 MHz	65	5 MHz	8,800	1,364	5	
A5	Dublin CSO boundary for City and Suburbs	3 410 – 3 435 MHz	1	25 MHz	178,000	27,590	75	
B5	Dublin CSO boundary for City and Suburbs	3 475 – 3 800 MHz	65	5 MHz	35,600	5,518	15	
A6	Cork CSO boundary for City and Suburbs	3 410 – 3 435 MHz	1	25 MHz	34,000	5,270	10	
B6	Cork CSO boundary for City and Suburbs	3 475 – 3 800 MHz	65	5 MHz	6,800	1,054	2	
A7	Limerick CSO boundary for City and Suburbs	3 410 – 3 435 MHz	1	25 MHz	16,000	2,480	5	
B7	Limerick CSO boundary for City and Suburbs	3 475 – 3 800 MHz	65	5 MHz	3,200	496	1	
A8	Galway CSO boundary for City and Suburbs	3 410 – 3 435 MHz	1	25 MHz	14,000	2,170	5	

Lot Category	Region	Frequency band	Number of Lots available	Lot size	Reserve Price per Lot (€)	Annual SUF per Lot (€)	Eligibility Points per Lot	Number of Lots applied For per Lot Category
B8	Galway CSO boundary for City and Suburbs	3 475 – 3 800 MHz	65	5 MHz	2,800	434	1	
A9	Waterford CSO boundary for City and Suburbs	3 410 – 3 435 MHz	1	25 MHz	8,000	1,240	5	
B9	Waterford CSO boundary for City and Suburbs	3 475 – 3 800 MHz	65	5 MHz	1,600	248	1	

Table 2: Initial Bid Form

Applicant Name: _____

(Signature of those persons who are empowered to bind the Applicant or otherwise authorised to bind the Applicant)

Name in block capitals: _____

Date (DD/MM/YYYY):

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Application Checklist

Tick the boxes to ensure that all the required information is included in your Application. A complete Application must consist of the following:

Part 1: Administrative Information - All sections of Table 1 completed and signed.

- Appropriate evidence for signatory of Application as specified in Section 3.3.2
- Ownership Structure Document as specified in Section 3.3.2

Part 2: Applicant Declaration signed

Part 3: Lot Application Form completed and signed

Application Procedure

The Application procedure is set out in Section 3.3.6 of the Information Memorandum and states that

In order to take part in the Award Process, Applicants must submit four completed and identical Application Forms on paper including four identical copies of an Ownership Structure Document on paper and an electronic copy of same in an editable format on CD-ROM. The container(s) in which the Application Form and Ownership Structure Documents and CD-ROM are submitted must not in any way disclose the identity of the Applicant. ComReg will only accept Applications during the week of [ComReg will insert details in the final Information Memorandum].

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 [ComReg will insert contact details in the final Information Memorandum]

All Applications will be date and time stamped. Applicants will be given a receipt acknowledging the submission of its Application. Applications will not be opened until the closing date for receipt of Applications has passed. Applications will be opened in the presence of an independent auditor.

An Application can be replaced at any time up to 16.00 Irish time on the last day for receipt of Applications on [ComReg will insert details in the final Information Memorandum]. In the event that an Applicant submits more than one Application prior to 16.00 on the Application Date, only the latest Application received from that Applicant will be taken into consideration.

On the submission of a second or subsequent Application prior to the deadline for submission of Applications, the Applicant must return the receipt for the prior Application to ComReg. This receipt will be endorsed to indicate that the earlier Application had been superseded and will not be evaluated. However, any superseded Applications will not be returned until after the Qualification Stage of the Award Process.

No Applications will be opened by ComReg until after 16.00 hours (Irish time) on the closing date for receipt of Applications.

The deadline for receipt of Deposits, as set out in Section 3.3.2 of the Information Memorandum will be [ComReg will insert details in the final Information Memorandum].

Annex 4: Alliance Notification Form¹²¹

Winning Bidders wishing to notify ComReg of the formation of an Alliance must complete Parts 1 and 2 of this notification form.

Part 1: Administrative Information

We, hereby notify ComReg that we have formed an Alliance for the purposes of the Assignment Stage of the Award Process

Names of Alliance Members		Information provided
Name of Winning Bidder 1 (The Leading Member)		
Name of Winning Bidder 2		
Name of Winning Bidder 3		
Name of Winning Bidder 4		
Name of Winning Bidder 5 ¹²²		
Agents authorised to bind the Alliance		
Agent 1		Name:
Agent 2		Name:

Table 1: Administrative information

* This form must be signed by an Authorised Agent on behalf of each Winning Bidder participating in the Alliance. Forms signed by one, or more Winning Bidders may be exchanged between Winning Bidders by Fax, or scanned email copies and in signing this form Winning Bidders agree that such a composite copy shall be binding.

* Note: An Alliance may nominate at most two individuals who may act as Authorised Agent, on behalf of the Alliance as a whole in submitting Assignment Stage bids. In case of any duplication of submissions made on behalf of the Alliance by different Authorised Agents, the submission made by the first Authorised Agent would be considered as final and binding.

¹²¹ A writeable PDF format of this form will be made available on the ComReg website.

¹²² Add continuation sheets if there are more than 5 Winning Bidders participating in the Alliance.

Part 2: Alliance Declaration

The concepts of “Alliance”, “Assignment Round”, “Auction Rules”, “Connected Person”, “Insider”, and “Winning Bidder” for the purposes of this declaration shall be construed as defined in the Information Memorandum.

We, the undersigned, each being an Authorised Agent of a Winning Bidder (a “**Member**”) the Alliance hereby undertake, warrant and declare, and to the extent that anything contemplated hereunder remains to be done, covenant, on our own behalf and on behalf of the Member for whom we act, that:

1. The Alliance has been formed in accordance with the rules set out in the Information Memorandum.
2. The Member for whom we act has ensured and will ensure that all information and all declarations contained in this form are correct and accurate.
3. The Alliance and each of the Members shall comply with the Auction Rules as contained in the Information Memorandum including, without limitation, the provisions of Chapter 5 at all times and shall procure that each Member’s personnel, Insiders and Connected Persons, to the extent appropriate, shall also comply with the Auction Rules.
4. Each of the Members of the Alliance hereby confirms that it shall be bound by any bid submitted in the Assignment Round by either of the Alliance Authorised Agents set out above, which agents are each Authorised Agents on behalf of a Member.

Name of Winning Bidder 1 – the “Leading Member” (in block capitals)

(Signature Authorised Agent of Winning Bidder)

Name in block capitals: _____

Date (DD/MM/YYYY):

--	--	--	--	--	--	--	--	--	--

Name of Winning Bidder 2 (in block capitals)

(Signature Authorised Agent of Winning Bidder)

Name in block capitals: _____

Date (DD/MM/YYYY):

--	--	--	--	--	--	--	--

Name of Winning Bidder 3 (in block capitals)

(Signature Authorised Agent of Winning Bidder)

Name in block capitals: _____

Date (DD/MM/YYYY):

--	--	--	--	--	--	--	--

Name of Winning Bidder 4 (in block capitals)

(Signature Authorised Agent of Winning Bidder)

Name in block capitals: _____

Date (DD/MM/YYYY):

--	--	--	--	--	--	--	--

Name of Winning Bidder 5 (in block capitals)¹²³

(Signature Authorised Agent of Winning Bidder)

Name in block capitals: _____

Date (DD/MM/YYYY):

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¹²³ Add continuation pages if more than 5 Members.

Annex 5: Worked Example of Activity Rules for the Primary Bid Rounds and Caps on Supplementary Bids

- A 5.1 This annex presents a worked example to illustrate the mechanics of the Main Stage, including the Primary Bid Rounds and the Supplementary Bids Round. Bidders should note that the EAS will automatically compute all the calculations (similar to those described below e.g. Bid Amounts for the Primary Bid Rounds, required Chain Bids, floors and caps on Supplementary Bids). Prior to the start of the Auction (if any) ComReg will initiate a schedule of at least one mock Auction for Bidders to facilitate their understanding of practicalities of participating in the award.
- A 5.2 The Supplementary Bids Round example is shown in several variations to illustrate how the Application of the caps can differ depending on a Bidder's Final Primary Package.
- A 5.3 The first part of the example shows how a Bidder can state its demand for Lots in Primary Bid Rounds and change it as Round Prices evolve, including:
- changing the number of Lots it bids for;
 - switching between Regions;
 - switching between Lot Types; and
 - using Relaxed Primary Bids.
- A 5.4 The example then proceeds to illustrate the mechanics of the Supplementary Bids Round and the constraints that apply to Supplementary Bids.
- A 5.5 Bidders will be assisted with their Bid decisions throughout the Auction by the Electronic Auction System (EAS), which will automatically make the necessary calculations on behalf of the Bidder (e.g. calculating the Bid Amount and Eligibility Associated with the Bidder's selected Package during the Primary Bid Rounds, calculating the relevant floors and caps that apply to Supplementary Bids) and will allow the Bidder to check this information before either confirming or amending its Bid decisions.

A4.1 Set-up

- A 5.6 The example presented in this annex is based on some simple assumptions about the Lot Categories available and about a particular Bidder's valuations for different Packages.

A 5.7 The example assumes there are two Regions (Region 1 and Region 2) with two Lot types (A and B) in each Region; A-Lots are frequency-specific whereas B-Lots are frequency-generic. This gives four Lot Categories in total (A1, B1, A2 and B2).

A 5.8 Eligibility Points assigned to the A-Lots are five times as high as for B-Lots. For simplicity, the Eligibility Points for Region 1 and Region 2 are the same. Lot Category information is summarised in Table 1 below.

Lot Category	Number of Lots	Size	Eligibility Points
A1	1	25 MHz	5
B1	65	5 MHz	1
A2	1	25 MHz	5
B2	65	5 MHz	1

Table 1: Example Lot Categories and Eligibility Points

A 5.9 There are no Competition Caps in this example.

A 5.10 The example focuses on a Bidder with Initial Eligibility of 8.

A 5.11 Suppose the Bidder is interested in winning spectrum in just one Region – either Region 1 or Region 2. The Bidder wishes to acquire at least 40 MHz in Region 1, or at least 25 MHz in Region 2. The Bidder wishes to acquire a contiguous frequency assignment within each Region, meaning that it may consider bidding for either of the Lot Types in Region 2 (where it could obtain 25 MHz of contiguous spectrum by winning one A-Lot or five B-Lots), but it will not consider bidding for the A-Lot in Region 1 (because by winning the A-Lot and winning at least 40 MHz in total the Bidder would receive a non-contiguous frequency assignment).

A 5.12 More specifically, suppose the Bidder is interested in the following Packages, and has estimated a valuation for each Package representing the net present value of profit that the Bidder would expect to generate from the use of the spectrum, based on the Bidder's particular business case.

Lots in Package			Valuation (€)	Eligibility Points
B1	A2	B2		
8	0	0	440,000	8
0	0	8	435,000	8
0	0	6	350,000	6
0	0	5	305,000	5
0	1	0	260,000	5

Table 2: Packages of Lots and corresponding valuations and Eligibility

A 5.13 In this example, the Bidder will make bidding decisions based on the ‘surplus’ Associated with each Package. Surplus is calculated by subtracting the Bid Amount for a Package from the Bidder’s valuation for that Package. For example, if the Bidder bids for eight B1 Lots and the Bid Amount is €400,000, the surplus Associated with this Bid is €40,000.

A 5.14 Defined in this way, the surplus represents the net return that the Bidder would expect if it won the Package and it were required to pay a Base Price exactly equal to the Bid Amount. In the price determination, Bid Amounts act as upper bounds on possible Base Prices, so the Base Price will be less than or equal to the Bid Amount. Therefore, the surplus is a lower bound on the net return that the Bidder would expect if it won the Package.¹²⁴

A 5.15 For the purposes of this example we assume that the Bidder bids according to its valuations, in the sense that:

- it will never bid for a Package when the surplus is negative, because this would entail the possibility of winning spectrum with a negative expected return; and
- when there are multiple Packages with positive surplus, the Bidder will prefer to bid on the Package that has the highest surplus, as this is the Package that gives the highest expected return.¹²⁵

A4.2 Primary Bid Rounds

Initial Bid

A 5.16 During the Application Stage, Bidders must specify the number of Lots in each Lot Category they would want to acquire at Reserve Prices. The Package specified and corresponding total price is the Bidder’s Initial Bid.

A 5.17 In our example, the Bidder is interested only in Lot Categories B1, A2 and B2. The Reserve Price per Lot for each of these Lot Categories are as set out in Table 3 below.

Lot Category	Round price (€)	1
B1	38,000	
A2	198,000	
B2	38,000	

Table 3: Reserve Prices

¹²⁴ For simplicity, here we ignore any Additional Price that the Bidder may have to pay following the Assignment Stage.

¹²⁵ We do not consider the possibility of ties as these do not arise in the example.

A 5.18 Based on these prices, the Bidder can calculate the surplus Associated with each of the five Packages it is interested in. As explained in the previous section, the surplus is calculated as the Bidder's valuation for a Package minus the relevant price for that Package (in this case, based on Reserve Prices). The surplus for each Package at Reserve Prices is shown in Table 4 below, with the Bidder's preferred Package¹²⁶ highlighted in green.

Package			Valuation (€)	Reserve Prices (€)	Surplus (€)
B1	A2	B2			
8	0	0	440,000	304,000	136,000
0	0	8	435,000	304,000	131,000
0	0	6	350,000	228,000	122,000
0	0	5	305,000	190,000	115,000
0	1	0	260,000	198,000	62,000

Table 4: Bidder's preferences at Reserve Prices

A 5.19 The Bidder would therefore want to be awarded eight B1 Lots at Reserve Prices and this would be the Package it would include in its Initial Bid, with an Associated Bid Amount of €304,000.

A 5.20 The Bidder's Initial Eligibility is therefore 8, equal to the sum of the Eligibility Points assigned to each of the Lots included in the Package selected in its Initial Bid.

A 5.21 The prices in the first Primary Bid Round are dependent on the level of Aggregate Demand for each Lot Category based on Initial Bids (i.e. the sum of the demand from all Bidders in their Initial Bids). For any Lot Category where there was excess demand (i.e. Aggregate Demand exceeded the number of Lots available) at Reserve Prices, the price per Lot would be increased for Round 1. For any Lot Category with no excess demand based on Initial Bids, the Round Price would be equal to the Reserve Price for that Lot Category.

A 5.22 Suppose that the Initial Bids submitted resulted in excess demand for all three Lot Categories in which the Bidder is interested, so all three prices will be increased relative to Reserve Prices for the first Primary Bid Round.

¹²⁶ Note that references to a Bidders preferred Package in this example mean the Package that maximises the Bidder's surplus at given prices (e.g. Reserve Prices or prevailing Round Prices in the current Primary Bid Round). As the Primary Bid Rounds progress, the Bidder's preferred Package may change relative to the Package specified in its Initial Bid,(or earlier Primary Bid Rounds), in line with changing relative prices.

Lot Category	Reserve Price (€)	Aggregate Demand	Excess demand	Round 1 price (€)
B1	38,000	95	30	40,000
A2	198,000	2	1	200,000
B2	38,000	85	20	40,000

Table 5: Round 1 Prices

The first Primary Bid Round

A 5.23 In the first Primary Bid Round, Bidders need to state their demand for the different Lot Categories at the Round 1 prices. The EAS will display Lot Category information and prices; Bidders simply need to select the number of Lots that they wish to Bid for in each Lot Category.

A 5.24 Based on the Round 1 prices, the Bidder can calculate the surplus Associated with each of the five Packages it is interested in. The surplus for each Package is shown in Table 6 below, with the Bidder's preferred Package at Round 1 prices highlighted in green.

Package			Valuation (€)	Package price at current Round Prices (€)	Surplus (€)
B1	A2	B2			
8	0	0	440,000	320,000	120,000
0	0	8	435,000	320,000	115,000
0	0	6	350,000	240,000	110,000
0	0	5	305,000	200,000	105,000
0	1	0	260,000	200,000	60,000

Table 6: Bidder's preferences in Round 1

A 5.25 The Bidder would therefore Bid in the first round for a Package of eight B1 Lots. Upon entering this selection, the EAS would calculate and display the Bid Amount corresponding to this Package (€320,000) and the Eligibility of the Package (8), allowing the Bidder to confirm the decision (or to change the selection if it so wished). The Bidder's Activity in the round is equal to the Bidder's Initial Eligibility, so the Bidder maintains its Eligibility for the next Primary Bid Round.

A 5.26 Once Round 1 has finished, all Bidders receive information about Aggregate Demand for all Lot Categories (i.e. the sum of the demand from all Bidders in that Primary Bid Round). The Lot Categories with excess demand (i.e. more Aggregate Demand than there are Lots available) would increase in price. To illustrate this, Table 7 shows Aggregate Demand for the three Lot Categories the Bidder is interested in for this example. At the end of Round 1 there is excess demand in all three Lot Categories, so all three prices will increase in the next Primary Bid Round.

Lot Category	Round1 price (€)	Aggregate Demand	Excess demand	Round 2 prices (€)
B1	40,000	95	30	43,000
A2	200,000	2	1	201,000
B2	40,000	85	20	41,000

Table 7: Round 1 results

Switching between Regions

A 5.27 From one Primary Bid Round to another, a Bidder is free to change the number of Lots that it bids for in different Regions, as long as the Eligibility of the Package Bid for does not exceed the Bidder's Eligibility.

A 5.28 In Round 2, the Bidder again decides which Package to bid for by choosing the Package with the highest surplus based on Round 2 prices, as shown in Table 8 below.

Package			Valuation (€)	Package price at current Round Prices (€)	Surplus (€)
B1	A2	B2			
8	0	0	440,000	344,000	96,000
0	0	8	435,000	328,000	107,000
0	0	6	350,000	246,000	104,000
0	0	5	305,000	205,000	100,000
0	1	0	260,000	201,000	59,000

Table 8: Bidder's preferences in Round 2

A 5.29 After a relatively large increase in the price of B1 Lots, the preferred Package is now the Package of eight B2 Lots. The Bidder Bids for this Package. The Eligibility of this Package, 8, is equal to the Bidder's Eligibility, so the Bidder maintains its Eligibility for the next Primary Bid Round.

A 5.30 The outcome of Round 2 is shown in Table 9 below. This time there is excess demand for B1 and B2 Lots but not for the A2 Lot, so the price of the A2 Lot does not increase in Round 3.

Lot Category	Round 2 price (€)	Excess demand	Round 3 prices (€)
B1	43,000	Yes	45,000
A2	201,000	No	201,000
B2	41,000	Yes	44,000

Table 9: Round 2 results

Reducing Demand

A 5.31 As prices increase, a Bidder may wish to reduce its demand by bidding for fewer Lots. If a Bidder bids for a Package with Eligibility that is less than the Bidder's Eligibility at the start of the round, the Bidder's Eligibility for the next Primary Bid Round is reduced. In our example, the Bidder's Eligibility at the beginning of Round 3 is 8. The Bidder's preferences in this round are shown in Table 10 below.

Package			Valuation (€)	Package price at current Round Prices (€)	Surplus (€)
B1	A2	B2			
8	0	0	440,000	360,000	80,000
0	0	8	435,000	352,000	83,000
0	0	6	350,000	264,000	86,000
0	0	5	305,000	220,000	85,000
0	1	0	260,000	201,000	59,000

Table 10: Bidder's preferences in Round 3

A 5.32 After the price of B2 Lots has increased again, in Round 3 the Bidder prefers to reduce demand and bid for a Package of six B2 Lots, with Associated Eligibility of 6. As this is lower than the Bidder's Eligibility, submitting this Bid means that the Bidder's Eligibility for the following Primary Bid Round is reduced from 8 to 6. The outcome of Round 3 is shown in Table 11 below.

Lot Category	Round 3 price (€)	Excess demand	Round 4 prices (€)
B1	45,000	Yes	50,000
A2	201,000	Yes	211,000
B2	44,000	Yes	50,000

Table 11: Round 3 results

A 5.33 In Round 4, the Bidder's Eligibility is 6 and the Bidder's preferences are illustrated in Table 12 below.

Package			Valuation (€)	Package price at current Round Prices (€)	Surplus (€)
B1	A2	B2			
8	0	0	440,000	400,000	40,000
0	0	8	435,000	400,000	35,000
0	0	6	350,000	300,000	50,000
0	0	5	305,000	250,000	55,000
0	1	0	260,000	211,000	49,000

Table 12: Bidder's preferences in Round 4

A 5.34 In order to maximise surplus, following another price increase the Bidder now bids for a Package of five B2 Lots. The Eligibility of this Package, 5, is less than the Bidder's Eligibility, so the Bidder's Eligibility is reduced from 6 to 5 for the next Primary Bid Round.

A 5.35 The outcome of Round 4 is shown in Table 13 below.

Lot Category	Round 4 price (€)	Excess demand	Round 5 prices (€)
B1	50,000	No	50,000
A2	211,000	No	211,000
B2	50,000	Yes	56,000

Table 13: Round 4 results

Switching between Lot Types

A 5.36 As well as switching between Regions, a Bidder is free to switch demand between different Lot Types within the same Region, subject to the Eligibility of the Package Bid for being less than or equal to the Bidder's Eligibility at the start of the round.

A 5.37 In Round 5, the Bidder's Eligibility is 5. The surplus the Bidder would achieve at Round 5 prices is shown in Table 14 below.

Package			Valuation (€)	Package price at current Round Prices (€)	Surplus (€)
B1	A2	B2			
8	0	0	440,000	400,000	40,000
0	0	8	435,000	448,000	-13,000
0	0	6	350,000	336,000	14,000
0	0	5	305,000	280,000	25,000
0	1	0	260,000	211,000	49,000

Table 14: Bidder's preferences in Round 5

A 5.38 B2 Lots have become more expensive and the Bidder now prefers to bid for a single A2 Lot. The Eligibility of this Package, 5, is equal to the Bidder's Eligibility, so the Bidder maintains its Eligibility for the next Primary Bid Round.

A 5.39 The outcome of Round 5 is shown in Table 15 below.

Lot Category	Round 5 price (€)	Excess demand	Round 6 prices (€)
B1	50,000	No	50,000
A2	211,000	Yes	230,000
B2	56,000	Yes	61,000

Table 15: Round 5 results

Making Relaxed Primary Bids and Chain Bids

A 5.40 A Bidder that has reduced its Eligibility in one or more Primary Bid Rounds and/or submitted an Initial Bid resulting in Initial Eligibility strictly below the maximum possible may still be able, under certain conditions, to make a Bid for a Package with Eligibility greater than the Bidder's current Eligibility. This is known as a Relaxed Primary Bid. In some cases, making a Relaxed Primary Bid will require that the Bidder also make additional new Bids for other Packages. These are known as Chain Bids.

A 5.41 The EAS will automatically inform the Bidder about whether or not a Relaxed Primary Bid is possible and about any Chain Bids that are required if the Bidder wishes to make a Relaxed Primary Bid. The calculations shown here are included to illustrate how Relaxed Primary Bids and Chain Bids work, but Bidders will not be required to perform any of these calculations in practice. Moreover, the rules for Relaxed Primary Bids are specifically designed so that Relaxed Primary Bids are always permitted when a Bidder has been bidding according to its pre-determined valuations, as in this example. Therefore, Bidders that adopt this bidding approach know that they will be able to bid for their preferred Package at all times and need not worry about the detailed conditions for Relaxed Primary Bids to be allowed.

A 5.42 In Round 6, the Bidder's Eligibility is 5. Following an increase in the price of the A2 Lot, the Bidder's preferences are shown in Table 16 below.

Package			Valuation (€)	Package price at	Surplus (€)
B1	A2	B2		current Round Prices	
				(€)	
8	0	0	440,000	400,000	40,000
0	0	8	435,000	488,000	-53,000
0	0	6	350,000	366,000	-16,000
0	0	5	305,000	305,000	0
0	1	0	260,000	230,000	30,000

Table 16: Bidder's preferences in Round 6

A 5.43 In Round 6 the Bidder's preferred Package consists of eight B1 Lots. The Eligibility of this Package, 8, is greater than the Bidder's Eligibility of 5. In order to determine whether a Relaxed Primary Bid for the Package of eight B1 Lots is allowed, the EAS will check two conditions. To do this, the EAS identifies the last Primary Bid Round in which the Bidder had sufficient Eligibility to Bid for eight B1 Lots, which was Round 3. In Round 3, the Bidder had Eligibility equal to 8 and opted to bid instead for a Package of six B2 Lots, with Associated Eligibility equal to 6. The conditions relate to these two Packages, which we can call 'Package X' (eight B1 Lots) and 'Package Y' (six B2 Lots).

A 5.44 For a Relaxed Primary Bid for Package X to be allowed, the first condition is that the difference in price between Package X and Package Y at Round 6 prices must not exceed the difference in price between the two Packages at Round 3 prices:

- At Round 3 prices, the price of Package X was €360,000 and the price of Package Y was €264,000. The difference in price is €96,000.
- At Round 6 prices, the price of Package X is €400,000 and the price of Package Y is €366,000. The difference in price is €34,000.
- Since €34,000 is less than €96,000, the condition is satisfied.

A 5.45 The second condition is that the difference between the price of Package X at Round 6 prices and the highest Bid Amount submitted for Package Y at any point should not exceed the difference in price of the two Packages at Round 3 prices.

- At Round 6 prices, the price of Package X is €400,000.
- The highest Bid Amount submitted for Package Y was €264,000, in Round 3.
- The difference between these two amounts is €136,000.
- The difference in price of the two Packages at Round 3 prices was €96,000.
- Since €136,000 is greater than €96,000, the condition is not satisfied.

A 5.46 In order to satisfy the second condition, the Bidder must make a higher Bid for Package Y (a Chain Bid). The required Bid Amount for this Chain Bid is just high enough to satisfy the (second) condition above i.e. the Bid Amount for the Chain Bid is calculated as the price of Package X at Round 6 prices (€400,000), minus the difference in price of the two Packages at Round 3 prices (€96,000). Therefore, in order to submit a Relaxed Primary Bid for Package X, the Bidder must submit a Chain Bid of €304,000 for Package Y.¹²⁷

A 5.47 Having determined the required Chain Bid for Package Y, the EAS would check whether there have been any further Eligibility reductions after Round 3. The Bidder further reduced its Eligibility in Round 4 by bidding on a Package of five B2 Lots – call this ‘Package Z’. Because of this, and the increased Bid Amount for Y, a Chain Bid may be required for Package Z.

¹²⁷ Note that a Chain Bid is only permissible if the Bid Amount does not exceed the price of the relevant Package at current Round Prices, a condition which is satisfied here because the price of Package Y at Round 6 prices is €366,000.

A 5.48 The relevant condition is that the difference between the highest Bid Amount for Package Y (in this case the Bid Amount for the Chain Bid to be entered) and the highest Bid Amount submitted for Package Z should not exceed the difference in the price of the two Packages at Round 4 prices.¹²⁸

- The highest Bid for Package Y is the Chain Bid of €304,000.
- The highest Bid Amount submitted for Package Z was €250,000, in Round 4.
- The difference between these two amounts is €54,000.
- The difference between the price of the two Packages at Round 4 prices was €300,000 – €250,000 = €50,000.
- Since €54,000 is greater than €50,000, the condition is not satisfied.

A 5.49 In order for the Relaxed Primary Bid to be possible the Bidder's Bids must satisfy the above condition, which requires making a higher Bid for Package Z (another Chain Bid).

A 5.50 The required Bid Amount for this Chain Bid is calculated as the Chain Bid Amount for Package Y (€304,000), minus the difference between the prices of the two Packages at Round 4 prices (€50,000), which gives €254,000. Therefore, in order to submit a Relaxed Primary Bid for Package X, the Bidder must submit a Chain Bid for Package Z of €254,000,¹²⁹ as well as a Chain Bid for Package Y of €304,000.

A 5.51 As there are no further Eligibility reductions after Round 4, there is no possibility of further Chain Bids being required.

A 5.52 In summary, in Round 6 the Bidder makes the following Bids:

- a Relaxed Primary Bid for eight B1 Lots, at Round 6 prices;
- a Chain Bid for six B2 Lots with Bid Amount €304,000; and
- a Chain Bid for five B2 Lots with Bid Amount €254,000.

A 5.53 As mentioned, the EAS would automatically inform the Bidder that a Relaxed Primary Bid was possible for Package X and that it would require these particular Bids for Packages Y and Z.

¹²⁸ Otherwise the relative Bid Amounts for Y and Z would be inconsistent with the Bidder's decision to Bid for Z instead of Y in Round 4.

¹²⁹ Note that a Chain Bid is only permissible if the Bid Amount does not exceed the price of the relevant Package at current Round Prices, a condition which is satisfied here because the price of Package Z at Round 6 prices is €305,000.

A 5.54 Table 17 below shows that the Bidder is happy to make the necessary Chain Bids, as they all have a positive surplus.

Package			Type of Bid	Valuation (€)	Bid Amount (€)	Surplus (€)
B1	A2	B2				
8	0	0	Relaxed Primary Bid	440,000	400,000	40,000
0	0	6	Chain Bid	350,000	304,000	46,000
0	0	5	Chain Bid	305,000	254,000	51,000

Table 17: Bidder's decision in Round 6

A 5.55 As mentioned earlier, for any Bidder that bids consistently according to pre-determined valuations (as in this example) it is always possible to bid for the Bidder's preferred Package in every Primary Bid Round, including through Relaxed Primary Bids. Moreover, a Bidder that bids in this way will never be required to make Chain Bids with a negative surplus. Therefore, a Bidder that adopts this approach does not need to understand the detailed conditions related to Relaxed Primary Bids and Chain Bids.

A 5.56 The outcome of Round 6 is shown in Table 18 below.

Lot Category	Round 6 price (€)	Excess demand	Round 7 prices (€)
B1	50,000	Yes	54,000
A2	230,000	No	230,000
B2	61,000	No	61,000

Table 18: Round 6 results

A 5.57 Note that the Activity Rules allow for Relaxed Primary Bids to be submitted for Packages with Eligibility that exceeds the Bidder's Initial Eligibility. Suppose for example that the Bidder wished to submit a Relaxed Primary Bid for Package W, with Eligibility of 9, which exceeds the Bidder's Initial Eligibility of 8. For this Relaxed Primary Bid to be allowed, the two conditions that must be satisfied are that:

- the difference in price between Package W and the Package specified in the Bidder's Initial Bid at current Round Prices must not exceed the difference in price between the two Packages at Reserve Prices; and
- the difference between the price of Package W at current Round Prices and the highest Bid Amount submitted for the Package specified in the

Bidder's Initial Bid at any point should not exceed the difference in price between the two Packages at Reserve Prices.¹³⁰

A 5.58 Chain Bids may also be required if there is a need to increase the Bid Amount submitted for the Package specified in the Bidder's Initial Bid. We do not include a specific example in this Annex, but the calculations for establishing the relevant conditions and any required Chain Bids follow the same logic described above.

The final Primary Bid Round

A 5.59 In Round 7, the Bidder's Eligibility is again 5. Following an increase in the price of B1 Lots, the Bidder's decision is shown in Table 19 below.

Package			Valuation (€)	Package price at current Round Prices (€)	Surplus (€)
B1	A2	B2			
8	0	0	440,000	432,000	8,000
0	0	8	435,000	488,000	-53,000
0	0	6	350,000	366,000	-16,000
0	0	5	305,000	305,000	0
0	1	0	260,000	230,000	30,000

Table 19: Bidder's preferences in Round 6

A 5.60 The Bidder now bids for a Package of one A2 Lot.

A 5.61 Suppose that, at the end of Round 7, there is no excess demand in any Lot Category. Round 7 is the final Primary Bid Round, and the Package consisting of a single A2 Lot becomes the Bidder's Final Primary Package.

A 5.62 A summary of the Primary Bids submitted by this Bidder is shown in Table 20 below.

¹³⁰ That is, the conditions are the same as for other Relaxed Primary Bids, except that the last point at which the Bidder is considered to have been eligible to submit a Bid for the Package is at the Application Stage, when it chose to submit an Initial Bid for a different Package (in this case the Package with eight B2 Lots).

Round	Eligibility	Activity	Package			Type of Primary Bid	Bid Amount (€)
			B1	A2	B2		
1	8	8	8	0	0	Standard	320,000
2	8	8	0	0	8	Standard	328,000
3	8	6	0	0	6	Standard	264,000
4	6	5	0	0	5	Standard	250,000
5	5	5	0	1	0	Standard	211,000
6	5	8	8	0	0	Relaxed	400,000
			0	0	6	Chain	304,000
			0	0	5	Chain	254,000
7	5	5	0	1	0	Standard	230,000

Table 20: Summary of Primary Bids submitted

A 5.63 Notice that some of the Bids submitted in the earlier Primary Bid Rounds are 'dominated' by higher Bids submitted in the later Primary Bid Rounds. For example, the Bid of €264,000 for a Package of six B2 Lots submitted in Round 3 became redundant when the Bidder submitted a higher Bid of €304,000 for the same Package in Round 6; it is impossible for the lower Bid to become a Winning Bid. Therefore, it is informative to look only at the highest Bids that the Bidder has submitted for each Package, as summarised in Table 21 below.

Package			Valuation (€)	Highest Amount (€)	Surplus (€)
B1	A2	B2			
8	0	0	440,000	400,000	40,000
0	0	8	435,000	328,000	107,000
0	0	6	350,000	304,000	46,000
0	0	5	305,000	254,000	51,000
0	1	0	260,000	230,000	30,000

Table 21: Highest Primary Bids submitted for each Package

A 5.64 For all Packages the Bidder has a positive surplus at these Bid Amounts, meaning that the Bidder can make yet higher Bids in the Supplementary Bids Round in order to increase its chances of winning one of the Packages while still avoiding the risk of a negative return on the spectrum won.

A4.3 Supplementary Bids Round

A 5.65 After the end of the Primary Bids Rounds, there will be one Supplementary Bids Round. In the Supplementary Bids Round Bidders can (subject to relevant caps):

- increase the Bid Amount for Packages bid on during the Primary Bid Rounds; and
- add additional Packages with corresponding Bid Amounts.

- A 5.66 All Primary Bids (including Chain Bids) are binding; that is, they will be submitted as Supplementary Bids at the highest Bid Amount specified in either the Primary or the Supplementary Bid Rounds. The EAS will automatically add these Packages to the list of Supplementary Bids.
- A 5.67 A Bidder is able to submit Supplementary Bids for up to 1,000 Packages, including the Package specified in the Bidder's Initial Bid and any Package the Bidder Bid for during the Primary Bid Rounds. In this example, the Bidder has already submitted Bids for 5 Packages, so can submit Supplementary Bids for an additional 995 Packages.
- A 5.68 The Package bid for in the final Primary Bid Round, the Final Primary Package (FPP), is not subject to a cap and the Bidder could increase the Bid Amount for this Package by any amount, unless the FPP is a Zero Bid or a Relaxed Bid.
- A 5.69 Supplementary Bids for all other Packages are subject to caps on the Bid Amount.
- A 5.70 The rules for calculating these caps are explained in Section 4.2.3. All Supplementary Bids are subject to a Final Price Cap. Additionally, all Supplementary Bids for Packages with Eligibility larger than the Bidder's Eligibility in the Final Primary Bid Round are subject to Relative Price Caps.
- A 5.71 This section demonstrates the Supplementary Bid cap rules under three different versions of the example of the Primary Bid Rounds used above:
- Case 1: the Primary Bid Round history is exactly as set out in the example above, where the Bidder's FPP is non-zero and within its Eligibility for the final Primary Bid Round;
 - Case 2: we assume an additional round in which the Bidder submitted a Zero Bid; and
 - Case 3: the Primary Bid Rounds ended after Round 6, so that the Bidder's FPP is a Relaxed Bid.
- A 5.72 In all three versions, assume the Bidder's valuations to be as in the example above and shown in Table 22.
- A 5.73 These calculations are for illustrative purposes only. Bidders do not necessarily have to perform these calculations themselves. When trying to submit a Bid Amount for a Package that exceeds the Supplementary Bid cap, the EAS will inform the Bidder and prevent the submission of Supplementary Bids until all Bid Amounts are valid.

Package			Valuation (€)	Eligibility Points
B1	A2	B2		
8	0	0	440,000	8
0	0	8	435,000	8
0	0	6	350,000	6
0	0	5	305,000	5
0	1	0	260,000	5

Table 22: Packages of Lots and corresponding example valuations and Eligibility

A 5.74 In this example, the Bidder only has valuations for five Packages and has already submitted Bids for all of them in the Primary Bid Rounds. The Bidder therefore simply needs to raise the Bid Amounts in the Supplementary Bid Round. In addition, all Packages the Bidder is interested in have Associated Eligibility less than or equal to the Bidder's Initial Eligibility. Note, however, that the Supplementary Bid cap calculations for newly added Packages and for Packages larger (in terms of Eligibility Points) than the Package specified in the Bidder's Initial Bid work in exactly the same way as the example calculations shown in this section.¹³¹

Case 1: Non-zero FPP within Eligibility

A 5.75 Suppose that the Primary Bid Round history is as set out in the example above and shown in Table 23. Initially, the EAS will show a list of Supplementary Bids containing the five Packages the Bidder has bid on in the Primary Bid Rounds at the highest Bid Amounts submitted for the Package so far. The Bidder can increase these Bid Amounts and add additional Packages to its list of Supplementary Bids.

¹³¹ For Packages with Eligibility in excess of the Bidder's Initial Eligibility, the Relative Cap is calculated on the basis that the last point at which the Bidder could have Bid for the Package but chose not to do so was in the Application Stage, when it chose to Bid (at Reserve Prices) for the Package included in its Initial Bid instead.

Round	Eligibility	Activity	Package			Type of Primary Bid	Bid Amount (€)
			B1	A2	B2		
1	8	8	8	0	0	Standard	320,000
2	8	8	0	0	8	Standard	328,000
3	8	6	0	0	6	Standard	264,000
4	6	5	0	0	5	Standard	250,000
5	5	5	0	1	0	Standard	211,000
6	5	8	8	0	0	Relaxed	400,000
			0	0	6	Chain	304,000
			0	0	5	Chain	254,000
7	5	5	0	1	0	Standard	230,000

Table 23: Summary of Primary Bids submitted

A 5.76 The Bids do not fully express the Bidder's valuations so in this example the Bidder submits Supplementary Bids up to its valuations.

A 5.77 The Packages for which the Bidder has valuations are considered in increasing order of Package Eligibility. This is because the relevant caps are linked and it is therefore important to raise the Bid Amounts for 'Constraining Packages' (Packages the Bidder bid on in Eligibility-reducing rounds) first.

A 5.78 First, the Bidder wishes to increase the Bid Amount for its FPP, which is non-Zero and not a Relaxed Bid. There is no restriction on the Bid Amount for the FPP in this case, so the Bidder simply increases the Bid Amount from €230,000 to €260,000.

A 5.79 Secondly, the Bidder wishes to increase the Bid Amount for the Package of 5 B2 Lots, as its valuation for the Package (€305,000) exceeds the highest Bid Amount on the Package so far (€254,000). The Final Price Cap for this Package X is calculated as follows:

- the highest Bid Amount for the FPP (€260,000); plus
- the difference between the price of X and the FPP at the Round Prices in the final Primary Bid Round ($€305,000 - €230,000 = €75,000$).

A 5.80 The Final Price Cap for the Package of five B2 Lots is therefore €335,000. This is higher than the Bidder's valuation for the Package, and the Bidder can therefore increase the Bid Amount to €305,000 as it would like to do. Note that the Package of five B2 Lots is not subject to a Relative Price Cap because the Bidder had sufficient Eligibility to bid for the Package in the final Primary Bid Round.

A 5.81 Next, the Bidder wishes to increase the Bid Amount for the Package of six B2 Lots, for which it has a valuation of €350,000 and so far a Bid Amount of €304,000. As above, the Final Price Cap for this Package Y is calculated as follows:

- the highest Bid Amount for the FPP (€260,000); plus
- the difference between the price of Y and the FPP at the Round Prices in the final Primary Bid Round (€366,000 – €230,000 = €136,000).

A 5.82 This gives a Final Price Cap of €396,000. Additionally, this Package is subject to a Relative Cap because the Bidder's Eligibility in the final Primary Bid Round was insufficient to bid for this Package. The Bidder was last eligible to bid on this Package Y in Round 4, but chose to bid on the Package of five B2 Lots instead. The Relative Cap for Y is calculated as follows:

- the highest Bid for the Package of five B2 Lots (€305,000 – a Supplementary Bid, as set out above); plus
- the difference between the price of Y and the price of five B2 Lots at the prices in Round 4 (€300,000 – €250,000 = €50,000).

A 5.83 This gives a Relative Cap of €355,000, which is tighter than the Final Price Cap, but still allows the Bidder to submit a Bid Amount of €350,000 (its valuation) for this Package.

A 5.84 Caps for the other Packages the Bidder has valuations for are calculated in a similar manner. All caps and Bid Amounts (equal to valuations) are shown in Table 24.

Package			Final Price Cap (€)	Relative Cap (€)	Bid Amount (€)
B1	A2	B2			
8	0	0	462,000	446,000	440,000
0	0	8	518,000	438,000	435,000
0	0	6	396,000	355,000	350,000
0	0	5	335,000	-	305,000
0	1	0	-	-	260,000

Table 24: Supplementary Bid caps and Bid Amounts

A 5.85 Note that none of the caps are binding and the Bidder can bid up to its valuation for all Packages. This is a direct consequence of the Bidders behaviour in the Primary Bid Rounds. Because its bidding was consistent with its valuations in every round, the Supplementary Bids caps are not restrictive. This is not necessarily the case when there is inconsistent bidding behaviour in the Primary Bid Rounds.

Case 2: Zero Final Primary Package

A 5.86 In this alternative version of the example, assume that there was still excess demand in Round 7 but in Round 8 prices were such that the Bidder had no positive surplus for any Packages and it reduced demand to zero in all

categories. The Primary Bid Rounds ended after round 8, and final Round Prices are shown in Table 25.

Lot Category	Round 8 price (€)	Package of Lots
B1	56,000	0
A2	261,000	0
B2	62,000	0

Table 25: Primary Bid Round 8 prices

A 5.87 Clearly, there is now a restriction on the Bidder's FPP: as it is the Zero Bid, the Bid Amount can only be zero. Therefore, the Final Price Cap and Relative Cap apply to all non-zero Packages.

A 5.88 As before, the Bidder still wishes to submit higher Supplementary Bid Amounts for its Packages.

A 5.89 First, it wishes to raise the Bid Amount for the Package of one A2 Lot. The Final Price Cap is calculated as follows:

- the highest Bid Amount for the FPP (€0); plus
- the difference between the price of one A2 Lot and the FPP at the Round Prices in the final Primary Bid Round (€261,000 – €0 = €261,000).

A 5.90 The Relative Cap in this case is exactly the same because the last round in which the Bidder was eligible to bid on this Package was the final round. The Bidder submits a Supplementary Bid for the Package of one A2 Lot at €260,000 (equal to valuation).

A 5.91 Similarly, the Final Price Cap and Relative Cap for the Package of five B2 Lots are simply equal to the price of the Package at Final Primary Round Prices (€310,000), and the Bidder submits a Supplementary Bid at its valuation of €305,000.

A 5.92 For the larger Packages, the Relative Cap is different to the Final Price Cap but it is calculated exactly as shown in Case 1 above.

A 5.93 All caps and Bid Amounts are shown in Table 26. As before, the caps are not binding and the Bidder can bid up to its valuation.

Package			Final Price Cap (€)	Relative Cap (€)	Bid Amount (€)
B1	A2	B2			
8	0	0	448,000	446,000	440,000
0	0	8	496,000	438,000	435,000
0	0	6	372,000	355,000	350,000
0	0	5	310,000	310,000	305,000
0	1	0	261,000	261,000	260,000

Table 26: Supplementary Bid caps and Bid Amounts

Case 3: Relaxed Bid FPP

A 5.94 In this version, assume that after Round 6 there was no excess demand and the Primary Bid Rounds ended. This means that the FPP was the subject of a Relaxed Bid. Final prices and the Bidder's demand are shown in Table 27. In this case the FPP is subject to a Relative Cap because the Bidder had insufficient Eligibility to bid on this Package in the last round.

Lot Category	Round 6 price (€)	Package of Lots
B1	50,000	8
A2	230,000	0
B2	61,000	0

Table 27: Primary Bid Round 6 prices

A 5.95 We start with the cap calculations for the Constraining Packages. These are the Packages bid on in Eligibility-reducing rounds (rounds 4 and 3). The Final Price Cap for the Package of five B2 Lots (round 4 Package) is calculated as follows:

- the highest Bid Amount for the FPP (€400,000, the Relaxed Bid from the final round); plus
- the difference in price between five B2 Lots and the FPP at the Round Prices in the final Primary Bid Round (€305,000 – €400,000).

A 5.96 This gives a Final Price Cap of €305,000. The Supplementary Bid for the Package is not subject to a Relative Cap because the Bidder's Eligibility in the final Primary Bid Round was sufficient to bid on it. The Bidder's valuation for this Package is €305,000, which is equal to the Final Price Cap, so the Bidder is allowed to submit a Supplementary Bid for the Package at valuation.¹³²

A 5.97 Similarly, the Final Price Cap for the Package of six B2 Lots (round 3 Package) is equal to the price at the Package at the Round Prices in the final Primary Bid Round (€366,000). This Package is also subject to a Relative Cap. The

¹³² Note that the cap increases if the Bid Amount for the FPP is raised.

last round in which the Bidder was eligible to bid on the Package was round 4, where it bid on five B2 Lots instead. The Relative Cap is:

- the highest Bid Amount for five B2 Lots (€305,000); plus
- the difference in price between six and five B2 Lots at the Round Prices in round 4 (€300,000 – €250,000 = €50,000).

A 5.98 This gives a Relative Cap of €355,000, so the Bidder can submit a Bid Amount of €350,000, which is its valuation for the Package.

A 5.99 The Relative Cap for the FPP is calculated with respect to round 3, which is the most recent round in which the Bidder was eligible to bid on its FPP but chose to bid on another Package (six B2 Lots) instead. The Relative Cap is:

- the highest Bid Amount for six B2 Lots (€350,000); plus
- the difference in price between the FPP and six B2 Lots at the Round Prices in Round 3 (€360,000 – €264,000 = €96,000).

A 5.100 This gives a cap of €446,000 so the Bidder can raise the Bid Amount to €440,000, its valuation for the Package. Note that the €40,000 increase of the FPP Bid Amount raises the Final Price Cap for all other Packages by €40,000.

A 5.101 The caps on Supplementary Bid Amounts for other Packages are calculated in exactly the same manner. All caps, and Bid Amounts equal to valuation are shown in **Error! Not a valid bookmark self-reference.** below.

Package			Final Price Cap (€)	Relative Cap (€)	Bid Amount (€)
B1	A2	B2			
8	0	0	-	446,000	440,000
0	0	8	528,000	438,000	435,000
0	0	6	406,000	355,000	350,000
0	0	5	345,000	-	305,000
0	1	0	270,000	-	260,000

Table 28: Supplementary Bid caps and Bid Amounts

Annex 6: Example of Winner and Price Determination

A 6.1 This section gives a very simple example of the winner and price determination process. There are four Bidders and two Lot Categories, with two Lots in Lot Category A and two Lots in Lot Category B. All Valid Bids at the end of the Supplementary Bids Round are shown in Table 1, with the optimal allocation highlighted in green.

<i>Bidder</i>	<i>Package</i>		<i>Bid Amount</i>
	<i>Lot Category A</i>	<i>Lot Category B</i>	
Bidder 1	1	0	8
Bidder 1	1	1	10
Bidder 1	0	2	12
Bidder 2	2	0	16
Bidder 2	1	1	15
Bidder 3	1	1	15
Bidder 4	2	2	24

Table 1: All Valid Bids in this example

- A 6.2 In this simple case it is easy to verify that the combination giving the highest total Bid value (the Winning Combination of Bids) is Bidder 3's Bid and Bidder 2's Bid for (1,1), generating a total value of 30 (shown in green in Table 1 above). The notation (x,y) refers to x A Lots and y B Lots.
- A 6.3 If we were to accept Bidder 1's Bid for (1,0), we could only additionally accept either Bidder 2's Bid for (1,1), producing a total value of 23, or Bidder 3's Bid for (1,1), producing a total value of 23 (and leaving one B Lot unsold).
- A 6.4 If we were to accept Bidder 1's Bid for (1,1), we could also accept a Bid for (1,1) from either Bidder 2 or Bidder 3, creating a total value of 25 in each case.
- A 6.5 If we were to take Bidder 1's Bid for (0,2), we could only accommodate Bidder 2's Bid for (2,0), producing a total value of 28.
- A 6.6 If we were to accept Bidder 4's Bid for (2,2), we could not accommodate any other Bidder, giving a total value of 24.
- A 6.7 This means that accepting Bids for (1,1) from Bidder 2 and (1,1) from Bidder 3 is the unique Winning Combination of Bids.

A6.2 Base Price determination

A 6.8 Taking the example provided above, we establish the Opportunity Cost Associated with Bidder 2's Winning Bid.

Bidder	Package		Bid Amount (Difference to optimal outcome)
	Lot Category A (Difference to optimal outcome)	Lot Category B (Difference to optimal outcome)	
Bidder 1	1 (+1)	1 (+1)	10 (+10)
Bidder 2	0 (-1)	0 (-1)	0 (-15)
Bidder 3	1 (0)	1 (0)	15 (0)
Total	2 (0)	2 (0)	25 (-5)

Table 2: Outcome when excluding Bidder 2 (difference to optimal outcome)

A 6.9 If we eliminated Bidder 2 completely from the Auction, the winning combination would be to take the same Bid from Bidder 3 as in the optimal allocation, together with the Bid for (1,1) from Bidder 1 at a Bid Amount of 10, creating a total value of 25. From this, we have to subtract the amount in the winning combination that comes from the Winning Bids of Bidders other than Bidder 2, which in this case is the 15 from Bidder 3's Winning Bid. This means that the Opportunity Cost of accepting Bidder 2's Winning Bid is $25 - 15 = 10$. Equally, this can be obtained by adding the differences in Bid Amounts relative to the optimal outcome in Table 2 above for all Bidders except Bidder 2. This gives +10 (from Bidder 1) and 0 (from Bidder 3), giving Bidder 2's individual Opportunity Cost of 10.

A 6.10 Similarly, if we eliminated Bidder 3 from the Auction, our best option would be to accept Bidder 1's Bid for (0,2) together with Bidder 2's Bid for (2,0), creating a total value of 28. The Opportunity Cost of accepting Bidder 3's Bid is therefore given by $28 - 15 = 13$. This is shown in Table 3; Bidder 1 is better off by 12 and Bidder 2 is better off by 1 compared to the optimal outcome. The total individual Opportunity Cost imposed by Bidder 3 is therefore 13.

Bidder	Package		Bid Amount (Difference to optimal outcome)
	Lot Category A (Difference to optimal outcome)	Lot Category B (Difference to optimal outcome)	
Bidder 1	0 (0)	2 (+2)	12 (+12)
Bidder 2	2 (+1)	0 (-1)	16 (+1)
Bidder 3	0 (-1)	0 (-1)	0 (-15)
Total	2 (0)	2 (0)	28 (-2)

Table 3: Outcome when excluding Bidder 3 (difference to optimal outcome)

A 6.11 We then need to calculate the joint Opportunity Cost for both Winning Bidders. If we eliminate both Winning Bidders, the best option is to give both A Lots and both B Lots to Bidder 4. This generates a total bid value of 24, so the joint Opportunity Costs of the two Bidders is 24.

Bidder	Package		Bid Amount (Difference to optimal outcome)
	Lot Category A (Difference to optimal outcome)	Lot Category B (Difference to optimal outcome)	
Bidder 2	0 (-1)	0 (-1)	0 (-15)
Bidder 3	0 (-1)	0 (-1)	0 (-15)
Bidder 4	2 (+2)	2 (+2)	24 (+24)
Total	2 (0)	2 (0)	24 (-6)

Table 4: Jointly excluding Bidder 2 and Bidder 3 (difference to optimal outcome)

A 6.12 This means that individual Opportunity Costs are 10 for Bidder 2 and 13 for Bidder 3 respectively, and 24 for both Bidders together. Base Prices cannot be lower than individual Opportunity Costs.

A 6.13 However, setting Base Prices at individual Opportunity Cost is not sufficient in this case, as the Bidders would not cover their joint Opportunity Cost (because $10 + 13 = 23 < 24$). That is, the Winning Bidders would be jointly paying 23 for the Lots they have been awarded, but Bidder 4 would be willing to pay more (24). Together, they therefore need to pay an additional 1 over and above the sum of their individual Opportunity Costs.

A 6.14 Any set of prices for Bidder 2 and 3 that ensures Bidder 2 pays at least 10, Bidder 3 pays at least 13, and Bidders 2 and 3 jointly pay 24 minimises the sum of Base Prices. In this case, the pricing rule splits the additional cost above the sum of individual Opportunity Costs equally. So Bidder 2's Base Price is 10.5 and Bidder 3's Base Price is 13.5.¹³³

A 6.15 Box 1 of Annex 8 of Document 15/140 may also be of assistance to interested parties in aiding their understanding of Opportunity Cost based pricing.

¹³³ This is for illustrative purpose only and ignores that Base Prices will be rounded to the nearest Euro.

Annex 7: Implications of Final Price Cap

- A 7.1 This annex considers the implications of the Final Price Cap for bidding strategies in the Supplementary Bids Round. The analysis presented is intended to aid Bidders' consideration of appropriate bidding strategies. However ComReg makes no warranty or representation that any strategy suggested herein is necessary or sufficient to ensure the winning of spectrum.
- A 7.2 Please note that this annex is not an Extension of the example set out in Annex 5 and should be considered separately.

A7.1 Overview

- A 7.3 In the Supplementary Bids Round, the Final Price Cap constrains the possible Bids that can be submitted by each Bidder. For any Package (Package X) other than the Final Primary Package, the Supplementary Bid Amount cannot exceed the highest Bid submitted for the Final Primary Package plus the price difference between the Final Primary Package and Package X at the Round Prices in the Final Primary Bid Round.
- A 7.4 If the Bid submitted in the Final Primary Bid Round was a standard Primary Bid (i.e. not a Relaxed Primary Bid) for a non-zero Package, there is no limit on the Supplementary Bid Amount for the Final Primary Package. Bidders should note, however, that if the Bid submitted in the Final Primary Bid Round was a Relaxed Primary Bid, the Supplementary Bid Amount that can be submitted for the Final Primary Package will be constrained by a Relative Cap.
- A 7.5 For example, suppose a Bidder's Final Primary Package consists of eight Lots in Lot Category A, and the Bidder's highest Bid for this Package is a Supplementary Bid of €100,000. Suppose the Round Price for Lot Category A in the final Primary Bid Round was €8,000. Then, the highest Bid that the Bidder could submit for a Package of ten A Lots would be €116,000.
- A 7.6 When preparing its Supplementary Bids, an individual Bidder will have information about the Round Prices and the level of Aggregate Demand for each Lot Category in the final Primary Bid Round. Because other Bidders are all constrained by the Final Price Cap, an individual Bidder can use this information to make certain generalised inferences about its likelihood of winning with particular Bids. Specifically, the relevant information is the value of provisionally unassigned Lots based on the Round Prices of the final Primary Bid Round.
- A 7.7 For example, suppose that in the final Primary Bid Round Aggregate Demand is equal to supply in all but two Lot Categories, A and B. In Lot Category A, supply is equal to 65 Lots and Aggregate Demand is equal to 62. In Lot

Category B, supply is equal to one Lot and Aggregate Demand is zero. Therefore, three A Lots and one B Lot are provisionally unassigned. If the Round Prices for these Lot Categories in the final Primary Bid Round were €8,000 and €15,000 respectively then the value of provisionally unassigned Lots would be €39,000.

A 7.8 A Bidder may choose to take into account the value of provisionally unassigned Lots when specifying Supplementary Bids. There are distinct approaches that a Bidder can follow, enabling it to make inferences about the probability of different Bids becoming Winning Bids.

A 7.9 A first approach is to specify:

- a Supplementary Bid for the Final Primary Package equal to the value of that Package based on the Round Prices in the final Primary Bid Round, plus the value of provisionally unassigned Lots, plus a further positive increment (e.g. €1,000); and
- Supplementary Bids for other Packages (if any) that do not exceed the value of those Packages based on the Round Prices in the final Primary Bid Round.

A 7.10 Following the above examples,¹³⁴ if the Bidder followed this first approach it might make the following Supplementary Bids:

- $64,000+39,000+1,000=€104,000$ for the Final Primary Package (eight A Lots); and
- Any amount up to €15,000 for one B Lot.

A 7.11 With this approach, under normal circumstances the Bidder will win its Final Primary Package regardless of the Bids made by other Bidders. For the avoidance of doubt, the Base Price for this Winning Bid could be less than or equal to the Bid Amount submitted.

A 7.12 A second approach is to specify:

- a Supplementary Bid for the Final Primary Package, again equal to the value of that Package based on the Round Prices in the final Primary Bid Round, plus the value of provisionally unassigned Lots, plus a further positive increment (e.g. €1,000); and
- Supplementary Bids for other Packages, at least one of which exceeds the value of the Package based on the Round Prices in the final Primary Bid Round.

¹³⁴ Where the Final Primary Package consists of eight A Lots, the Round Prices in the final Primary Bid Round were €8,000 for A Lots and €15,000 for B Lots, and the value of provisionally unassigned Lots is €39,000.

A 7.13 Following the above examples, if the Bidder followed this second approach it might make the following Supplementary Bids:

- $64,000+39,000+1,000=€104,000$ for the Final Primary Package (eight A Lots); and
- Any amount in excess of €15,000 for one B Lot.

A 7.14 With this approach, under normal circumstances the Bidder will win either its Final Primary Package or one of the other Packages for which it submitted Bid Amounts that exceed the value of those Packages based on the Round Prices in the final Primary Bid Round. This holds regardless of the Bids made by other Bidders. For the avoidance of doubt, the Base Price for this Winning Bid could be less than or equal to the Bid Amount submitted.

A 7.15 If the Bidder made a Relaxed Primary Bid in the final Primary Bid Round, the first approach may still be possible, or it may be that only the second approach is possible. This depends on any Chain Bids that the Bidder is required to make in order to raise its Supplementary Bid for the Final Primary Package to the level set out above. In any case, the same conclusions apply.

A 7.16 Finally, in any alternative approach the Bidder's highest Bid submitted for the Final Primary Package would be strictly lower than the Bid Amount set out in the above approaches (following the above examples, it would be less than €104,000). With any such approach, it is not possible to draw any generalisable inferences about the likelihood of winning. In other words, with any such approach it is possible that the Bidder wins its Final Primary Package, or a different Package that it has bid for, or nothing.

A 7.17 A more formal explanation of the implications of the Final Price Cap, including mathematical proof, is provided below.

A7.2 Mathematical derivation

Notation¹³⁵

A 7.18 Let I denote the set of all Bidders. Let $\beta_i(x)$ denote the highest Bid of Bidder $i \in I$ for Package x regardless of how this Bid was made. This Bid could be an Initial Bid at Reserve Prices (resulting from the selection of Lots on a Bidder's Application Form), a Primary Bid, a Relaxed Primary Bid or a Supplementary Bid if one has been made.

A 7.19 Let x_i^f denote the Final Primary Package Bid for by Bidder i in the final Primary Bid Round. Let X be the available supply of Lots and

¹³⁵ This annex uses the same vector and set notation as used in Annex 8 unless otherwise indicated.

$$x_0^f = X - \sum_{i \in I} x_i^f$$

be the vector of provisionally unassigned Lots at the end of the final Primary Bid Round. Let p^f be the Lot prices in the final Primary Bid Round.

Analysis

A 7.20 We focus on one particular Bidder $j \in I$. We consider the effect if this Bidder increases its Bid for its Final Primary Package by the value of any provisionally unassigned Lots at the end of the final Primary Bid Rounds plus a small increment.

$$(A) \quad \beta_j(x_j^f) = p^f \cdot x_j^f + p^f \cdot x_0^f + \epsilon$$

where ϵ is some small amount. (In the subsequent analysis, this will resolve any ties.) As Supplementary Bids need to be divisible by €1,000, ϵ could be as small as €1,000 in practice.

A 7.21 Regardless of the bidding strategies adopted by rival Bidders $i \neq j$, all their Bids are bounded by the Final Price Cap. For any Package x_i , the Final Price Cap requires that

$$\beta_i(x_i) \leq \beta_i(x_i^f) + p^f \cdot (x_i - x_i^f).$$

A 7.22 Therefore, for any Packages x_i , by adding these Final Price Caps across Bidders $i \neq j$ we have that

$$(B) \quad \sum_{i \neq j} \beta_i(x_i) \leq \sum_{i \neq j} \beta_i(x_i^f) + \sum_{i \neq j} p^f \cdot (x_i - x_i^f)$$

A 7.23 Now for any feasible outcome $(x_i)_{i \in I}$ giving Package x_i to Bidder i ,

$$\sum_i x_i \leq X.$$

A 7.24 Therefore, from the definition (A) of Bidder j 's Supplementary Bid $\beta_j(x_j^f)$ for its Final Primary Package x_j^f we have that

$$\beta_j(x_j^f) = p^f \cdot \left[x_j^f + X - \sum_i x_i^f \right] + \epsilon \geq p^f \cdot \left[\sum_i x_i - \sum_{i \neq j} x_i^f \right] + \epsilon$$

which on rearranging gives that any feasible outcome $(x_i)_{i \in I}$ must satisfy

$$(C) \quad \beta_j(x_j^f) - p^f \cdot x_j \geq p^f \cdot \sum_{i \neq j} (x_i - x_i^f) + \epsilon$$

A 7.25 Combining inequalities (B) and (C) implies that for any feasible outcome $(x_i)_{i \in I}$ and regardless of the Bid strategy adopted by rival Bidders $i \neq j$

$$(D) \quad \sum_i \beta_i(x_i^f) \geq p^f \cdot x_j + \sum_{i \neq j} \beta_i(x_i) + \epsilon$$

A 7.26 Now suppose that in some alternative feasible outcome $(x_i)_{i \in I}$ Bidder j wins with a Bid with $\beta_j(x_j) \leq p^f \cdot x_j$. It follows immediately from inequality (D) that $(x_i)_{i \in I}$ cannot be an optimal outcome as the total value of Winning Bids is strictly lower than in the outcome $(x_i^f)_{i \in I}$ in which each Bidder receives its Final Primary Package.

A 7.27 This demonstrates that provided Bidder j makes a Bid for its Final Primary Package x_j^f according to the rule (A), then an optimal outcome in which Bidder j does not win its Final Primary Package must result in Bidder j winning some alternative Package $x_j \neq x_j^f$ where $\beta_j(x_j) > p^f \cdot x_j$. No assumption has been made about the Bids of Bidders $i \neq j$ other than that they satisfy the Final Price Cap. This result also holds irrespective of whether Bidder j 's final Primary Bid was a standard Primary Bid or a Relaxed Primary Bid.

Implications

A 7.28 An implication of this result is that if Bidder j bids for its Final Primary Package according to rule (A) and increases its Bid for no other Package to more than that Package's price in the final round, then the Bidder will win its Final Primary Package regardless of the Bids made by other Bidders.

A 7.29 In particular, if Bidder j makes a Bid for its Final Primary Package x_j^f according to the rule (A), then it cannot win a Package $x_j \neq x_j^f$ which is subject to a Primary Bid, but for which no further Supplementary Bid has been made. This is because such a Primary Bid must have been placed in a round prior to the final round at prices no greater than p^f and so $\beta_j(x_j) \leq p^f \cdot x_j$.

A 7.30 In the case that a Bidder's Final Primary Bid is a standard Primary Bid (i.e. not a Relaxed Primary Bid) then it is possible for the Bidder to raise its Bid for its Final Primary Package according to rule (A) and make no other Supplementary Bids. Therefore, the Bidder can ensure that it wins its Final Primary Package if it is prepared to raise its Bid by a sufficient amount.

A 7.31 In the case that a Bidder's final Primary Bid is a Relaxed Primary Bid, there will be another Package x_j^1 that is a Constraining Package setting a Relative Cap on its Final Primary Package x_j^f . x_j^1 is the Package bid for in the last round that Bidder j was eligible to bid for x_j^f . In turn, x_j^1 may be subject to a Relative

Cap on a Constraining Package x_j^2 and so on. Eventually this sequence terminates with some Package x_j^n that the Bidder was eligible to bid for in the last round. x_j^1, \dots, x_j^n are all Packages bid for in rounds where Bidder j dropped Eligibility. Let p_j^1, \dots, p_j^n denote the prices applying in these rounds.

A 7.32 Therefore, any Supplementary Bid $\beta_j(x_j^f)$ is subject to the following chain of Relative Caps

$$\begin{aligned}\beta_j(x_j^f) &\leq \beta(x_j^1) + p_j^f \cdot (x_j^f - x_j^1) \\ \beta_j(x_j^1) &\leq \beta(x_j^2) + p_j^1 \cdot (x_j^1 - x_j^2) \\ &\vdots \\ \beta_j(x_j^n) &\leq \beta(x_j^{n-1}) + p_j^{n-1} \cdot (x_j^{n-1} - x_j^n)\end{aligned}$$

A 7.33 As a result, it is possible that in order to increase $\beta_j^f(x_j^f)$ to the Bid Amount specified by rule (A), it could be necessary to increase one or more of Bids $\beta_j(x_j^1), \dots, \beta_j(x_j^n)$ to a level exceeding the price in the final Primary Round. In such a case, we cannot conclude that Bidder j would necessarily win its Final Primary Package x_j^f . However, even in this case if Bidder j makes no Supplementary Bids for any other Packages, then it will win **either** its Final Primary Package x_j^f **or** one of the Associated Constraining Packages x_j^k for which $\beta_j(x_j^k) > p^f \cdot x_j^k$.

A7.3 Cautionary remarks

A 7.34 The analysis presented in this Annex holds in theory but might be affected by unanticipated circumstances in practice.

A 7.35 For example, if an exceptional event were to occur after the Supplementary Bids Round, resulting in certain Bids or Bidders being excluded from consideration, this could affect the analysis above by altering the number of provisionally unassigned Lots as of the end of the Primary Bid Rounds. Though unlikely, such an event or any other unanticipated event cannot be ruled out. ComReg maintains 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.

A 7.36 Therefore, the analysis in this Annex does not provide an absolute guarantee in relation to particular winning outcomes. ComReg makes no warranty or representation that any strategy suggested herein is necessary or sufficient to ensure the winning of spectrum.

Annex 8: Relationships, resolution of Bidder connections, exemptions and changes

Ownerships rules – relationship examples

A 8.1 This paragraph is intended to illustrate the types of relations that ComReg considers to fall within the concepts of Connected Persons and Associated Bidders, as discussed in Section 3.3.4. The following is not meant to be an exhaustive or comprehensive description of the relationships that may fall within each category.

- (a) A “**Bidding Group**” includes a Bidder and its Connected Persons.
- (b) A person is considered to be a “**Connected Person**” in relation to a Bidder where the Connected Person and/or any of its Controlling Persons and/or any of its Controlled Persons:
 - (i) either by itself or in concert with another person or other persons Controls the Bidder;
 - (iii) either by itself or in concert with another person or other persons has a direct or indirect Interest of 10% or more in the Bidder;
 - (iv) is a partner of the Bidder;
 - (v) either by itself or in concert with another person or other persons has an agreement, wholly or partly, to finance or otherwise assist the Bidder in connection with the Award Process;
 - (vi) is Controlled by the Bidder alone or in concert with another Connected Person or Persons; or
 - (vii) has as a director or senior executive any individual who is a director or senior executive of the Bidder or any of its Controlled Persons.
- (c) A person (the “**Controlling Person**”) is considered to control another person (the “**Controlled Person**”) for example:
 - (i) where the Controlling Person and/or its Controlled Persons and/or its Associates, either by itself or in concert with other persons has:
 - (A) an Interest in 30% or more of the share capital of the Controlled Person;

- (B) the right to cast 30% or more of the votes of shareholders on any matter at shareholders meetings;
- (ii) where the Controlled Person routinely or generally acts in accordance with the instructions of the Controlling Person;
- (iii) where, in the plain meaning of the words, the Controlling Person and/or its Controlled Persons controls the Controlled Person;
- (iv) where the Controlling Person is capable of exercising decisive influence on the activity of the Controlled Person by means of:
 - (A) securities, contracts or any other means, or any combination of securities, contracts or other means; and/or
 - (B) ownership of, or the right to use all or part of, the assets of the “Controlled Person”, and/or
 - (C) rights or contracts which enable decisive influence to be exercised with regard to the composition, voting or decisions of the organs of the “Controlled Person”; and/or
 - (D) without limitation by the foregoing, any other way,

and “**Control**” will be construed accordingly.

In addition to the above, in determining whether influence of the kind referred to above is capable of being exercised by a “Controlling Person” over a “Controlled Person”, regard shall be had to all the circumstances of the matter and not solely to the legal effect of any instrument.

- (d) A person is considered to be “**in concert**” with another person in circumstances where, for example:
 - (i) one person Controls the other person;
 - (ii) one person is Associated with the other person;
 - (iii) there is an agreement or arrangement (whether or not legally binding) between those persons as to co-ordinated or concerted behaviour or activity by those persons (or either of them); or
 - (iv) where, within the plain meaning of the expression “concerted”, the persons’ behaviour or activity is concerted.
- (e) An “**interest**” is considered to include:
 - (i) an ownership interest, legal or beneficial, actual or contingent;
 - (ii) an interest as the holder of a mortgage, charge, lien, hypothecation or other encumbrance;

- (iii) any derivative interest such as a participation or sub-participation where the holder of the Interest and/or any of its Controlled Persons directly or indirectly bears some or all of the rewards and / or some or all of the risks of the relevant entity, shares or other securities;
 - (iv) an option to acquire any of the foregoing; or
 - (v) a right to convert a right or asset (such as a debt security) into any of the foregoing.
- (f) An “**Associate**” of any entity is considered to include:
- (i) a director or company secretary or like officer of the entity and/or of its Controlled Persons;
 - (ii) a senior executive of the entity and/or of its Controlled Persons;
 - (iii) a spouse, civil partner or cohabiting partner of the foregoing;
 - (iv) any minor child of the foregoing and any child of the foregoing residing with the foregoing;
 - (v) t) any partner of the foregoing; or
 - (vi) any entity Controlled by any one or more of the foregoing and any partner of such entity.
- (g) “**Associated Bidders**” is considered to include Bidders who have one of the following relationships to each other:
- (i) a Connected Person in relation to one Bidder holds a direct or indirect Interest of 20% or more in the other Bidder, or
 - (ii) a Person who is not a Connected Person in relation to any of the Bidders concerned holds a direct or indirect Interest of 20% or more in both Bidders.

Resolution of Bidder connections

A 8.2 It is possible at the Application Date that a Bidder is unaware that another party with whom it has common or overlapping Bidding Groups or with which it is an Associated Bidder is applying. If ComReg considers that one of the relations referred to above exists between Bidders, it shall notify this to the Bidders affected, indicating a deadline for Bidders to:

- (a) apply for exemption from the rules on relations between Bidders (see below);
- (b) bring the relation to an end; or
- (c) refrain from further participation in the Award Process.

- A 8.3 If the Bidders affected are not granted an exemption, do not bring the relation to an end or refrain from participation in the Award Process, ComReg will exclude the Bidders affected from further participation in the Award Process. If the relation comes to light later in the Award Process, i.e. after the Auction has commenced, then ComReg may exclude the Bidder from further participation in the Award Process (see paragraph 3.81 above in that regard) and this may result in partial or whole Deposit forfeiture for the affected Bidders. ComReg may also declare the result of the Award Process not binding, wholly or partly, on it.
- A 8.4 If one of the above-mentioned relations exists between two or more Bidders, and it is not possible to bring the relation to an end within the deadline set by ComReg, and ComReg does not grant an exemption, one or more of the Bidders may withdraw from participation in the Award Process, before the deadline for doing so set by ComReg, so that it is not necessary for ComReg to exclude both Bidders. However, the composition of the remaining Bidder and the content of its Application must remain unchanged, subject to ComReg's discretion to approve appropriate amendments.

Exemption from ownership rules

- A 8.5 ComReg may, in exceptional circumstances and at its sole discretion, grant exemption from the ownership rules described in Section 3.3.4. Furthermore, ComReg may attach terms to a decision granting exemption from the ownership rules.
- A 8.6 In considering whether to grant an exemption and any terms to attach to an exemption, ComReg will be guided by the need to ensure the efficient use of spectrum, compliance with Section 4 of the Competition Act 2002 (as amended) and compliance with its statutory functions, objectives and duties generally.
- A 8.7 If one of the relations described in this Section 3.3.4 exists between two or more Bidders, ComReg may grant exemption from the ownership rules if it is established by the affected Bidders, without undue delay and to ComReg's satisfaction, that there will be no breach of the rules on confidentiality and Bidder behaviour set out above and the relation will not otherwise have a negative impact on the Award Process. For the avoidance of doubt, ComReg will exercise its discretion whether or not to grant an exemption acting reasonably and in accordance with its statutory functions, objectives and duties.

Changes to ownership structures

- A 8.8 After the Application Date, a Bidder and its Connected Persons must refrain from actions or omissions that establish a relation to another Bidder resulting in the Bidders falling outside permitted ownership structures. In the absence of an

exemption, failure to comply with this rule may result in partial or whole Deposit forfeiture and/or exclusion from the Award Process.

A 8.9 In any event, the Bidder must notify ComReg of any changes that impact on its ownership structures on which its Application is based after the date the Application is submitted.

Bidders subject to Restructuring

A 8.10 ComReg may, but does not guarantee to, permit an Applicant in a restructuring process to participate in the Auction subject to additional conditions to be set by ComReg on a case by case basis on receipt of the relevant disclosures.