



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

Multi Band Spectrum Award – Response to Consultation on Draft Information Memorandum

The 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz Bands

Response to Consultation

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Chapter 1

1 Introduction and Background

- 1.1 In May 2020, the Commission for Communications Regulation (“ComReg”) published a draft Information Memorandum (Document 20/32¹) setting out its proposed processes and procedures for the implementation of the award of the 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz bands (“Award” or “MBSA2”). Document 20/32 also included draft regulations that would be made under section 6 of the Wireless Telegraphy Act, 1926 for the granting of licences for individual rights of use for these frequencies.
- 1.2 Four interested parties responded to Document 20/32, being:
- Eircom Limited and Meteor Mobile Communication Limited (trading as ‘eir’ and ‘open eir’), collectively referred to as ‘eir Group’ or ‘eir’ (“Eir”);
 - Imagine Communications Group (“Imagine”);
 - Three Ireland (Hutchison) Limited (“Three”); and
 - Vodafone Ireland Limited (“Vodafone”).
- 1.3 Non-confidential versions of all four submissions are published in Document 20/68², and updated non-confidential submissions from Vodafone and Three are also published in Document 20/122s³.
- 1.4 Following publication of Document 20/32 (referred to hereafter as either Document 20/32 or the “draft IM”), ComReg published its Response to Consultation and Final Decision on the Award in Document 20/122 which included Decision D11/20 (“MBSA2 Decision”)⁴.
- 1.5 On 20 January 2021, ComReg published Information Notice Document 21/04 notifying interested parties that a statutory appeal has been brought by Three Ireland (Hutchison) Limited and Three Ireland Services (Hutchison) Limited against the MBSA2 Decision. In the Information Notice, ComReg noted that nothing in the appeal prevented ComReg from advancing the Award and that it would oppose the appeal in full⁵. See also in Section 2.2 below regarding these

¹ Document 20/32 - Proposed Multi Band Spectrum Award - Draft Information Memorandum and Draft Regulations – Published 13 May 2020.

² Document 20/68 - Proposed Multi Band Spectrum Award - Non-Confidential Submissions to ComReg Document 20/32 – Published 24 July 2020.

³ Document 20/122s - Updated Versions of Non-confidential Submissions to Document 19/124, 20/32 and 20/56.

⁴ Document 20/122 - Multi Band Spectrum Award - Response to Consultation and Decision - The 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz Bands – Published 18 December 2020.

⁵ ComReg subsequently issued an update to its Information Notice, Document 21/04R, informing interested parties that it sought an expedited court hearing and that a trial date is set for 2 June 2021.

matters.

- 1.6 As noted in Chapter 1 of Document 20/122, ComReg considered all submissions received to Document 20/32 that were relevant to the MBSA2 Decision. Submissions received to Document 20/32 that relate solely to the processes and procedures described in the draft IM are considered in this document and, in doing so, ComReg sets out its final position on same.
- 1.7 ComReg has carefully considered all the material submitted by Interested Parties in response to Document 20/32 and other relevant information before it. ComReg has, alongside this document, published:
- a report from DotEcon Limited (“DotEcon”) entitled “*Assessment of responses to Draft IM*” (Document 21/39a);
 - a report from DotEcon entitled “*MBSA2 Benchmarking Update*” (Document 21/39b); and
 - the Information Memorandum for MBSA2 (Document 21/40) (the “IM”).
- 1.8 While ComReg has carefully considered the expert external advice received throughout this process, it has formed its own views in arriving at the final positions set out in this document, guided by the statutory functions, objectives and duties relevant to its management of Ireland’s radio frequency spectrum (as outlined in Annex 2 of Document 20/122).
- 1.9 Capitalised terms in this document not otherwise defined shall have the meaning ascribed to them in Document 21/40.
- 1.10 This document is structured as follows:
- **Chapter 2** sets out ComReg’s consideration of issues raised by respondents to Document 20/32 (and not already addressed in Document 20/122);
 - **Chapter 3** summarises other updates and changes to the draft IM;
 - **Chapter 4** details the next steps in the award process; and,
 - **Annex 1:** includes some further practical guidance around completing Applications.

Chapter 2

2 Response to Submissions Received to Document 20/32

2.1 Introduction

2.1 In this chapter, ComReg considers a number of issues raised by respondents to Document 20/32, being:

- Indicative Award Timelines;
- Electronic Submission of Documents;
- Assignment Round;
- Refunds or Adjustments of Licence Fees; and
- Legal Terms and Conditions.

2.2 ComReg also provides clarifications on certain issues raised by respondents to Document 20/32 in relation to the following matters:

- Exclusion of Bids and Bidders;
- Licence duration and Licence termination;
- Rounding of base prices;
- Scenario where there is a restriction on the submission of Bids for 2.6 GHz Band TDD Edge Lots;
- Relative Caps; and
- Bidder Association.

2.2 Indicative Award Timelines

ComReg's view in Document 20/32

2.3 ComReg is committed to providing as much information as possible to assist Bidders in preparing for the Award Process. In this regard, Table 18 of Document 20/32 (included below) set out an indicative timeline from the Application Stage to the Main Stage of the Award, including the main milestones from the publication of the IM until and including the distribution of Bidder Materials.

Table 1: Indicative timeline for the Award Process as in Document 20/32

Stage	Milestone	Indicative Timeline ⁶
Application Stage	Publication of final IM on the ComReg website	X
	Presentation to Interested Parties on the Award Process and the Auction Rules	X + 3 weeks
	Deadline for submission of questions regarding the Award Process	X + 4 weeks
	Final date for ComReg to publish its responses to questions regarding the Award Process on its website	X + 6 weeks
	ComReg will accept calls for confirmation of the receipt of Deposits	X + 7 weeks
	Deadline for submission of completed Application Form	X + 8 weeks
	Deadline for receipt of Deposits	X + 8 weeks
	Restrictions on Award Process related communication 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 been successful in qualifying as a Bidder. Confirmation that: <ul style="list-style-type: none"> a Main Stage of the Auction is required and 	X + 14 weeks ⁷

⁶ Subject to change on publication of the final IM.

⁷ ComReg reserves the right to bring this date forward.

Stage	Milestone	Indicative Timeline ⁶
	<p>notification to Bidders of scheduled start date of the mock auctions; or</p> <ul style="list-style-type: none"> • a Main Stage is not required but an Assignment Stage is required and notification to Winning Bidders of Winning Bids and scheduled start date of the mock auctions; or • neither a Main Stage or an Assignment Stage is required and notification to Winning Bidders of Winning Bids and progression to Notification and Grant Stage 	
	Return of Deposits to Applicants who have not been successful in qualifying as a Bidder or who withdrew their Application.	X + 15 weeks
	Circulation of Bidder Materials for accessing and using the EAS and proceed to the start of mock auction for Bidders	X + 15 weeks
Main Stage (if required)	Auction to determine the Winning Bidder(s) for Lots and the Base Price to be paid	TBD
Assignment Stage (if required)	Determination of the specific frequencies to be assigned to each Winning Bidder of frequency-generic B-Lots and the Additional Prices to be	TBD

Stage	Milestone	Indicative Timeline ⁶
	paid by each Assignment Bidder	

Summary of views of respondents

- 2.4 Vodafone urged ComReg to adhere to the timelines set out in Document 20/32 as it would:
- allow for effective and efficient investment from operators so that consumers can have the best services possible; and
 - encourage investment to support infrastructure rollout, a critical input over which ComReg has a major role.
- 2.5 Eir welcomed the detail provided by the indicative timeline and suggested that ComReg provide a sufficiently comprehensive outline of further preparatory steps for Interested Parties to review and comment on. Eir submitted that such an outline could be prepared on the assumption that a Main Stage is required and that it should set out indicative and minimum timelines commencing from the circulation of Bidder Materials to the start date of the Auction. Eir maintained that this detail is required so that Bidders have sufficient time to prepare for their participation including in mock auctions.

Updated Information

ComReg's position in Document 20/122

- 2.6 At paragraphs 38 and 39 of the Executive Summary to Document 20/122, ComReg set out the envisaged next steps as follows:

*“38. Following this decision, ComReg will advance its response to consultation and **publication of the Information Memorandum during Quarter 1, 2021 which will commence the Award Process.** The Information Memorandum, when published, will be an implementation of, and will reflect the Decision made in this document.*

*39. Subsequently, ComReg will **present the draft licensing regulations for the consent of the Minister** for the Environment, Climate and Communications. Following ministerial consent, ComReg will accept applications to the Award Process.” [emphasis added]*

Three's appeal of the MBSA2 Decision

- 2.7 On 14 January 2021, Three Ireland (Hutchison) Limited and Three Ireland Services (Hutchison) Limited (collectively “Three”) lodged an appeal against the MBSA2 Decision to the High Court (“Appeal”).
- 2.8 As outlined by ComReg in Information Notice Document 21/04R⁸, Three's appeal does not of itself affect the taking effect of the MBSA2 Decision or prevent ComReg from implementing the MBSA2 Decision⁹. ComReg is opposing the appeal in full.
- 2.9 On 25 January 2021, the proceedings were admitted to the Commercial List of the High Court, and Vodafone Ireland was joined as a notice party at its request. On 10 March 2021, Eir and Tesco Mobile were also joined as notice parties.
- 2.10 Noting the urgency of the matter, and given among other things the need for the timely availability of radio spectrum to further enable 5G deployment and meet national and EU requirements which are of societal and economic importance and are in the public interest, the proceedings were, with strong urging from ComReg, afforded priority and given a hearing date of 2 June 2021 and are scheduled to run for 5 days¹⁰. The High Court has also been made aware of the need, in so far as is possible, for judgment in this matter to be handed down in as expeditious a manner as the Court can accommodate.

ComReg's Assessment and Final Position

- 2.11 ComReg remains committed to progressing the Award Process in a timely manner and consistently with its envisaged next steps as described in Document 20/122. As earlier outlined, the Appeal does not of itself affect the operation of the MBSA2 Decision or prevent action from being taken to implement the MBSA2 Decision
- 2.12 However, ComReg also observes that, based on the indicative Award timelines described in Document 20/32, as triggered by the publication of the IM in mid-April 2021, the deadline for submission of Application Forms and for receipt of Deposits (which are 8 weeks from the publication of the IM) would fall at or around the beginning of June; that is, just before or during the hearing for the Appeal. Understandably, this is not an ideal or practical timeframe, in particular, for the parties involved in the Appeal (noting that all three current MNOs are

⁸ ComReg Document [21/04R](#), “Appeal by Three in relation to Multi Band Spectrum Award – The 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz Bands” published 20 January 2021 and revised on 29 January 2021.

⁹ See Regulation 7(1) of the Framework Regulations which provides that “... *lodging an appeal with the High Court from a decision of the Regulator does not of itself affect the operation of the decision or prevent action from being taken to implement the decision.*”

¹⁰ Record Number “2021 9 MCA” available on <http://www.highcourtsearch.courts.ie/>

involved in same), particularly when a decision of an Interested Party to participate in the Application Stage involves investment of time and resources.

- 2.13 Given these developments, and in view of providing a reasonable accommodation of the above, ComReg considers it appropriate to adjust certain steps of the Application Stage of the Award Process in the limited and specific manner as outlined below. Apart from these relatively minor adjustments, ComReg reiterates its commitment to progressing the Award Process in a timely manner.

Revised Application Stage

- 2.14 Specifically, the Application Stage will adopt a staggered approach, and will now consist of 2 phases, as follows:

- Phase 1 will consist of the submission of the Phase 1 Application Form and all supporting information. This will include Part 1 (Administrative Information, list of Insiders and ownership structure) and Part 2 (Applicant Declaration) of the Application Form (“Phase 1 Application Documentation”)¹¹. The **Phase 1 Application** Documentation will need to be submitted between **14 and 18 June 2021** (i.e. which is broadly consistent with the indicative timetable of “X + 8 weeks” in the draft IM where X is the date when the final IM is published on ComReg website) and submitted in accordance with the procedures set out in Section 3.3 of the IM; and
- Phase 2 will consist of the submission of the Phase 2 Application Form and any supporting information as may be required. This will include Part 3 of the Application Form (the Initial Bid Form) (“Phase 2 Application Documentation”) and the associated Deposit. This **Phase 2 Application** will need to be submitted prior to the Phase 2 Application Deadline¹² of **6 August 2021**¹³ with the **receipt of Deposits by 23.59 hours on the 6 August 2021**. In submitting the Phase 2 Application Documentation, Applicants can update its list of Insiders (as specified in Part 1 of the Application Form) if required.

- 2.15 These adjustments are outlined in the IM at Table 17 (extracted below), Sections 3.3, 3.4 and also in Annex 3 where the Application Form is split in two to align with the two phases.

¹¹ See Section 3.3 of the IM.

¹² Details of the application procedure for the Phase 2 Application will be communicated to Applicants.

¹³ i.e. 8 weeks after 10 June 2021, the scheduled last day of the Appeal hearing.

Table 2: Table 17 of the IM: Indicative timeline for the Award Process

Stage	Milestone	Indicative Timeline ¹⁴
Application Stage	Publication of final IM on the ComReg website and start of Award Process	Friday 16 April 2021
	Registration of Interested Parties for online presentation	By 28 April 2021
	Online presentation to Interested Parties on the Award Process and the Auction Rules	Friday 7 May 2021
	Deadline for submission of Phase 1 Questions regarding the Award Process	Friday 14 May 2021
	Final date for ComReg to publish its responses to Phase 1 Questions regarding the Award Process on its website	Friday 28 May 2021
	Phoneline open for scheduling Phase 1 Application appointments.	2 June 2021 to 17 June 2021
	Deadline for submission of completed Phase 1 Application Documentation	Friday 18 June 2021
	<i>Restrictions on Award Process related communications come into effect</i>	<i>On submission of first Phase 1 Application Documentation to ComReg</i>
	Deadline for submission of Phase 2 Questions regarding the Award Process	Friday 16 July 2021
	Final date for ComReg to issue responses to Phase 2 Questions regarding the Award Process to Applicants.	30 July 2021

¹⁴ Subject to change, which may include changes that might be required following publication of any judgment on the appeal on Decision D11/20.

Stage	Milestone	Indicative Timeline ¹⁴
	ComReg will accept calls for confirmation of the receipt of Deposits	29 July 2021 to 6 August 2021
	Deadline for submission of completed Phase 2 Application Documentation	Friday 6 August 2021
	Deadline for receipt of Deposits	23:59 hours on Friday 6 August 2021
Qualification Stage	Deadline for withdrawal of Application	Friday 13 August 2021
	Commencement of Bidder Training (Auction Playground and Online WDP)	Monday 16 August 2021
	Online Bidder Training presentation	Tuesday 17 August 2021
	<p>Each Applicant to be informed by ComReg about whether or not it has been successful in qualifying as a Bidder.</p> <p>Confirmation that:</p> <ul style="list-style-type: none"> • a Main Stage of the Auction is required and notification to Bidders of scheduled start date of the mock auctions; or • a Main Stage is not required but an Assignment Stage is required and notification to Winning Bidders of Winning Bids and scheduled start date of the mock auctions; or 	Friday 3 September 2021 ¹⁵

¹⁵ ComReg reserves the right to bring this date forward.

Stage	Milestone	Indicative Timeline ¹⁴
	<ul style="list-style-type: none"> neither a Main Stage or an Assignment Stage is required and progression to Notification and Grant Stage 	
	Return of Deposits to Applicants who have not been successful in qualifying as a Bidder or who withdrew their Application.	Friday 10 September 2021
	Circulation of Bidder Materials as required for accessing and using the EAS and proceed to the start of mock auction for Bidders. ¹⁶	Friday 10 September 2021
Main Stage (if required)	Auction to determine the Winning Bidder(s) for Lots and the Base Prices to be paid	TBD
Assignment Stage (if required)	Determination of the specific frequencies to be assigned to each Winning Bidder of frequency-generic B-Lots and the Additional Prices to be paid by each Assignment Bidder	TBD

2.16 ComReg considers this to be a reasonable, pragmatic, and proportionate approach for reasons including that:

- it would allow ComReg to progress necessary preparatory steps (e.g. on-line presentation of the Award Process/Auction Rules, question and answer process etc) and more administrative aspects of the application process (i.e. submission of administrative information), thus, reflecting the public interest considerations in progressing the Award Process in a timely manner;

¹⁶ ComReg will share the relevant bidder materials for accessing the Bidder Training software (i.e. EAS playground, Online WDP) at an earlier time.

- to a large extent, these preparatory steps entail substantive work by ComReg and its auction advisers (i.e. on-line presentation, responding to questions etc.) and largely administrative tasks only by Interested Parties; and
- Interested Parties would still be provided with the 8 weeks as envisaged in the indicative timeline in Document 20/32 - to submit the Initial Bid Form and associated Deposit, this date now falling, in any event, after the current end date for hearing of the Appeal.

Provision of Additional Specificity

- 2.17 Regarding Eir's request for the provision of additional specificity from the period commencing with the circulation of Bidder Materials to the start date of the Auction, ComReg cannot say with certainty the requirement or date for an Auction at this time as the auction date could be influenced by a number of factors.
- 2.18 However, in relation to Eir's intention to be able to prepare for the other stages of the Award, ComReg has brought forward and set out the dates in Table 17 of the IM, when the Bidder training material (i.e. Auction Playground and Online WDP) will be made available. ComReg notes that the key elements of the Bidder training are provided for with these two elements which allows Applicants / Bidders to explore and familiarise themselves with the elements of the software along with testing certain various bid strategies.
- 2.19 ComReg has retained a provision for a mock auction following the Qualification Stage. The primary purpose of this facility is to demonstrate to Bidders, via scripted bid scenarios, certain features of the Auction (for example experiencing a relaxed primary bid etc.). The Auction Playground, on the other hand, provides greater opportunity for Applicants / Bidders to experiment with and develop familiarity with the Auction system. Applicants / Bidders should therefore make best use of these earlier bidding preparatory opportunities, including the Auction Playground and Online WDP.
- 2.20 In relation to the other stages of the Auction, ComReg will ensure sufficient notice is given to Bidders as required.
- 2.21 In this regard, paragraph 3.22 of Document 20/32 (also paragraph 3.22 in Document 21/40) states that:

“ComReg will provide further information on the timing of these later stages to the appropriate parties (e.g. Bidders, Winning Bidders) during the course of the Award Process. However, ComReg can confirm that, subject to developments outside its control, the timelines for these later stages will be in accordance with

the provisions of this IM which, among other things, provides 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 of this document);*
- *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 of this document);*
- *following the outcome of the Assignment Round (if required), a period of ten clear Working Days will be provided to Assignment Bidders to negotiate a re-organisation of the specific frequencies awarded in the Assignment Round, subject to a number of restrictions and approval by 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 of this document).”*

2.3 Electronic Submission of Documents

ComReg’s View in Document 20/32

- 2.22 Section 3.3 of Document 20/32 detailed the Application Stage of the Award Process, including how Interested Parties must submit the required documentation to take part in same. In particular, ComReg specified that copies of Applications be submitted in hardcopy form and in person at ComReg’s offices.
- 2.23 ComReg also specified that the methods of communication between ComReg and Applicants / Bidders are to be conducted by telephone or via letter using the methods set out in paragraphs 3.34 and 3.35 of Document 20/32 respectively.

Summary of views of respondents

- 2.24 Eir welcomes that it is no longer a requirement to provide copies of Application documentation on a CD-ROM as was the case in previous award processes. Eir also submits that further steps could be taken to modernise the Application process by developing an electronic means for the submission of Application documentation, and thereby making the process more efficient.

ComReg’s Assessment and Final Position

- 2.25 ComReg notes that Section 3.3.6 of the IM defines the Confidential Information and Applicant/Bidder behaviour in the context of the Award and that the management of documentation that contains Confidential Information is critical

- to ensuring the integrity of the Award. Therefore, the submission and management of documentation needs to be robust to ensure this is the case.
- 2.26 Considering Eir's submission and also noting that COVID-19 restrictions of some kind will likely be in place until the submission of Phase 1 Application Documentation and, possibly, Phase 2 Application Documentation, ComReg has further considered the processes available for the submission of material.
- 2.27 To ensure the secure management of Confidential Information, Interested Parties will continue to be required to submit their Phase 1 Application Documentation in hardcopy format in person.
- 2.28 However, subsequent information¹⁷ (for example, should it be required or requested by ComReg) and notifications from ComReg to Applicants will be facilitated by electronic means where appropriate.
- 2.29 ComReg will establish a secure file transfer protocol for electronic submissions, the unique details of which will be shared with Applicants only. Applicants will receive these details at the time of submitting its Phase 1 Application Documentation.
- 2.30 Phase 2 Application Documentation can be submitted via electronic means with the use of electronic signatures (where a signature is required in respect of a relevant document).
- 2.31 The method of submission of Phase 2 Application Documentation is at the discretion of the Applicant, and Applicants will be required to state what method it will use for the Phase 2 Application Documentation on its Phase 1 Application Form¹⁸.
- 2.32 In order to maintain the security and integrity of the Award Process and to ensure that Applicants are appropriately bound by the documents they submit as part of the Award Process, documents submitted to ComReg electronically which are required to be signed must be executed by means of an electronic signature¹⁹ of an Authorised Agent (or both Authorised Agents as the case may be) which complies with the requirements set out below. This will then be considered as the original version of a submitted document.
- 2.33 Where Applicants choose not to submit Phase 2 Application Documentation or

¹⁷ With the exception of any further updates to the Phase 1 Application Documentation, including any update to its list of Insiders.

¹⁸ Annex 3a of Document 21/40.

¹⁹ All references in this document and in the Information Memorandum to an “*electronic signature*” means an electronic signature which meets the following definition specified by the eIDAS Regulation: “*electronic signature*’ means data in electronic form which is attached to or logically associated with the data in electronic form and which is used by the signatory to sign”.

associated documents electronically, they will need to submit their documents to ComReg in person in accordance with the submission process for hardcopy documents set out in the Award Rules.

2.34 ComReg will only accept electronic signatures that have been generated by means of a secure reputable third-party electronic signature platform for which a verifiable audit trail can be provided. Scanned copies of manuscript signatures, typewritten or jpeg or other pictorial or graphic representations of a signature will not be accepted. The following types of electronic signatures will be accepted:

- advanced electronic signatures and qualified electronic signatures within the meaning of, and complying with, the eIDAS Regulation²⁰; and
- a simple or basic electronic signature generated by means of a secure reputable third-party electronic signature platform using, at a minimum, two factor authentication²¹. The information used as part of the two factor authentication process (i.e. e-mail address and mobile phone number of the relevant Authorised Agent²²) must be the same information provided by the Applicant as part of the Phase 1 Application Form (Table A3.1 of the IM).

2.35 Each document which is electronically signed must be accompanied by a document, or equivalent confirmation, which reflects the verifiable electronic audit trail for the electronic signature. This is sometimes referred to as a certificate of completion (or equivalent) by commonly used electronic signature platforms and demonstrates how and when the electronic signature process for the relevant document was undertaken.

2.36 Where an Applicant is from outside Ireland, evidence will be required that the Applicant and its Authorised Agents will be bound by any signature which is submitted electronically as part of the Award Process. This evidence must be provided by means of a legal opinion from a law firm in the Interested Party/Applicant's jurisdiction, carrying in excess of €20,000,000 in professional indemnity insurance, addressed to ComReg, certifying that the Applicant and its Authorised Agents are entitled to use, and will be bound by, the electronic signature and electronic signature process which the relevant Applicant will use

²⁰ Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC.

²¹ For the avoidance of doubt, the electronic software is used to carry out the two-factor authentication.

²² This does not preclude further appropriate electronic security measures that the Applicant may also use.

as part of the Award Process²³.

- 2.37 ComReg reserves the right to inspect and seek verification of any electronic signature or electronic signature process and to refuse to accept an electronic signature or electronic signature process which does not comply with the above requirements.
- 2.38 The specimen signature of an Authorised Agent may be used to verify the signatures submitted on documents executed by the Authorised Agent as part of the Award Process. Note that where a document is permitted by the Award Rules to be executed electronically by means of an electronic signature which complies with the Award Rules, it is not obligatory that the same specimen signature of the Authorised Agent be used where the relevant electronic signature platform auto-generates an electronic signature of the Authorised Agent. In such circumstances, the electronic signature audit information (required to be submitted pursuant to the Award Rules) may be used to verify the electronic signatures submitted on documents executed by the Authorised Agent as part of the Award Process.
- 2.39 Section 3.3 of the IM has been updated to reflect that the secure file transfer can be used in submitting certain formal documentation as requested by ComReg or for notifying a breach of the Award Rules. For the avoidance of doubt, the new electronic medium is not to be used for ad-hoc correspondence and should only be used for the matters as specified in the IM or as otherwise specified by ComReg.
- 2.40 Depending on responses of Interested Parties/Applicants in their Phase 1 Application Documentation as to whether they intend to submit their Phase 2 Application Documentation and any associated documents electronically, ComReg reserves the right to amend the process set out in this section and in the IM in respect of all or parts of the phase 2 process. This may include, without limitation, discontinuing the use of hardcopy or electronic submissions. ComReg will provide further details in respect of the submission process to Applicants following the submission of Phase 1 Application Documentation
- 2.41 Any questions in respect of these requirements should be submitted early in the Award Process and in accordance with the clarifications and questions process set out in the Information Memorandum.
- 2.42 For the avoidance of doubt, should ComReg determine that a document provided as part of the Phase 1 Application Documentation does not meet the requirements as set out in the IM and this is to be remedied by the Applicant, the

²³ Where applicable, this legal opinion may be combined with the legal opinion provided in respect of Paragraph 3.57 of the IM.

updated document must be provided in hardcopy in person.

Submission of questions

- 2.43 As the Application Stage is now split into 2 phases (as set out in Section 2.2 above) ComReg will facilitate a second round of questions from Applicants only.
- 2.44 ComReg anticipates that this second round of questions will assist Applicants where questions may arise or clarifications be required between the closure of Phase 1 Questions and the submission of Phase 2 Application Documentation.
- 2.45 See Section 3.1.1 of this document for further information.

2.4 Assignment Round

2.4.1 Assignment Round – Negotiation Phase

ComReg's View in Document 20/32

- 2.46 Section 3.6 of the draft IM describes the Assignment Stage noting that it comprises two parts; the Assignment Round (if required) and the Negotiation Phase. 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 is not required) across all relevant bands. As the frequencies associated with A-Lots are fixed, they are not affected by the Assignment Stage.
- 2.47 The outcome of the Assignment Round, if required, would form the Provisional Assignment Plan, setting out frequency assignments within the frequency range in each band for each Assignment Bidder. Following the determination of the Provisional Assignment Plan for each band, there would be a Negotiation Phase during which Assignment Bidders would be given a period of ten Working Days to negotiate and submit a request to ComReg for a reassignment of the frequencies they were assigned in the Provisional Assignment Plan.

Summary of views of respondents

- 2.48 Three submits that it would be preferable if the Assignment Plan could be agreed entirely by the winners of generic B-Lots in each band without the need for an Assignment Phase²⁴. Three submits that this would represent the most efficient outcome as no additional fees would be required and all Winning Bidders would need to be happy with the outcome. However, Three recognises that in practice it cannot depend on a successful Negotiation Phase to achieve this and so an

²⁴ Three does not specify what it means by an Assignment Phase and so in this instance, ComReg assumes it is referring to an Assignment Round.

Assignment Phase (see above) may be necessary in any event.

- 2.49 Three observes that its experience of past Negotiation Phases is that they have not been successful and submits that the reason for this is because Assignment Bidders enter the Negotiation Phase already knowing the outcome of the Assignment Round. In particular, Three notes the following:
- i. Each Assignment Bidder has a default option, and each Bidder knows what their Additional Price will be which must be paid regardless of the outcome of the Negotiation Phase, and that this acts as a barrier to change.
 - ii. Some Bidders do not want to have to pay the opportunity cost for an assignment that they “give up” while others will perceive that their best advantage is to abide by the outcome of the Assignment Stage.
- 2.50 Three proposes that ComReg should change the Assignment Stage such that the results of this Assignment Round would not be notified to Assignment Bidders until after the Negotiation Phase. If the Negotiation Phase then results in an agreed Assignment Plan in any band, ComReg should accept this without running the Winner and Price Determination for that band and with zero Additional Prices. Where an agreement is not reached, then ComReg should run the Winner and Price Determination algorithm.
- 2.51 Three submits that this change would mean that Assignment Bidders would be incentivised to reach an agreement with no Additional Price and without requiring ComReg to determine the outcome, and that this would produce the most efficient result.

Summary of DotEcon’s views

- 2.52 DotEcon notes that it previously discussed the Negotiation Phase in relation to the 2012 MBSA following similar suggestions from Vodafone and Copenhagen Economics. At the time, DotEcon advised that a significant advantage from running the process as proposed is that an agreement in the Negotiation Phase would not necessarily be required from all parties which would avoid a situation where a solution is blocked by just a small number of Bidders (who may have adverse incentives to ‘hold up’ the process), even when all others agree. DotEcon reiterates this rationale as a significant reason for not making changes to the proposed approach.
- 2.53 DotEcon also notes that Three’s proposal could provide opportunities for some parties to try and extract a financial payment from others. For example, a bidder that is indifferent between different locations within the band may still try to extract a payment from a competitor that it knows has a higher valuation for specific frequencies, when payment from that competitor would not result from

an assignment round in which bidders bid to valuation.

2.54 Further, DotEcon is unconvinced by Three's rationale for why the Negotiation Phase has "not been successful" in the past. In summary:

- That the Negotiation Phase has not resulted in an alternative arrangement does not, of itself, indicate a lack of success but rather that in all likelihood the Assignment Round bidding delivered an efficient outcome (or at least a sufficiently efficient outcome) that further negotiation could not improve.
- If the alternative assignment being put to a Bidder is better than its current assignment, the Additional Price is not relevant to this choice, as the Additional Price is paid in both cases. If the alternative assignment is less preferable, then it is entirely rational for the Bidder to not be willing to switch frequencies but pay the full Opportunity Cost associated with its winning assignment.
- If the Assignment Round delivers an efficient result, which is very likely if Bidders' frequency preferences depend only on where they are located (rather than where other bidders are located), then DotEcon does not expect the Negotiation Phase to affect the outcome.

2.55 For these reasons DotEcon does not believe that Three's alternative approach would be preferable to the current process proposed by ComReg and recommends that no changes are made to the final IM in this regard.

ComReg's assessment and final position

2.56 At the outset, ComReg notes that the Assignment Round provides a market mechanism to determine the specific frequency assignments for each Winning Bidder, which should promote efficient assignments in each of the relevant bands. However, to the extent that some Bidders may have a separate and/or additional preference to be located near a particular Assignment Bidder, there is no way to accurately reflect this in the Bids submitted in the Assignment Round.

2.57 A key purpose of the Negotiation Phase is to facilitate Assignment Bidders that may have a requirement or preference to be assigned spectrum rights of use next to (or close to) another Assignment Bidder in order to facilitate a network sharing, spectrum pooling or other related arrangements that require certain assignments. This would give Winning Bidders the opportunity to agree among themselves an alternative configuration of assignments to facilitate contiguity of spectrum holdings, where appropriate, based on information about Bidders' preferences that would otherwise not be available to the regulator (or other Bidders who may not know which assignment frequencies would be next to a another Bidder). In that regard, ComReg agrees with DotEcon that the Negotiation Phase is intended to correct any residual efficiency arising after the

Assignment Phase.

- 2.58 ComReg notes that the form and manner of the Negotiation Phase was considered in detail as part of the 2012 MBSA²⁵. In that regard, ComReg agrees with DotEcon that the problem of ‘hold up’ continues to be an important concern and is a significant limitation of Three’s proposal. ComReg considers that the Negotiation Phase should continue to be carried out following the completion of the Assignment Round and following the release of results, including the Additional Prices to be paid in respect of the Assignment Bidder’s own winning Assignment Bids. In particular, it is desirable that Assignment Bidders have information about the ‘default’ frequency assignments for all Assignment Bidders prior to the Negotiation Phase in order to prevent the problem of “hold-up” where there is a need for multiple Bidders (or all) to agree on the final outcome.
- 2.59 For example, absent releasing such information, one Bidder (who is potentially indifferent about the outcome) could essentially veto the entire outcome, when one or more bilateral agreements could have been concluded if those parties knew the agreement of the “hold up” Bidder(s) was not necessary. The current approach (as set out in the draft IM) encourages Bidders to submit sealed bids based on their valuations, whilst still allowing for the possibility of re-organisation of the band by private negotiation prior to the issuing of Licences. In effect, this has the significant advantage that agreement need not necessarily be reached amongst all parties, as bilateral or multilateral deals could be made.
- 2.60 Further, ComReg also agrees with DotEcon that, where a Bidder is indifferent between the frequency positions in the band, it could try to extract a payment from a competitor that it knows has a higher valuation for specific frequencies, noting that such a payment from that competitor would not result from an Assignment Round in which Bidders bid to valuation. Under the proposed approach, such Bidders would at most receive frequencies that other Bidders would be indifferent about and which would therefore prevent such Bidders leveraging their position to extract payment in the subsequent Negotiation Phase.
- 2.61 ComReg also discords with Three’s contention as to why the Negotiation Phase has not been used to date.
- 2.62 First, and in relation to Three’s suggestion that Bidders may be reluctant to agree on an alternative assignment because they do not want to pay the Additional Price for a frequency option they are giving up, ComReg agrees with DotEcon that the Additional Price is not relevant, if the alternative assignment being put to a Bidder is better than its current assignment because the Additional Price is paid in both cases. Alternatively, If the alternative assignment is less preferable, then

²⁵ See Section 4.5.5.2 of Document 12/25.

it is entirely rational for the Bidder to not be willing to switch frequencies but pay the full opportunity cost associated with its winning assignment.

- 2.63 Second, and in relation to Three's suggestion that some Bidders will perceive that the best approach is to stick with the outcome of the Assignment Round, ComReg agrees with DotEcon that it is reasonable for a Bidder to want to keep its winning frequency assignment if it perceives that to be a preferable assignment than any proposals made during the Negotiation Phase.
- 2.64 More generally, ComReg notes that the lack of alternative outcomes in past Negotiation Phases likely points to the Assignment Round bidding itself delivering an efficient outcome (or at least a sufficiently efficient outcome) which the Negotiation Phase could not improve. Further, as noted above, the Negotiation Phase was largely designed for Bidders that may have preferences to be assigned spectrum rights in proximity to other winners. Where such scenarios do not arise, Bidders would not have any need to be assigned alternative frequencies since their Assignment Bids would have already reflected their preferences among competing frequency options.
- 2.65 Therefore, ComReg's final position is that no change to the draft IM is required in this regard.

2.4.2 Assignment Option Generation Algorithm

ComReg's View in Document 20/32

- 2.66 Section 4.3.2 of the draft IM describes the underlying principles of how winning Bidders of generic Lots are presented with Assignment Options in the Assignment Round. An Assignment Option specifies a specific frequency range within the band in each Time Slice and represents a unique feasible assignment that could be assigned to each Assignment Bidder.
- 2.67 In Annex 9 of Document 20/32, ComReg outlined the methodology for generating Assignment Options. Assignment Options are determined independently for each band under the following principles:
- For the 700 MHz Duplex, the Assignment Options for an Assignment Bidder comprise the set of frequency ranges that could feasibly be assigned to the Assignment Bidder whilst still meeting the requirements set out in Section 4.3.1 of Document 20/32.
 - For the 2.1 GHz, 2.3 GHz and 2.6 GHz bands, ComReg proposed that an algorithm would be used for generation of Assignment Options in accordance with the principles set out in paragraph A9.3 of Document 20/32 (and as further particularised elsewhere in Annex 9 of Document 20/32).

Summary of views of respondents

- 2.68 Three submits that the proposed algorithm is unnecessarily complex for the most likely Assignment Round situations and suggests that ComReg instead only use the algorithm described in Annex 9 for situations where there are more than six winners in a band.
- 2.69 Three also expresses a concern regarding the text in paragraph A9.3 which states:
- “For the 2.1 GHz, 2.3 GHz, 2.6 GHz FDD and 2.6 GHz TDD bands in the Assignment Stage, an algorithm will be used for the generation of Assignment Options that: [...] gives Bidders a variety of options for location of contiguous frequency-generic blocks across the band, but also tries to minimize misalignment of frequencies between Time Slices.”* (emphasis added by Three) (emphasis added by Three).
- 2.70 Three queries why ComReg is using an algorithm that attempts to minimise misalignment of frequencies between Time Slices when, for most allocation outcomes, it should be able to use, in its view, a brute force solving technique that will precisely minimise same. Three submits that the proposed recursive algorithm does not identify each and every band plan, but rather it produces a shortlist of band plans from which bid options are derived. Three requests that ComReg clarify whether Three’s understanding of this point is correct.
- 2.71 Three further submits that it is unlikely there will be more than 6 winners in the same band meaning there is a maximum of 518,400 band plan options, and so a brute force search would be tractable. Three considers this to be preferable to more complex algorithms which it submits are difficult to understand, verify, and by design may be less than 100% reliable. Three suggests there is a risk that, if ComReg’s proposed algorithm is applied in situations where brute force is tractable, appropriate assignment bid options would be excluded or inappropriate bid options would be included.
- 2.72 Finally, Three proposes that ComReg:
- use brute force to identify Assignment Round options if the number of Winning Bidders in the same band is 6 or less; and
 - only use the algorithm described in Annex 9 in bands where there are 7 or more winning bidders in the same band.
- 2.73 Eir notes that ComReg is proposing to use random selection to select a single Candidate Frequency Plan for each winner ordering in the case where there are multiple frequency plans that minimise the Total Time Slice Variation (“TTSV”) and have the greatest value of unsold Time Slice 1 lots forming one contiguous

range. Eir notes that, whilst not explicit, the implication is that these random selections would be made independently across different winner orderings.

- 2.74 Eir submits that the problem with this approach is that the result, in terms of the Assignment Options presented to each Bidder, may be more limited than it needs to be. Eir refers to step 3 of example 4 of Annex 9 of the draft IM where Bidders A and B are presented with 6 possible options. Eir suggests that a different set of random selections could have led to Bidders A and B being presented with only 4 options and gives an example where the second and sixth options are omitted. Eir submits that these Bidders would then have no option available to them in which they could win lots 5 and 6 in both Time Slices.
- 2.75 Eir suggests that bidders should always be presented with the widest possible range of Assignment Options compatible with an efficient assignment, and that all tied best Candidate Frequency Plans for each winner ordering should be taken forward to determine the Assignment Options presented to each bidder.

Summary of DotEcon's views

- 2.76 At the outset, DotEcon observes that Three's proposal is somewhat incomplete, in that it does not address unsold Lots. In that regard, DotEcon observes in respect of Three's proposal that:
- it maintains the notional TS2 bidder (a device to gather the unsold TS2 Lots), and that the Notional Winner counts towards the six winners when deciding whether to use brute force; and
 - TS1 unsold Lots would still be used to minimise misalignment. That is, TTSV for a band plan is calculated after positioning TS1 unsold Lots optimally, not immediately after placing Bidders in the band in order.
- 2.77 DotEcon notes that Three's suggestion that the restriction that the Bidder ordering is the same across Time Slices be dropped considerably increases the number of band plans to be considered. DotEcon also notes that the brute force search would only keep Bidder orderings that minimised TTSV. Alternatively, ComReg's proposed approach provides Bidders with more choice of frequency locations spread, as a candidate band plan is generated for different Bidder orderings, even if some of these orderings do not minimise TTSV.
- 2.78 Finally, DotEcon notes that it did consider a process similar to Three's brute search proposal but which instead maintained a common ordering of Bidders present across both Time Slices. However, DotEcon ruled out this alternative because it could greatly restrict the frequency options available to bidders and there was no reasonable basis for setting such a dominating priority for the Assignment Round.

- 2.79 In relation to Eir's suggestion that Bidders be presented with the widest possible range of Assignment Options, DotEcon notes that its concern is specific to the random tie breaking rules which may restrict certain Assignment Options. While the symmetrisation of frequency options in step 3 of the proposed process partially addresses Eir's issue, frequency options may nevertheless be restricted by tie break choices.
- 2.80 DotEcon therefore recommends that ComReg adopt Eir's suggestion, noting that the computational complexity in doing so is not too severe.

ComReg's assessment and final position

- 2.81 First, in relation to Three's request for clarification, ComReg confirms Three's understanding is correct. i.e. rather than identifying each and every minimum misalignment band plan, the proposed algorithm set out in the draft IM identifies a shortlist of band plans from which Assignment Options are derived.
- 2.82 Second, ComReg has a preference for keeping the Bidder ordering the same across both Time Slices because:
- it provides stability for interference management between frequency adjacent licensees; and
 - this approach is likely to be more efficient in facilitating any transition that may be required between Time Slices.
- 2.83 This approach provides for the efficient management and use of the radio frequency spectrum by assigning spectrum rights of use such that radiocommunication systems can operate with minimum interference whilst maximising the use of the spectrum.
- 2.84 Given the above, ComReg agrees with the views of DotEcon that the objective is not solely to maximise alignment across Time Slices but rather to obtain reasonable alignment whilst giving Bidders a range of choices for frequencies. The approach suggested by Three could result in fewer Assignment Options, even where there are a limited number of Bidders, noting that the Bidders would ultimately determine what frequencies were assigned depending on Bids made/and or arising from the outcome of the Negotiation Phase.
- 2.85 In relation to Three's view that it would be appropriate to use a 'brute force' methodology if there are six or fewer winners in a band and use the proposed approach as set out in the draft IM if there are seven or more winners, ComReg notes DotEcon's view that:
- I. it appears that Three is suggesting that ComReg drops the restriction that the bidder ordering is the same across Time Slices, because it refers

to $N!^2$ feasible band plans (note that this is only the exact number of feasible band plans if there are no unsold lots). DotEcon notes that this considerably increases the number of band plans to be considered and is unlikely to reduce TTSV (i.e. mismatch across Time Slices) relative to the approach as described in the draft IM (i.e. bidders are placed in the same order in each Time Slice, unless they are edge winners); and

- II. the brute force search suggested by Three would presumably only keep bidder orderings that minimised TTSV (i.e. mismatch across Time Slices). Alternatively, the approach set out in the draft IM provides Bidders with more choice, as a candidate band plan is generated for different bidder orderings, even if some of these orderings do not minimise TTSV).

2.86 In that regard, ComReg also disagrees with Three's suggestion that a brute force approach is appropriate, for the following reasons:

- the objective is not solely to maximise alignment but rather to try and obtain reasonable alignment whilst giving Bidders a range of choices for frequencies;
- it is important that Bidders have a reasonably wide range of Assignment Options and an objective of minimising mismatch is not a higher priority than this. Rather, ComReg seeks to provide a reasonable balance between these objectives that keeps the mismatch low whilst also providing a sufficiently wide choice of frequency locations; and
- using a brute forcing search for the minimum TTSV would typically result in fewer frequency options, and while simpler, such a change would prioritise alignment across Time Slices such that other frequency choices that may be efficient could be precluded.

2.87 ComReg does not agree that the approach set out in the draft IM is excessively complex and/or difficult to verify and notes that the burden of computational complexity falls entirely on the auctioneer, and that the various processes (e.g. algorithms) to determine the assignment options will be tested and verified independently from ComReg and DotEcon in order to ensure that the Assignment Options provided to Winning Bidders are consistent with the IM. There would be no additional complexity for Winning Bidders beyond expressing preferences on each of the Assignment Options (which would be required regardless of the method for determining Assignment Options).

2.88 In relation to Eir's concern that the rules for tie-breaking restricts the choices available to Bidders, ComReg notes and agrees with DotEcon's view that, while the symmetrisation of frequency options in the proposed process partially

addresses Eir's issue, frequency options may nevertheless be restricted by tie break choices.

- 2.89 ComReg considers that Bidders should be provided with the widest range of Assignment Options subject to the constraints set out in the draft IM, while ensuring that computational complexity does not become excessive. ComReg sought DotEcon's views in relation to the computation complexity arising from Eir's suggestion and, in that regard, DotEcon considers that Eir's suggested approach would not create excessive complexity as the computational implications are not too severe and could therefore be implemented.
- 2.90 Accordingly, ComReg will implement Eir's suggested approach and this change is reflected in the IM.

2.5 Refunds or Adjustment of Licence Fees

ComReg's View in Document 20/32

- 2.91 In Section 2.3.7 of the draft IM, ComReg detailed the rules regarding the provision of refunds or adjustments of Licence Fees where there is a delayed commencement of Lots. In particular, paragraph 2.97 stated:

2.97 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 SAF already paid by the Winning Bidder on a daily basis for each whole day following the commencement dates as set out in paragraph 2.23 and Table 5 (or other commencement date as indicated by ComReg in relation to the Award Process) that ComReg does not make the Lot available for use; and*
- a pro-rata portion of SUFs already paid by the Winning Bidder on a daily basis for each whole day following the commencement dates as set out in paragraph 2.23 and Table 5 (or other commencement date as indicated by ComReg in relation to the Award Process) that ComReg does not make the Lot available for use.*

Summary of views of respondents

- 2.92 Three submits that this method of calculating refunds detailed in paragraph 2.97 simply assumes a linear division of the value of a Licence across each day of its duration and ignores the time-related discounting that would be applied by Bidders when considering investing in a 20 year asset.
- 2.93 Three also submits that the early days of a Licence will make a significantly higher contribution to the overall value of same for the Winning Bidder than the

final days. As a result, Three submits that ComReg is undervaluing the loss to a Winning Bidder of any delayed commencement.

- 2.94 Therefore, Three requests that ComReg applies discounted cash flows to the calculation of refunds as it does when calculating the reserve price that should apply for each Lot.

Summary of DotEcon's views

- 2.95 DotEcon notes that there is a high degree of uncertainty around the timing of the benefits licensees enjoy under the licence and it is debateable what method of allocating the overall value of a licence across time might be best. In particular, there is no clear best method and questions of simplicity, predictability, convenience and administrative efficiency also apply. ComReg should consider these factors in determining which approach to use in the calculation of refunds of SAFs and/or relevant SUFs.
- 2.96 However, DotEcon advises that given that similar calculations are used for establishing minimum/Reserve Prices and since there has been no particular objection to this approach, it could be appropriate in this award to apply the same principles /minimum prices to the calculation of refunds in the event of a delayed commencement.
- 2.97 Should ComReg adopt this approach, DotEcon recommends an approach similar to and consistent with the methodology used to estimate the price of the 2.1 GHz Time Slice 1 Lots achieved in the award for the purpose of calculating any applicable liberalisation fee for Eir. For example:
- Its recommendation on forming an estimate of the proportion of the SAF to be used would be to allocate a proportion of the total SAF to each Lot included in the Package won by the Bidder in proportion to the Round Prices for those Lots in the final Primary Bid Round. That would give a SAF per Lot for the purpose of calculating any refunds due to that Bidder.
 - Once the SAF has been distributed between the Lots won by the Bidder, in order to calculate the level of any applicable SAF refund for a given Lot:
 - amortise the proportion of the SAF allocated to that Lot over the licence term associated with that Lot to give a daily value (using a real discount rate²⁶); and

²⁶ The real discount rate would be based on the annual mobile WACC of 5.85% and assumed annual inflation of 1.5% for the part of the licence term still in the future.

- sum the daily values over the period of the delayed access to the licence to give a total SAF refund for that Lot.

2.98 To establish the total SAF refund due to the Bidder, repeat the process above for all applicable delayed Lots and sum the resulting amounts.

ComReg's assessment and final position

2.99 To date, ComReg has used a linear pro-rata approach for calculating refunds arising from delayed commencement (e.g. the 2012 MBSA and the 2017 3.6 GHz award) and/or where a licence is granted for a portion of a year (e.g. FWALA or satellite licensing²⁷).

2.100 ComReg agrees with DotEcon that there is a high degree of uncertainty associated with the timing of benefits that licensees obtain for the use of the radio spectrum. Indeed, ComReg notes the relatively modest rollout of 3.6 GHz rights, including those of Three, in the early stages of those licenses with the period immediately following assignment unlikely to have contributed significantly to the overall value of the spectrum. ComReg agrees with DotEcon that there is no clear best method for calculating refunds and considerations such as simplicity, predictability, convenience and administrative efficiency would also apply.

2.101 Notwithstanding, rights of use in this award are likely to have a higher relative value earlier in the Licence term compared to the 3.6 GHz spectrum, and there is merit in considering a refund methodology that reflects same. For example, there is an immediate and concrete demand for spectrum rights in these bands as demonstrated by ComReg in Document 20/122 (e.g. see Paragraph 10 -13 and Spectrum for Award RIA).

2.102 Therefore, ComReg is of the view that, in this instance²⁸, it would be appropriate to use a discounted cash flow approach (using the methodology described by DotEcon above) in order to calculate any refunds of the SAF that may arise due to delayed commencement of Lots in MBSA2. Furthermore, such an approach would also be consistent with the approach used to set minimum prices as described in Section 7.9 of Document 19/59R, as further detailed in Document 19/59b (Benchmarking and minimum prices a report from DotEcon Ltd).

2.103 For the avoidance of doubt and noting that Three's concerns refer only to investments made in relation to a SAF, ComReg is of the view that it remains appropriate to use a linear approach in respect of any refunds due on the first SUF because such payments reflect annual usage rather than usage over the

²⁷ See Section 8.4 - <https://www.comreg.ie/media/2016/04/Satellite-ComReg0064R4-Guidelines.pdf>

²⁸ ComReg agrees with DotEcon that ComReg should retain its discretion and flexibility to apply the most appropriate methodology for future awards on the basis of the specific circumstances at the time. For example, the methodology proposed here might be disproportionately complex in other circumstances and a simpler approach could be more suitable.

duration of the licence. Finally, this does not affect how any refunds are currently calculated in respect of the 3.6 GHz award or the pro-rata calculation in respect of existing administratively set prices (e.g. under the satellite/FWALA licensing frameworks).

2.104 Section 2.3.7 of the IM has been updated to account for this change.

2.6 Legal Terms and Conditions

ComReg's position in Document 20/32

2.105 In Chapter 5 of Document 20/32, ComReg set out the proposed legal terms and conditions for the Award Process.

Summary of views of respondents

2.106 Eir submits that:

- Interested Parties must be able to rely on the contents of the IM and be confident that there will not be sudden unexpected changes;
- the draft IM is inadequate, in particular Chapter 5; and
- Chapter 5 is drafted so broadly that it renders it meaningless and is therefore incapable of being relied upon by Interested Parties.

2.107 Eir also specifically mentions and comments on the following paragraphs of Chapter 5 of Document 20/32:

- Paragraph 5.27 which reserves for ComReg the right “*not to proceed with any part of the Award Process described in this Information Memorandum*” and Paragraph 5.31 which, in Eir’s words, seeks to reserve powers for ComReg to make any changes as it sees fit with only an obligation to inform Interested Parties of the amendments or modifications. In that regard, Eir requests assurances from ComReg that any material changes will be subject to a proper consultation exercise with Interested Parties afforded the opportunity to provide views and have their views fairly considered;
- Paragraph 5.13 which states that “*No legal obligations on the part of ComReg to grant any Licences will arise unless and until the granting and commencement of a Licence or Licences by ComReg following the completion of the Award Process*”. In that regard, Eir submits that this is unacceptably broad and contradicts paragraph 5.17 which, in Eir’s words, clearly establishes that an agreement is formed between Applicants and ComReg. Eir also suggests that ComReg is seeking to set aside its legal

obligations under the IM and submits that it is wrong for it to do so;

- Paragraph 5.25 which states that “*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*”. Eir submits that this requirement should be extended to ComReg and its agents such that ComReg should promptly notify Interested Parties of same. Further Eir submits that there should be a clear obligation on ComReg to properly consult on the manner on which an error or omission would be addressed irrespective of who discovers it.

ComReg’s assessment and final position

- 2.108 ComReg does not accept Eir’s view that the draft IM, and Chapter 5 in particular, is inadequate.
- 2.109 First, ComReg observes that Chapter 5 of Document 20/32, including the provisions referred to above, is substantially the same as that used in three previous spectrum awards in which Eir has participated, namely the 2012 MBSA, the 2017 3.6 GHz award and the 2018 26 GHz award. In no case were the information memoranda, or Chapter 5 of same in particular, found to be deficient in terms of ensuring a successful award in accordance with ComReg’s statutory functions, objectives and duties. Furthermore, ComReg is not aware of any information or developments since then or of any peculiarities of the MBSA2 that would require or merit a material change to the legal terms and conditions adopted for the previous awards.
- 2.110 Second, ComReg made clear in paragraph 1.13 of Document 20/32 that “[f]or the avoidance of doubt, references throughout this draft IM to ComReg exercising its discretion mean ComReg acting reasonably and in accordance with its statutory functions, objectives and duties”. In addition, at the beginning of paragraph 5.27 of Document 20/32, ComReg stated that it “*will act at all times to a standard expected of a public body and in line with its statutory functions, objectives and duties*”. This point is also reiterated in other places in Chapter 5 of Document 20/32, i.e. at paragraphs 5.8 and 5.11. This ensures, for example, that if it is appropriate for ComReg, in accordance with its statutory functions, objectives and duties, to notify stakeholders of an error or omission or to consult with stakeholders in relation to a change, error or omission, it would do so.
- 2.111 In relation to the disclaimer at paragraph 5.13, as Eir points out, an agreement will have been formed between ComReg and the Applicant. This disclaimer is therefore appropriate to avoid ComReg contractually fettering its regulatory discretion to act in accordance with its statutory functions, objectives and duties,

whereas the rights of a Winning Bidder are protected in that regard by the requirement for ComReg to act in accordance with its statutory functions, objectives and duties. The same point clearly applies in relation to Eir's comment on paragraph 5.27.

2.112 In light of the above, ComReg does not consider that any amendments to the wording of Chapter 5 are required to address Eir's concerns.

2.7 Clarifications

2.7.1 Exclusion of Bids and Bidders

ComReg's View in Document 20/32

2.113 Paragraphs 3.100 – 3.108 of Document 20/32 describe sanctions which may apply where there has been an infringement of Auction or Award Rules. This includes the possibility that an Applicant/Bidder may be excluded from the Award Process and/or forfeit their Deposit.

2.114 Paragraph 4.107 of Document 20/32 also states:

"In the event that a Bidder fails to meet the Deposit Call requirement, ComReg may, among other things, restrict its ability to make further Bids and/or declare some or all of its Bids already submitted as being incapable of becoming Winning Bids".

2.115 Whereas paragraph 4.154 of Document 20/32 states:

"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 (described below) excluding some or all Bids submitted by any such Bidder during the Award Process."

Summary of views of respondents

2.116 In relation to Paragraph 4.154, Eir submits that it cannot see any circumstance in which it would be appropriate for any Bid made by a Bidder that has been excluded from the Award Process to be included in the calculation of the Winning Bids and prices to be paid by the remaining Bidders. Eir suggests that ComReg removes the reference to "some" from the final sentence of paragraph 4.154 or explains when and why this option might be needed.

2.117 Three refers to paragraphs 3.100 – 3.108 and 4.107 and submits the following:

- ComReg has retained significant discretion in relation to the course of action it might take in these circumstances, including keeping Bids made up to that point or voiding them.
- It agrees that certain circumstances may arise where a Bidder should be restricted or excluded.
- Depending on the circumstances, it might be necessary to re-run part of the process to remove Bids previously submitted by the excluded Bidder. Three notes that this could have a significant bearing on the outcome of the auction and is particularly important in the Main Stage where there is a lot at stake for all Bidders.

2.118 Three submits that the current process, as set out in the above referenced paragraphs, is lacking in transparency as it does not specify whether ComReg will inform the remaining Bidders if a Bidder has been excluded. Three submits that in order to have confidence in the integrity of the Award Process, remaining Bidders, at a minimum, should be informed when a Bidder is excluded and whether or not any Bids made up to that point remain valid or have been removed from the Winner and Price Determination. To not do so would, in Three's opinion, be wholly inappropriate, particularly if the Bids already submitted by the excluded Bidder cease to become Valid Bids.

Summary of DotEcon's views

- 2.119 In relation to Three's concern, DotEcon notes that there are highly varied circumstances that could lead to a Bidder being excluded and the draft IM rightly maintains discretion for ComReg over whether such an exclusion would be disclosed.
- 2.120 In that regard, DotEcon does not see any good reason to make the changes that Three has suggested because ComReg's approach provides it with the flexibility required to make an informed decision considering the specifics of the situation in light of the objective of ensuring the overall efficiency of award outcomes.
- 2.121 The award rules aim to avoid Bidders knowing about other participants, as far as possible. Therefore, there would need to be clear benefit in terms of overall efficiency of the award outcome from disclosing that a Bidder had been excluded. The draft IM retains discretion for ComReg to release information about Bidder exclusions if the circumstances justified it.
- 2.122 In relation to Eir's view that it would not be appropriate for any Bid made by a Bidder that has been excluded from the Award Process to be included in the calculation of the Winning Bids, DotEcon agrees that the phrasing of these rules in the draft IM is somewhat unclear, and it could be interpreted in a way that suggests ComReg could exclude a bidder but then allow some (or all) of its bids

to remain valid.

2.123 Therefore, DotEcon recommends that ComReg review the relevant paragraph and adjust it accordingly for the final IM to make it clearer that an excluded Bidder's Bids would not influence the determination of winners or prices. However, DotEcon also strongly recommends that ComReg retains discretion to exclude some but not all Bids made by a Bidder that is not excluded in order to provide for appropriate ((e.g. proportionate) action to be taken (noting, for the avoidance of doubt, that this option would allow for all of the Bidder's Bids to remain valid).

ComReg's assessment and final position

2.124 In relation to Eir's concern about the use of Bids made by excluded Bidders, ComReg acknowledges that the phrasing of the rules in Paragraph 4.154 is unnecessarily broad and raises the possibility of retaining an excluded Bidder's Bids for Winner and Price Determination when no such possibility should arise. This was not the intention and ComReg agrees that if a Bidder has been fully excluded from the Award, there should be no circumstances which would allow the Bids of that excluded Bidder to be included in the Winner and Price Determination process, therefore Para 4.154 now reads as follows in the final IM:

"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 the Bidder(s) from the Award Process and re-run the Winner and Price Determination algorithm (described below) voiding all Bids submitted during the Award Process by that excluded Bidder(s);*
- *re-run the Winner and Price Determination algorithm voiding some Bids submitted during the Award Process by that Bidder(s), without excluding the Bidder(s) from the Award Process."*

2.125 Further, and for the avoidance of doubt, in the event of a breach of the Auction Rules, which does not result in the exclusion of a Bidder, ComReg will retain discretion to void some but not all Bids made by that Bidder.

2.126 In relation to Three's concern that there is ambiguity over whether ComReg would inform other Bidders if a Bidder is excluded, ComReg agrees with DotEcon that committing to a position one way or the other in advance of the Award would not be appropriate, and that ComReg needs to make an informed decision at the time taking into account the specifics of the situation.

2.127 ComReg therefore considers it appropriate to retain its discretion on whether or

not to provide information to Bidders about the exclusion of another Bidder. Indeed, such an approach is a logical extension of ComReg's policy not to inform Bidders about the participation of other Bidders at any point during the Award Process. That said, depending on the nature of the circumstances surrounding any exclusion of a Bidder and the timing of same, and in order to protect the overall efficiency and integrity of the Award, ComReg does not rule out the possibility that such information may indeed be provided to other Bidders. This approach would be consistent with previous information memoranda for award processes in which Three has participated.

2.128 In light of the above, ComReg's final position is to retain its discretion over what information is released on exclusion of a Bidder from the Award Process.

2.7.2 Licence Duration and Licence Termination

ComReg's View in Document 20/32

2.129 Paragraphs 3.11 – 3.12 and Tables 16, 17, A.3 and A.4 identified the Licence expiry dates for each Time Slice and Lot Category, respectively.

Summary of views of respondents

2.130 Eir notes an inconsistency between the Licence expiry dates for Lots B2.6F/2 and B2.6T/2 between paragraph 3.12 and tables 17 and A3.4. In its submission Three also refers to this. Both respondents request clarification as to whether the Licence expiry is 30/11/2040 or 30/11/2035 for these Lot Categories.

ComReg's Assessment and Final Position

2.131 ComReg confirms that this is a typographical error and that the Licence expiry date in the draft IM for these Lots should have been 30/11/2040.

2.132 In relation to the commencement and expiry dates for Lots in the Final IM, given the updated circumstances for the MBSA2 as discussed in Section 2.2 above these have been revised further as detailed in the Table below.

Table 3: Commencement and expiry dates for spectrum rights of use in the 700 MHz Duplex, 2.1 GHz Band, 2.3 GHz Band and 2.6 GHz Bands

Time Slice	Frequency Band	Commencement date	Expiry date
N/A	700 MHz Duplex ²⁹	14 February 2022 ³⁰	13 February 2042
Time Slice 1	2.1 GHz Band	16 October 2022	11 March 2027
	2.3 GHz Band 2.6 GHz Band	14 February 2022 ³¹	
Time Slice 2	2.1 GHz Band 2.3 GHz Band 2.6 GHz Band	12 March 2027	13 February 2042

2.7.3 Rounding of Base Prices

ComReg’s View in Document 20/32

2.133 Paragraph 4.167 of the draft IM states:

“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 in multiples of EUR 1000 they are rounded up to an even multiple of EUR 1000.”

Views of respondents

2.134 Eir submits that paragraph 4.167 is unclear as it could be interpreted as meaning that the Base Price needs to be a round multiple of EUR 2000. Eir assumes it is intended to mean the next highest multiple of EUR 1000 and requests that ComReg clarify this matter.

Summary of DotEcon’s views

2.135 DotEcon acknowledges that the current phrasing is unclear and confirms that Eir’s assumption is correct in that base prices should be rounded up to the nearest (i.e. the next highest) multiple of EUR 1,000. DotEcon recommends that the final IM should be adjusted accordingly to remove the ambiguity.

²⁹ Spectrum rights of use in the 700 MHz Duplex are being made available in one a single temporal period.

³⁰ Or other such date or dates as may be specified by ComReg.

³¹ Or other such date or dates as may be specified by ComReg.

ComReg’s assessment and final position

2.136 ComReg agrees with Eir that the current phrasing is a little unclear and confirms that Eir’s understanding is correct in that any rounding that would occur would mean the next highest multiple of EUR 1000.

2.137 Therefore, “*an even*” has been deleted from the referenced paragraph and is replaced by “*the nearest*”.

2.138 This change is reflected in paragraph 4.167 of the final IM.

2.7.4 Scenario where there is a restriction on the submission of Bids for 2.6 GHz Band TDD Edge Lots

ComReg’s View in Document 20/32

2.139 Paragraph 3.167 of Document 20/32 details the restrictions on the submission of certain Primary Bids and Supplementary Bids and states:

“In the 2.6 GHz Band, as the fixed frequency A-Lots are best utilised by Bidders also obtaining 2.6 GHz TDD Generic Frequency Lots, a Bidder will be prevented from submitting a Bid for a Package of Lots which includes the 2.6 GHz TDD Fixed Frequency Lot (Lower) and the 2.6 GHz TDD Fixed Frequency Lot (Upper) in a given Time Slice unless the Bidder also places a [B]id for all Lots in the 2.6 GHz TDD Band in the same Time Slice”.

Views of respondents

2.140 Three submits that its understanding of this text is that this restriction only applies where a Bidder submits a Bid for both the upper and lower fixed frequency Lots in the 2.6 GHz band. Three requests that ComReg clarifies whether this understanding is correct.

Summary of DotEcon’s views

2.141 DotEcon notes that Three’s understanding appears to be correct.

2.142 However, for clarity and to eliminate any scope for misunderstanding, DotEcon also highlights that the constraint applies if a Bidder submits a Bid for both the upper and lower fixed frequency Lots in the same Time Slice. Therefore, using the Lot Category names set out in the IM:

- a Bidder cannot Bid for both the A2.6TL/1 Lot and the A2.6TU/1 Lot unless it also includes all eight of the B2.6T/1 Lots in the same Bid; and
- a Bidder cannot bid for both the A2.6TL/2 Lot and the A2.6TU/2 Lot unless it also includes all eight of the B2.6T/2 Lots in the same Bid.

- 2.143 If a Bidder bids for both the A2.6TL/1 and the A2.6TU/2 Lots (i.e. 2.6 GHz TDD fixed frequency Lots at opposite ends of the band, but in different Time Slices) and no other 2.6 GHz TDD fixed frequency Lots, then there are no restrictions on the number of B2.6T/1 or B2.6T/2 Lots that can, or must, also be included in the Bid.

ComReg's Assessment and Final Position

- 2.144 ComReg agrees with DotEcon and notes that Three's understanding is correct.
- 2.145 The restrictions referred to by DotEcon above are necessary in order to simplify the award and best ensure the use of that spectrum on a contiguous basis noting that the restrictions have been limited to the assignment of non-contiguous rights of use in the 2.6 GHz TDD Band.
- 2.146 Absent such a restriction, a Bidder could be assigned the 2.6 GHz TDD fixed frequency lots (A2.6TL and A2.6TU) at opposite ends of the band in a particular Time Slice and there would be a fragmentation in its 2.6 TDD assignment if it was also assigned some, but not all eight, of the frequency generic lots (B2.6T) in the 2.6 GHz TDD Band. In that regard, ComReg has not received any further information that would cause it to change its approach.
- 2.147 ComReg's final position is to leave this approach unchanged from that of the draft IM.

2.7.5 Relative Caps

ComReg's View in Document 20/32

- 2.148 Annex 11 of Document 20/32 (Relative Caps in the Primary Bid Rounds) provided further details on the structure of the Relative Caps that would be created during the Primary Bid Rounds, with a focus on the consequences of submitting Eligibility-reducing Relaxed Primary Bids.
- 2.149 In Document 20/122, and in order to provide clarity to Eir and other Interested Parties, ComReg noted that the rules described in Annex 11 of Document 20/32 (i.e. the structure of the Relative Caps that are created during the Primary Bid Rounds) are not new and simply reflect those used in the 2012 MBSA. Annex 11 of Document 20/32 provides a detailed explanation of same in order to provide clarity to Bidders about how these rules would operate in practice.

Summary of views of respondents

- 2.150 Eir submits that DotEcon appears to have identified a lacuna in the rules used in the 2012 MBSA regarding the application of constraints arising out of Eligibility reducing Bids such that it created a loop of Relative Caps.

2.151 Eir notes that DotEcon has provided no analysis of the consequences of this new rule as laid out in the draft IM, although there is a detailed explanation of how the rule would work:

- there is no analysis of the consequences of this new rule (for example will the new constraint be tighter or looser than the constraint that it replaces); and
- there is no consideration or evaluation of other options for dealing with this lacuna.

2.152 Eir submits that ComReg should consider the option of identifying Constraining Rounds separately for each Time Slice such that a Bid that reduces Eligibility in Time Slice 1, but not in Time Slice 2, creates a constraint on future Bids in respect of Time Slice 1 but not Time Slice 2. Eir suggests that this would avoid the creation of loops of Relative Caps.

2.153 If not, then Eir requests that this analysis be undertaken with a view to reducing the complexity of the Award Process. If the analysis has already been undertaken, Eir requests that it be shared with Interested Parties so they may consider whether it is appropriate to reject this option.

Summary of DotEcon's views

2.154 DotEcon notes that the Activity Rules and methodology for calculating (and potentially replacing) Relative Caps proposed in the draft IM are exactly the same as those that were used for the 2012 MBSA. ComReg issued an amendment to the 2012 MBSA auction rules before the start of the 2012 auction and all Bidders including Eir were notified at the time. The amended rules were correctly implemented for that award and the same approach is proposed here for MBSA2, albeit with a simplified exposition of the relevant rules. Therefore, DotEcon notes that there may be a misunderstanding and Eir may not have appreciated that there was some difference between the rules as originally proposed for the 2012 MBSA and those that were eventually used.

2.155 DotEcon also notes that it is incorrect to say that no analysis of alternative ways to address the situation has been carried out. In particular:

- This issue was considered in depth during the 2012 MBSA resulting in activity rules that worked successfully for that award.
- The rules in relation to activity and Relative Caps have been carefully considered again when reviewing the use of the rules in preparation for MBSA2.
- The draft IM provided stakeholders with a detailed discussion on how

the Activity Rules work and the reasoning for same.

- No respondent (including Eir) has provided any material to suggest that there is a problem with the Activity Rules (other than the suggestion that it is complex which, in the main, arises due to the complex mix of Lots being offered).

2.156 Regarding Eir's comment on the question of whether a relative cap that replaces another would be tighter or looser than the original cap, DotEcon notes that the notion of a "tighter" or "looser" relative cap is not particularly meaningful, as one constraint is replaced by an entirely different constraint (rather than a particular constraint being tightened or relaxed). Furthermore, the ultimate impact of a cap being replaced on a Bidder's Supplementary Bids would depend on the supplementary bid amounts that the Bidder submits for the relevant constraining packages, so again the notion of one cap being tighter or looser than another is not meaningful in this context. Moreover, so long as a Bidder is bidding in line with valuation, the Relative Caps should not cause any concern even if an existing Relative Cap is replaced.

2.157 In relation to Eir's alternative approach, DotEcon does not recommend its use for several reasons, including that:

- during the clock Rounds, creating and applying constraints independently for each Time Slice could prevent Bidders from bidding in line with valuation because it is the relative prices for different Packages of Lots that is important for Bidders to evaluate and it is likely that relative price changes in one Time Slice can affect what Bidders want to bid for in the other Time Slice;
- in the Supplementary Bids Round it is not clear how the Relative Caps would be applied. In particular, it is not clear how a Supplementary Bid would be 'split' between the two Time Slices to evaluate whether Bids are consistent with both Relative Caps (i.e. where a Package had a Relative Cap applying from an earlier clock Round in one Time Slice, but not in the other Time Slice); and
- if the Bid Amount for a Constraining Package is increased in the Supplementary Bids Round, there is no clear way of determining how that should affect the Relative caps on other relevant packages without violating one of the two Relative Caps proposed by Eir. (i.e. the increase would be for the Package and not individual Lots and there is no reasonable way of knowing how much of that increase is attributable to the Lots in each Time Slice).

ComReg’s assessment and final position

- 2.158 ComReg observes that the Activity Rules and methodology for calculating Relative Caps are the same as those that were used for the 2012 MBSA.
- 2.159 During the 2012 MBSA, a Bidder identified the possibility that the Relative Caps arising from the submission of a Relaxed Primary Bid could result in a circular reference that prevented the chain of Relative Caps constraining the bidding activity as intended by the then 2012 MBSA auction rules (i.e. the Activity Rules would be too permissive). Although this possibility was restricted to very specific cases, it was deemed important to modify the 2012 MBSA Activity Rules prior to the auction to prevent this as it could not be ruled out that this feature might distort bidding incentives and thus compromise the efficiency of the auction outcome.
- 2.160 The 2012 MBSA rules were amended prior to the auction and Bidders were made aware of same. In that regard, each Bidder (including Meteor Mobile Communications³²) received a copy of a DotEcon report entitled “*Eligibility-reducing relaxed primary bids in ComReg’s multiband auction*” which explained in detail how the revised rules would operate including proposed amendments to Chapter 4 and Annex 1 of the 2012 MBSA IM (ComReg 12/52). The rules in respect of Relative Caps as set out in this communication with Bidders are the same as those proposed in the draft IM.
- 2.161 Therefore, ComReg reiterates its views that the rules on operation of the Relative Caps in the Proposed Award are not new and simply reflect those ultimately used in the 2012 MBSA. Notwithstanding, for completeness, ComReg addresses Eir’s alternative approach below.
- 2.162 In relation to Eir’s alternative approach, ComReg recognises the importance of encouraging Bidders to bid straightforwardly³³ and in line with valuation during the award. An auction is more likely to generate an efficient outcome if the Bids submitted are based on truthful valuations for different spectrum Packages (i.e. combination of Lots). In that regard, ComReg agrees with DotEcon that Eir’s alternative approach is not viable. Such an approach would not be consistent with ComReg’s view that relaxed Activity Rules should facilitate switching across categories when the relative prices between Packages of interest change, and if doing so is consistent with the preferences revealed in earlier Rounds where the

³² See Document 13/29c – p40.

[MBSA 2012: Publication of Correspondence and Other Material | Commission for Communications Regulation \(comreg.ie\)](#)

³³ By ‘straightforward’ we mean that in each Primary Bid Round the Bidder bids on its most preferred Package at prevailing Round Prices (i.e. the Package that provides greatest surplus, defined as the difference between the Bidder’s valuation for the Package and the price of the Package at current Round Prices).

Bidder contracted demand.

2.163 Further, because there are strong complementarities across Time Slices and Bidders are likely to have requirements for spectrum across both Times Slices, such an approach would be particularly harmful because relative price changes in one Time Slice can affect what Bidders want to bid for in the other Time Slice.

2.164 ComReg also agrees with DotEcon that such an approach would be difficult to implement in the Supplementary Bids Round, in particular in relation to:

- how, for a given Package, two independent caps (one for each Time Slice) created in the Primary Bid Rounds would then be applied to a single Supplementary Bid amount when there is no way of determining the appropriate split of the Bid Amount across Time Slices; and
- how an increase in the Supplementary Bid amount for a Constraining Package would then affect the corresponding Relative Cap on the Supplementary Bid for other relevant Packages.

2.165 In light of the above, ComReg’s final position is that no change is required in relation to its approach to setting Activity Rules and/or the methodology for calculating (and potentially replacing) Relative Caps.

2.7.6 Bidder Association

ComReg’ View in Document 20/32

2.166 Section 3.3.6 of the draft IM outlines rules and procedures around Confidential Information and Applicant / Bidder behaviour.

2.167 Paragraph 3.78 states:

“It is possible that, at the Application Date, an Applicant is unaware that it has a common Insider with another Applicant. If ComReg becomes aware that two or more Applicants/Bidders have a common Insider, it shall:

- *notify the Applicants/Bidders concerned, indicating a deadline for them to apply for exemption from the rules on common Insiders (see further below); or*
- *require the relationship of one or more of the Applicants/Bidders with the common Insider to terminate insofar as the Award Process is concerned”.*

2.168 Separately, paragraph 3.127 states that 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 or Applicants who withdraw an Application”.

Summary of views of respondents

- 2.169 Three submits that there is an inconsistency between paragraphs 3.127 and 3.78.
- 2.170 In particular, Three submits that, in following the process identified in paragraph 3.78, ComReg will have inadvertently provided information to the parties involved about each other’s participation and so these parties would have information not available to others. Further, Three notes that if a common Insider is found after the start of the Auction then it is possible that both Bidders may be excluded whereas if the common Insider was found prior to the Auction then the two parties may have time to resolve the issue.
- 2.171 To remedy the above, Three suggests that ComReg publish the identity of all Applicants at the Qualification Stage so that Bidders have some ability to identify potential Insiders and resolve them in a timely manner. Three also indicates that this is the approach adopted in other Member States and suggests that ComReg could still keep details of Initial Bids and Initial Eligibility confidential.

Summary of DotEcon’s views

- 2.172 DotEcon’s understanding of the intention behind the common Insider rules is to prevent situations where an Insider had access to Confidential Information relating specifically to two or more Bidders’ participation in the Award. DotEcon would expect Bidders to ensure that all of its Insiders were fully aware of the Award Rules and to have appropriate measures in place to ensure, in advance of the Award, that there would be no conflict with other participants.
- 2.173 DotEcon does not consider it to be an onerous task for Applicants to identify relevant Insiders, and that it is largely in the power of Applicants/Bidders to avoid situations where they would get picked up under common Insider rules after submitting an Application to partake in the Award.
- 2.174 DotEcon suggests that a potential Bidder can require its Insiders to form an exclusive relationship and agree not to engage with other Bidders. DotEcon notes that it is unlikely that a prudent Bidder would share sensitive commercial information with an Insider without such protection in place. DotEcon therefore believes that the risk of ComReg identifying a common Insider at the Application Stage to be very low, and that this situation has not occurred in any previous spectrum award processes conducted by ComReg.
- 2.175 With regard to disclosing the number and identity of other Applicants/Bidders, DotEcon states that there are good reasons for not doing so, in particular to

mitigate strategic Bidding. DotEcon does not consider the risk of common Insiders to be sufficient to deviate away from the current policy of not revealing identities of other Applicants/Bidders.

2.176 Regarding Three's suggestion that informational asymmetry could arise, DotEcon does not think that this will arise in the first place. DotEcon states that it should be possible to ensure conflicts due to common Insiders can be resolved without the parties concerned being informed of either parties identity, or the number of Applicants/Bidders that share this common Insider. All an Applicant need know is that it has a common Insider with at least one other party and that this conflict must be resolved. DotEcon suggests that in some cases:

- ComReg could communicate directly with the common Insider to ensure information '*siloing*' and so this would not require any communication between the Applicants/Bidders involved; and
- ComReg does not need to inform the relevant parties of how the conflict was resolved, only that it is no longer a problem.

2.177 DotEcon acknowledges that in practice, the only information that would be made available to the parties involved is that there is at least one other Applicant in the Award. However, this information would not necessarily be an advantage as in the event that an auction is required all qualified Bidders would know that there is at least one other Bidder.

2.178 Finally, DotEcon considers a situation where there could be a problematic informational asymmetry arising from the common Insider resolution process, but notes that there are alternative approaches to full disclosure of Applicant identities such as ComReg releasing information about the structure and resolution of any conflicts, but not the identities, of the parties involved.

2.179 However, for the reasons set out above, DotEcon considers this unnecessary.

2.180 DotEcon does not therefore agree with Three's suggestions, but recommends that ComReg review the rules on common Insiders and adjust them accordingly so that there is no ambiguity on the reading of same.

ComReg's Assessment and Final Position

2.181 ComReg does not agree that there is an inconsistency in the rules regarding Bidder association and non-disclosure of participants.

2.182 ComReg agrees with the views of DotEcon as summarised above. Contrary to Three's suggestion, the IM does not state that ComReg will provide information to the parties involved about each other's participation. For the avoidance of doubt, if ComReg identifies that a common Insider exists between two Bidders,

it will inform each Bidder of that fact but will not disclose the identity of the other Bidder. It will be for each Bidder to communicate this information to the Insider and to resolve this issue in cooperation with the Insider in accordance with the Award Rules, creating an information 'silo' as suggested by DotEcon. The Insider will obviously play an important role in this regard, being the only party with full knowledge of the situation and, in accordance with the IM, ComReg may also deem it appropriate to engage with the Insider directly in order to resolve the situation.

2.183 It is important to note that, in seeking to resolve such a conflict, it will be incumbent upon each Bidder and the Insider to ensure compliance with the rules on Confidential Information (which includes knowledge of an entity's participation in the Award, per paragraph 3.100 of the IM) set out in Section 3.3.6 of the IM. So, for example, in such a situation it would not be appropriate for a Bidder to seek to reveal the identity of the other Bidder via the Insider or otherwise.

2.184 In relation to Three's comment regarding discovering the conflict after the auction starts, ComReg would remind Interested Parties that:

- before submitting an Application, the Interested Party must take all reasonable measures to identify its Connected Persons, Associated Bidders and Insiders (paragraph 3.86 of the IM). In this regard ComReg notes DotEcon's observation that it would be unlikely that a diligent Applicant would share commercial information with an Insider where confidentiality and exclusivity agreements are not in place;
- as part of its Application, each Applicant is required to confirm that it has procured that Insiders will comply, to the extent appropriate, with the Award Rules (including as to common Insiders) (Paragraph 10 of Applicant Declaration); and
- if at any point it becomes apparent that an Insider has failed to comply with the Award Rules, the Applicant or Bidder, as appropriate, will be deemed responsible for that breach (paragraph 3.91 of the IM).

2.185 Accordingly, an undisclosed common Insider seems highly unlikely to arise in practice and for it to do so would require significant oversight by the Insider and, in turn, by the Applicants/Bidders involved.

2.186 In light of the above, ComReg does not propose to deviate from the fundamental principle that it will not inform Bidders about the identity of other Bidders. However, and noting DotEcon's advice, ComReg has updated the text in Annex 8 to make clear the points outlined above.

Chapter 3

3 Other updates

3.1 Introduction

3.1 This Chapter sets out updates and changes to the text of Document 20/32 not already discussed in Chapter 2 of this document. These updates and changes relate to:

- Questions and Answers;
- Updated DotEcon Benchmarking Report;
- Updated Annex on Exposure Prices;
- Updated technical conditions;
- Compatibility updates;
- 2.1 GHz Liberalisation fee methodology; and
- Assignment Stage - Winner determination and Assignment Options.

3.2 For the avoidance of doubt, this Chapter does not discuss changes made to the text of Document 20/32 to correct typographical errors or to improve the clarity of text generally.

3.1.1 Submission of hardcopy questions in Questions and Answers

3.3 Due to certain practical implications of staff working remotely given COVID-19 restrictions, ComReg offices are not currently staffed during usual business hours. As a result, for the phase 1 questions and answer period of this Award Process, ComReg staff will only be available to accept hardcopy questions between the hours of 11:00 – 13:00 and 14:30 – 16:30 (Irish time) on Monday 10 May – Friday 14 May 2021 inclusive. This is to ensure that an Interested Party's questions can be received and helps to maintain the integrity of the Award Process. The remaining elements of the questions and answers phase remain consistent to that used in previous awards, i.e. only accepting hardcopy questions and that these questions need to be submitted in an anonymous fashion.

3.4 As the Application Stage is now in two phases, and to assist Applicants in preparing for submission of their Phase 2 Application Documentation, ComReg will facilitate a second questions and answers period (Phase 2 Questions) for

Applicants only. Phase 2 Questions may be submitted via the secure file transfer portal only. The deadline for submitting Phase 2 Questions is 16:30 hours (Irish time) on Friday 16 July 2021. ComReg will set out all Phase 2 Questions together with their associated responses on an anonymous basis and distribute same to all Applicants.

- 3.5 ComReg reserves the right, where appropriate, to amend any previous responses to Phase 2 Questions made by it up until **Friday 30 July 2021**, such that responses made before this date are for general guidance only and should not be considered as final, or be relied upon, until **Friday 30 July 2021**.
- 3.6 Full details on the submission of questions is detailed in Section 3.3.1 of the IM.

3.1.2 Updated DotEcon Benchmarking Report

- 3.7 Since the draft IM was published, DotEcon has updated its fees benchmarking report (see DotEcon's Benchmarking Update Document 21/39b which is also published alongside this Response to Consultation). This document provides an update to the results of the fee benchmarking exercise conducted in June 2019 (Document 19/59b). The revised benchmarking estimates consider awards that have taken place since the last update, as well as updates to the economic indicators data (Purchasing Power Parity, Consumer Price Index and population data) now available which are used to standardise the benchmark data. Further, as previously noted in Section 5.7.3 of Document 20/122 the benchmarks have also been updated to account for the 20-year licence duration and an updated mobile WACC of 5.85%.
- 3.8 In the benchmarking update, DotEcon suggests that there may be scope for increasing the minimum prices for the 2.6 GHz Band relative to those proposed in Document 20/32. However, DotEcon also notes that the difference between the benchmarks and the current minimum prices (as set out in Document 20/32) is not sufficient to suggest that there would be any problem or risk from not increasing them, and therefore DotEcon does not recommend making any changes in that regard.
- 3.9 DotEcon is of the view that for all bands included in the award, the updated benchmarks are sufficiently consistent with the benchmarking output in 2019 and the minimum prices proposed in Document 20/122³⁴ (in terms of where they lie in relation to both the geometric and arithmetic means for the relevant subsamples) to not justify any adjustments to the Minimum Prices (in terms of the total amounts for the maximum 20-year licence terms. In that regard, DotEcon is of the view that the minimum prices , as set out in Document 20/122,

³⁴ In Document 20/122, ComReg set out indicative Minimum Prices that were based on those specified in Document 20/32, but updated to account for the revised mobile WACC and its decision to reduce the Minimum Prices for the 2.3 GHz and 2.6 GHz TDD fixed frequency Lots.

should be not be changed save for the required adjustments to take account of changes to the proposed commencement date of the Licences and the relative durations of Time Slice 1 and Time Slice 2³⁵.

- 3.10 ComReg agrees with the views of DotEcon and sees no basis for amending the minimum prices as set out in the MBSA2 Decision (Table 3 Document 20/122) save for changes surrounding the proposed start date of the Licences. These minimum prices are set out in Table 15 and 16 of the IM and reflect the revised commencement date of Time Slice 1 Licences and expiry date of Time Slice 2 Licences. ComReg continues to hold the view that these minimum prices are appropriate, in being high enough to discourage any potential speculative bidding behaviour and tacit collusion, yet low enough to avoid choking off demand.

3.1.3 Updated Annex on Exposure Prices

- 3.11 In Document 20/122, ComReg decided that it would provide additional helpful information to bidders during the course of the auction clock rounds to help bidders assess the financial exposure resulting from their bids. This new feature, known as Exposure Pricing, was developed following feedback from respondents and will be provided as part of the information policy for the award.
- 3.12 A detailed description of the information to be made available to bidders and how it will be calculated is provided in Chapter and Annex 10 of the final IM. This includes a rigorous mathematical definition of the Exposure Prices.
- 3.13 Readers are referred to Annex 10 and DotEcon’s discussion of same in Section 2.4 of Document 21/39a.

3.1.4 Updated technical conditions

- 3.14 As set out in Section 5.2 and Annex 13 of Document 20/122, ComReg has updated the Technical conditions for the award to align with the amended EC decisions for the 2.1 GHz and 2.6 GHz Bands.
- 3.15 ComReg notes that the technical conditions as set out in Section 2.3.5 of the IM and the draft MBSA2 Licence Regulations have been updated to reflect the amended European Commission (EC) decisions³⁶.

3.2 Compatibility Updates – 2.3 and 2.6 GHz bands

- 3.16 This section sets out updated information on Eir’s RurTel network and the IAA’s primary aeronautical radars in order to provide updated information on the

³⁵ i.e. upon publication of the IM. An indicative start date for the Auction is as set out in Table 17 of the IM.

³⁶ These are EC Decision 2020/667 and EC Decision 2020/636.

compatibility considerations for the 2.3 GHz and 2.6 GHz bands.

3.2.1 Eir RurTel Update

3.17 Since Document 20/122 was published ComReg observes that:

- Eir's RurTel licences for Galway ceased on 31 January 2021; and
- Eir identified in correspondence with ComReg that there are now only 51 active customers remaining on the Donegal RurTel Network.

3.18 In this regard, ComReg observes that the co-ordination area for the Donegal RurTel Network as specified in Document 20/122 remains appropriate. ComReg continues to engage with Eir regarding the migration of its remaining 51 customers in Donegal with the aim of switching off and decommissioning the network as a whole in due course.

3.2.2 IAA Update

3.19 ComReg has continued to engage with the IAA regarding its two projects relating to the 2.6 GHz Band, being:

- its implementation of filters on three Star 2000 radars in Shannon, Cork and Dublin airports; and
- the decommissioning of its older TA10M radar in Dublin and the installation of a new Star 2000 radar which ComReg understands will have an appropriate filter.

3.20 ComReg understands that the IAA are progressing the installation of new filters on three Star 2000 radars in Shannon, Cork and Dublin airports and expect to complete installation at all sites by Q1 2022 (as advised in Document 20/122) (subject to any suspensions of installation works as a result of, for example, COVID-19).

3.21 In relation to the decommissioning of its older TA10M radar in Dublin and the installation of a new Star 2000 radar, ComReg notes that on 10 February 2021 Fingal County Council granted approval for the IAA's application, and an appeal has since been submitted to An Bord Pleanála which is now under consideration³⁷.

3.22 ComReg understands that this appeal could add 18 weeks³⁸ to the IAA's project, resulting in the following updated estimated timelines (subject to the outcome of

³⁷ See Fingal County Council: <https://planning.agileapplications.ie/fingal/application-details/87420>

³⁸ The Board's statutory objective is to decide or dispose of appeals within 18 weeks, but may be longer: see http://www.pleanala.ie/guide/appeal_guide.htm

the appeal):

- building and site work to be completed by April 2022 (i.e. November 2021 +18 weeks);
- radar installation, regulatory and safety requirements, technical assessments, and operations validation will take 12 months from the building and site work completion date, meaning that the new (filtered) Star 2000 radar would be commissioned in April 2023 (i.e. November 2022 + 18 weeks). The decommissioning of the TA10M radar would take place immediately afterwards

3.23 ComReg continues to engage with the IAA and will provide updates on progress of the above projects as appropriate.

3.3 2.1 GHz Liberalisation fee

3.24 In Section 4.5.1 of Document 20/122, ComReg noted that the methodology for how 2.1 GHz liberalisation fees would be calculated was not included in the draft IM (Document 20/32) but noted that the methodology would be the same as that set out in paragraph 5.58 of Document 19/59R save for changes to take account of using Time Slice 1 only instead of averaging across Time Slice 1 and Time Slice 2. In paragraph 4.86 of Document 20/122 ComReg set out this update.

3.25 Further to that update, ComReg now includes Annex 14 (2.1 GHz Liberalisation Fees) to the IM. This provides details on this updated methodology (as set out in paragraph 4.86 of Document 20/122) including how a price point for Eir's current fees would be calculated³⁹.

3.4 Assignment Stage - Winner Determination and Assignment Options

ComReg' View in Document 20/32

3.26 In Paragraph 4.221 of the draft IM (Document 20/32), the determination of winning Assignment Bids was made subject to the constraints that exactly one Assignment Bid be accepted from each Assignment Bidder, and that the outcome conform to one of the candidate band plans underpinning the generation of Assignment Options.

3.27 Paragraph 4.221 of the draft IM states that:

³⁹ This was previously set out in paragraph 5.58 of Document 19/59R based on the methodology set out in Annex B of Document 19/124a.

For a given band, 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 (including Zero Bids) is accepted from each Assignment Bidder; and*
- *the specific frequency assignments corresponding to the set of winning Assignment Bids correspond to one of the possible Candidate Frequency Plans for the band identified by ComReg that satisfies the conditions set out in Section 4.3.1.*

3.28 Annex 9 of Document 20/32 sets out ComReg’s methodology for generating Assignment Options and its approach in relation to the corrected partition score.

Summary views of DotEcon

3.29 DotEcon advises that the Winner Determination Approach set out in the draft IM is unnecessarily restrictive because, once frequency Assignment Options have been identified that allow each Assignment Bidder a reasonable choice of frequencies and a reasonable alignment across Time Slices, the only restriction that should apply is that, for a given band, exactly one Bid is accepted from each Assignment Bidder.

3.30 In relation to Assignment Options, DotEcon recommends that ComReg adopts a method of streamlining the calculation of corrected partition scores, making use of the fact that there are just two Time Slices. In particular, DotEcon notes that this approach allows a simple rule-based approach to the treatment of unsold Time Slice 1 lots within the recursive algorithm for generation of bidder orderings in a band.

3.31 Further, DotEcon notes that this has no functional effect, but may help bidders both to better understand the calculation of Assignment Options and to perform these calculations themselves without needing to perform various optimisation steps.

ComReg’s Assessment and Final Position

3.32 ComReg agrees with DotEcon that the text in Paragraph 4.221 is unnecessarily restrictive and should be updated such that no restrictions are required other than exactly one Assignment Bid (including Zero Bids) is accepted from each Assignment Bidder.

3.33 In the Final IM, the relevant paragraph (paragraph 4.225) has been updated as follows.

“For a given band, the winning Assignment Bids are the combination of valid

Assignment Bids (including Assignment Bids deemed to have been made at a Bid Amount of zero for an Assignment Option for which the Assignment Bidder did not submit an Assignment Bid) of greatest total value amongst all valid Assignment Bids submitted (including Assignment Bids assumed to have been submitted by the TS2 Notional Winner, where required), subject to the conditions that:

- *exactly one Assignment Bid is accepted from each Assignment Bidder; and*
- *the frequency ranges assigned by the accepted Assignment Bids from distinct Assignment Bidders do not overlap”.*

3.34 ComReg also agrees with DotEcon’s proposed measure to streamline the calculation of corrected partition scores. In particular, this may help bidders to better understand the calculation of assignment options and to perform these calculations themselves. Further, there are no functional implications arising from this recommended change. Readers are referred to Annex 12 of the IM.

Chapter 4

4 Next Steps

- 4.1 Table 17 of Chapter 3 of the IM sets out the indicative timetable for the next steps of the Award Process.
- 4.2 This includes that, by 28 April 2021 Interested Parties must have registered with ComReg in relation to the presentation to Interested Parties on the Award Process and the Auction Rules, scheduled for 7 May 2021⁴⁰.
- 4.3 As noted in Section 3.1.1 above, ComReg will facilitate the submission of Phase 1 Questions regarding the Award Process and Award Rules and will respond publicly to these questions on an anonymised basis. The deadline for the submission of Phase 1 Questions regarding the Award Process is 16:30 hours (Irish time) on Friday 14 May 2021. The process for submission of both phase 1 and phase 2 questions is set out in Section 3.3 of the IM.
- 4.4 In the event that ComReg receives correspondence on matters relating to this document, the IM and the Award Process generally, ComReg hereby gives notice that it will publish all material correspondence received in this regard subject to the provisions of its guidelines on the treatment of confidential information (Document 05/24).

⁴⁰ Details will be made available on ComReg's website <https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/proposed-multi-band-spectrum-award/>

Annex: 1 Practical information for Applicants

A 1.1 Applicants are encouraged to submit complete and clear Applications to ComReg fully in accordance with the IM. In the interests of providing for a prompt Qualification Stage and to reduce the need for ComReg to revert on Applications which are inadvertently unclear or incomplete, ComReg provides below some further details on the specifics that are required in certain parts of the IM. These details are informed by ComReg’s experience of assessing Applications in previous award processes. Potential Applicants should refer to the list below prior to submitting their Application.

Supplying Appropriate Evidence

A 1.2 The Applicant is required to submit “appropriate evidence” (in accordance with paragraph 3.57 of the IM) that the persons signing the Application Form and the persons bidding on behalf of the Applicant are duly authorised by the Applicant to do so.

Witnessing specimen signature of Authorised Agents

A 1.3 As set out in Table A3.1 of the Application Form, witnessing of the specimen signature of each Authorised Agent is required. In the relevant box, the name and position of the witness rather than that of the Authorised Agent is required.

Both Authorised Agents Sign the Applicant Declaration

A 1.4 The Applicant is required to submit an Applicant Declaration signed by both Authorised Agents.

Confirmation with Regard to the Existence of Insiders

A 1.5 The Applicant is required to confirm if there are no Insiders (for example, outside advisors) involved in its participation in the Award Process.