OPTUS

Submission in response to ACMA Consultation Paper

Draft allocation instruments for 3.6 GHz band (3575-3700 MHz) metropolitan and regional lots auction

Public Version

June 2018

CONTENTS

Section 1. Executive Summary 4

Option 1 should be the preferred option 4

Draft Marketing Plan 5

Eligibility rule undermines the auction process 5

Section 2. Lot design principles 6

Option 1 best meets objectives of the Act and the spectrum management principles 7

Option 1 is the ACMA's preferred technical position 7

Option 1 supports the development of an efficient and competitive 5G market 9

The auction format is optimised with 5 MHz generic lots 11

The ACMA's current approach to the draft instrument warrants a further review 13

Section 3. Draft Marketing Plan 15

Licence commencement and duration 15

Payment terms and early access arrangements 16

Right of renewal 17

Lot configuration 18

Section 4. Draft Allocation Determination 24

Auction format 24

Auction stages 25

Minimum spectrum requirement 26

Auction rules 27

Application and registration process 29

Lot ratings and starting prices 29

Competition limits 30

Payment terms 30

Early access arrangements 30

Spectrum licence tax 31

Section 5. Detailed auction rules 32

Bids placed must be the basis for eligibility points 32

Schedule 1 – Rules for the primary stage of the auction 33

Schedule 2 – Rules for the secondary stage of the auction 35

Schedule 3 – Rules for the assignment stage of the auction 36

Section 1. EXECUTIVE SUMMARY

1.1 Optus welcomes the opportunity to respond to the Australian Communications and Media Authority's (ACMA) Consultation Paper on the draft allocation instruments for the 3.6 GHz spectrum (Consultation Paper).

1.2 In summary, the Consultation Paper presents two options for lot configuration that depend on the outcome of the concurrent consultation on the draft technical instruments. Both options in the Consultation Paper present very different implications on the auction rules that will apply.

1.3 Optus is concerned that this concurrent consultation process limits the extent to which Optus can provide meaningful comments. These concerns are magnified given that the draft allocation consultation and the draft technical instruments contain contradictory preferred options. That is, option one is preferred in the technical instruments and option 2 preferred in the draft allocation documents. This approach is also highly unusual given that almost all previous consultations on auction instruments have always included the full suite of technical and allocation instruments for comment in the same process.

1.4 The current approach further highlights that additional consultation on ACMA's preferred approach on lot configuration and auction rules is required once the technical rules are finalised to ensure that procedural fairness is observed.

1.5 Optus therefore recommends that the ACMA conduct a further round of consultation on the revised draft allocation instruments before they are finalised. Further consultation is important to ensure that all potential applicants are given an opportunity to comment on a common set of documents for the award of spectrum in the 3.6 GHz band.

1.6 Comments on the draft allocation documents cannot be made on an informed basis absent of a final position on the technical documents. As such Optus' comments below reflect the preferred position in the draft technical documents; namely, option 1. That is, the use – including mandated use in some instances – of synchronisation at a 3:1 downlink uplink frame structure to manage co or adjacent channel interference between licences in the 3.4 – 3.7 GHz bands.

Option 1 should be the preferred option

1.7 Optus submits that the ACMA should adopt Option 1 in the draft allocation instruments – namely, the use of 5 MHz generic lots. Importantly, this option is consistent with the ACMA's preferred position in the technical framework workstream, Option 1(a) that proposes the use - including mandated use in some instances - of synchronisation.

1.8 Optus is concerned that the draft allocation documents indicate a preference for Option 2. This is inconsistent with the ACMA's own technical preference. It is not clear to us how the ACMA can support a different option in the draft allocation documents when the outcome of the draft allocation documents is dependent on the outcomes of the technical framework.

1.9 Optus submits that an allocation of 5 MHz generic lots:

(a) Best promotes the objectives of the *Radiocommunications Act 1992* (Act) and the Spectrum Management Principles;

(b) Is consistent the ACMA's preferred technical position;

(c) Supports the development of an efficient and competitive 5G market; and

(d) Supports the proposed auction format;

Draft Marketing Plan

1.10 With respect to the draft marketing plan, Optus recommends:

(a) Licences should commence on a fixed date that is in line with the start of the unencumbered date for each of the relevant reallocation zones, with licensees able to apply for 'early access' apparatus licences in the intervening period.

(b) Full payment should only be required at a date closer to the licence commencement date. During the intervening period, it is appropriate for the ACMA to accept security in the form of a bank guarantee for the full outstanding amount, until full payment near licence start date is required.

(c) A right of renewal clause providing licensees with an automatic renewal option should be introduced. The 3.6 GHz process involves the award of new spectrum, for the deployment of a new technology requiring significant direct investment. The deployment of 5G should not be undermined with the lack of certainty created by short licence terms.

(d) A less complex lot configuration will enhance substitutability, simplify bidding strategy and encourage competition. Lot design should therefore be based on 5 MHz generic lots in all geographic areas.

(e) There should be no separate treatment of generic lots across the frequency range. The auction format with 5 MHz generic lots allows for bidders to resolve any differences in value during the assignment stage.

Eligibility rule undermines the auction process

1.11 The ACMA has confirmed to Optus that bid eligibility is to be based on bids processed not on bids placed. Optus is concerned that this could result in bidders accidently losing eligibility points. The ACMA has confirmed this outcome is possible. While the probability of this outcome occurring may be low, the impact is very high.

1.12 Consequently, Optus has strong concerns over the proposal to determine eligibility points based on 'bids processed' rather than 'bids placed' This, in effect, places the determination of eligibility in the hands of the ACMA and the auction system, rather than in the hands of bidders. This appears to be counter to the intent of spectrum auction and the eSMRA format. This issue must be remedied before the finalisation of the auction documents.

1.13 Optus requests that the rules be amended so that bid eligibility is based on bids placed not on bids processed. If this solution cannot be accommodated, the ACMA should engage further with industry to determine an agreeable solution prior to finalising the draft instruments.

1.14 Optus provides detailed comments on the auction rules in section 5 below

Section 2. LOT DESIGN PRINCIPLES

2.1 The draft allocation instruments currently reflect lot configuration based on Option 2. Optus disagrees with this approach and recommends that the original position for the allocation of the 3.6 GHz band spectrum in 5 MHz generic lots be considered.

2.2 Optus also notes that the approach taken in the draft allocation instruments is inconsistent with the work being progressed on the draft technical instrument, which has the aim of achieving synchronisation across the band consistent with Option 1. Optus strongly supports Option 1 across both sets of documents.

2.3 Option 1 suggests the use of synchronisation at a 3:1 downlink uplink frame structure to manage co or adjacent channel interference between licences in the 3.4 – 3.7 GHz bands. It also suggests the mandated use of such a synchronisation ratio if all other reasonable steps to mitigate interference have been exhausted between licensees within a set timeframe post discovery and notification of interference.

2.4 The 5G market is in its infancy, and as such, access to the pioneer 5G spectrum bands is important to ensure that all operators have the opportunity to acquire first mover benefits. This will likely require a mix of different spectrum bands to meet different scenarios relating to coverage, connectivity and latency.

2.5 Importantly, access to this 5G pioneer band must also be supported through the harmonisation of technical frameworks across the global 3.5 GHz band (that is, the 3400-3800 MHz frequency range). This is also a key objective identified for 3.6 GHz spectrum licences through the Technical Liaison Group (TLG) process that Optus has been engaged in.

2.6 Prematurely locking in a lot design and technical framework for the 3.6 GHz that does not support a future harmonised outcome with the adjacent 3.4 GHz band would significantly hinder the future development of 5G in Australia across the global 3.5 GHz band.

2.7 Therefore, the allocation of 5 MHz generic lots in all geographic regions, including Perth, provides the greatest flexibility to potential bidders in terms of facilitating technology agnostic and spectrum efficiency outcomes.

2.8 This section will show that an allocation of 5 MHz generic lots:

(a) Best promotes the objectives of the *Radiocommunications Act 1992* (Act) and the Spectrum Management Principles[1];

(b) Is consistent the ACMA's preferred technical position;

(c) Supports the development of an efficient and competitive 5G market; and

(d) Supports the proposed auction format;

2.9 Optus finds that there is little justification for adopting Option 2.

[1] https://www.acma.gov.au/Industry/Spectrum/Spectrum-planning/About-spectrum-planning/australian-spectrum-management-principles-spectrum-planning-acma

Option 1 best meets objectives of the Act and the spectrum management principles

2.10 The Act requires that the ACMA makes decisions that maximise, by ensuring the efficient allocation and use of the spectrum, the **overall public benefit derived from using** the radiofrequency spectrum.[2]

2.11 The ACMA has also developed a set of principles that further interprets the objective of the Act and guides its approach to spectrum management. The key theme of the Spectrum Management Principles is that the:

> *Public benefit will be maximised where spectrum is allocated to the highest value use or uses, i.e. the use or uses that maximise the value derived from the spectrum by licensees, consumers and the wider community.*

2.12 Optus further notes that the Spectrum Management Principles have a clear preference for the market determining allocation, through use of secondary trading and avoiding costly regulatory action where possible,

2.13 Optus submits that the Act and the ACMA's Spectrum Management Principles requires that the optimal lot design should consider the long-term use and deployment of the 3.6 GHz band within the context of the overall 5G ecosystem to ensure that the allocation rules maximise the use of the spectrum.

2.14 Prematurely locking in a lot design and technical framework for the 3.6 GHz that does not support a future harmonised outcome with the adjacent 3.4 GHz band would hinder the future development of 5G in Australia across the global 3.5 GHz band. Thereby not maximising the value of use of this spectrum.

2.15 Optus further considers that adopting a lot configuration based on 5 MHz generic lots in all geographic areas, including Perth will best facilitate and support the technical, competitive and long-term objective of the global 3.5 GHz band. This is explained in more detail below.

Option 1 is the ACMA's preferred technical position

2.16 In addition to this consultation on the draft allocation documents, the ACMA is conducting a concurrent consultation on the technical framework. This concurrent process is unprecedented and raises several important procedural issues which warrants further consultation on these documents. A typical process involves the settling of technical issues prior to the issuing of marketing plans and associated allocation documents.

2.17 Exacerbating this process is the apparent contradiction across the two processes. Most importantly, Optus observes that the ACMA is recommending Option 1 (5 MHz blocks and synchronisation across licences) in the technical forum and papers; yet recommends Option 2 (15 MHz guard band special lot category) in the draft allocation instruments. It is not clear to Optus how the ACMA can conclude consultation on the draft allocation instruments when its technical framework working group is recommending an alternate option.

2.18 To avoid any doubt, Optus strongly supports the adoption of Option 1a in the technical framework and Option 1 in the draft allocation documents.

---

[2] *Radiocommunications Act 1992*, s.3(a)

2.19 The TLG is a short-term advisory group convened by the ACMA as a consultative stakeholder forum with an interested in the technical aspects of spectrum licences. The 3.6 GHz band TLG was formed in March 2018. The TLG is currently consulting on possible options in its attempt to develop a single technical framework. These include:[3]

(a) Option 1: A synchronisation fall-back requirement for both 3.4 GHz and 3.6 GHz band spectrum licensees.

(b) Option 2: A synchronisation fall-back requirement on new 3.6 GHz band licences only and a stricter out-of-band emission mask at the frequency boundary between 3.4 GHz and 3.6 GHz licences to manage adjacent band interference issues.

2.20 The accompanying technical framework consultation also highlights the ACMA's preliminary view that Option 1 (or an approach that achieves this outcome over time) should be adopted.[4] The TLG is working with relevant stakeholders for this to occur.

2.21 Harmonisation across both the 3.4 GHz and 3.6 GHz bands is required to improve and optimise the spectral efficiencies across the global 3.5 GHz band.

> *This is because the bands are directly adjacent to each other and considered substitutable. A single framework would also simplify network design for any licensees that end up holding spectrum in both bands, and would help to reduce the complexity of any future defragmentation of spectrum holdings in the broader 3400-3700 MHz band.* [5]

2.22 This was also considered by the ACMA as one of the main merits in favour of Option 1.

> *The main benefit of this approach is that it removes or at least minimises the need for guard bands or other restrictions to achieve coexistence between licences in adjoining bands. This would result in considerable efficiencies in the use of existing licences as well as the adjacent parts of the 3.6 GHz band.* [6]

2.23 Optus further notes that the ACMA confirmed its preference for Option 1 **[CiC]**.[7]

2.24 Optus repeats that it is not practical for the ACMA to favour both Option 1 and Option 2 during consultation processes designed to finalise views on the preferred outcome. Given that the decision between the two options relies primarily on the solution of technical issues, Optus strongly recommends that the ACMA adopt its preferred position for Option 1 in the technical documents and that this preference flows through to the draft allocation documents.

---

[3] ACMA, March 2018, Development of the 3.6 GHz spectrum licence technical framework: Technical Liaison Group Consultation Paper

[4] ACMA, 2018, 3.4 GHz and 3.6 GHz band spectrum licence technical framework, Consultation Paper, May, p.3

[5] ACMA, 2018, 3.4 GHz and 3.6 GHz band spectrum licence technical framework, Consultation Paper, May, p.9

[6] ACMA, 2018, 3.4 GHz and 3.6 GHz band spectrum licence technical framework, Consultation Paper, May, p.2

[7] **[CiC]**

2.25 In addition, Optus does not consider that these technical issues will continue to exist by the end of the licence term. It follows that prematurely locking in a lot design and technical framework for the 3.6 GHz that does not support a future harmonised outcome with the adjacent 3.4 GHz band will hinder the future development of 5G in Australia across the global 3.5 GHz band. It is not clear to Optus how such a view is consistent with the objects of the Act.

2.26 In addition, long reallocation periods for different geographic regions also mean that successful bidders in the auction will not have immediate access to unencumbered licences, providing further time for the industry to agree to the technical requirements needed for Option 1 to occur. For example, metropolitan areas will remain encumbered until 30 March 2020 when the current reallocation period for those areas end.

2.27 This similarly aligns with Optus' preferred position to support Option 1a as the technical framework for the 3.6 GHz band. In particular, the impact on successful bidders is likely to be limited since adopting this alternative approach to Option 1 would also identify:

> *… a delayed start to 3.6 GHz band spectrum licences to align with the date that the 3:1 downlink to uplink ratio synchronisation structure would come into effect.*[8]

2.28 Optus firmly believes that Option 1, and similarly Option 1a, will be the appropriate approach to follow.

Option 1 supports the development of an efficient and competitive 5G market

2.29 Lot design should support the development of an efficient and competitive 5G market Optus submits that the long-term benefits that could flow from the use of 5G spectrum will be maximised by ensuring operators have the opportunity to access usable spectrum in the proposed 5G bands to further develop and investigate their 5G use cases.

2.30 As the ACMA is fully aware, this upcoming 3.6 GHz spectrum auction relates to spectrum that lies within the global 3.5 GHz 5G pioneer band. The global band contains a total of 500 MHz of spectrum, which could support five operators each using 100 MHz of contiguous spectrum.

2.31 However, the Australian allocation of this band has not yet to optimised for use by the 5G eco-system. The current Australian allocations within this band comprise the existing 3.4 GHz band (175 MHz in total) and the upcoming 3.6 GHz band (125 MHz in total). An additional 200 MHz (3300-3400 MHz and 3700-3800 MHz) of 5G spectrum in the global band has not been made available to the Australian market.

2.32 Optus is of the view that the long-term objective for this 5G band is to allow the full 500 MHz to be used by the market for 5G services. The ACMA should avoid any short-term decisions that places this objective at risk.

2.33 Optus therefore considers that a consistent approach across all these 5G bands would maximise the benefits of use of the full 3.5 GHz global 5G band. We note that Option 1 in the draft technical instruments aims to ensure consistency across the 3.4 GHz licences and the proposed 3.6 GHz licences. Where such consistency exists, the benefits of use of the spectrum will be maximised by allocating 5 MHz generic lots and allowing the market to decide the optimal combination of 5 MHz lots and the optimal location within the band.

---

[8] ACMA, 2018, 3.4 GHz and 3.6 GHz band spectrum licence technical framework, Consultation Paper, May, p.10

Option 2 does not support the long-term objective of the global 3.5 GHz band

2.34 Optus supports the use of 5 MHz lot sizes; and accepts that where a lower 15 MHz lot bandwidth is to be offered, that this should apply to all areas including Perth. However, Optus does not agree that a lower 15 MHz lot be introduced as a separate spectrum category.

2.35 The reason for the introduction of the separate single lower 15 MHz lot assumes that the proposed 3.6 GHz licences would adopt better aligned synchronisation arrangements (that is, a 3:1 ratio) but 3.4 GHz licence would have no synchronisation arrangements. During the intervening period, coexistence between 3.4 GHz and 3.6 GHz spectrum licences would be achieved via the implementation of strict unwanted emission limits at the 3.4/3.6 GHz boundary. Optus again notes that the ACMA does not prefer this outcome in the draft technical documents.

2.36 However, this approach does not address the long-term recommendation to have a single technical framework covering both the 3.4 GHz band and the 3.6 GHz band.

2.37 Instead, it seeks to further entrench the current technical limitations across both bands over a longer period. Introducing a separate 15 MHz lot (Option 2) does not alleviate or resolve any of the issues caused by coexistence between the 3.4 GHz and 3.6 GHz band. For example, under the current proposal:

(a) Option 2 requires the 15 MHz guard band that is causing the issue with the auction structure.

(b) In addition, Option 2 requires agreement with existing 3.4 GHz licensees to change licence conditions.

(c) The drawbacks of adopting TLG Option 2 outweigh the advantages from a deployment and timing perspective.

2.38 First, there are concerns that adopting the lower 15 MHz lot may not be sufficient depending on outcome of TLG, so this approach is only valid for one TLG outcome.

2.39 Other technical limitations on use of the 3.6 GHz band may also remain. For example, the tighter emission limit requirement at the 3.4/3.6 GHz boundary is not limited to the bottom 15 MHz and may similarly be applied if interference occurs where one licensee has no synchronisation clause.

2.40 Second, while Option 2 has been flagged to be contingent on an agreement with 3.4 GHz licensees to change licence conditions. Optus considers this issue to be temporary and reiterates that Option 1a in the technical documents provides a significantly improved alternative to Option 2.

2.41 Option 1a adopts the frequency lot configuration of 5 MHz generic lots and provides the advantage of achieving the long-term objective of the global 3.5 GHz band, including:

(a) It would ultimately use the preferred synchronisation approach of the 3:1 ratio as the coexistence measure between the 3.4 GHz and 3.6 GHz bands; and

(b) Accommodates the possibility that agreement can only be reached to implement an agreed synchronisation structure at a defined point in the future.

2.42 Optus strongly agrees with the objectives Option 1a seeks to achieve. This is further discussed in Optus' separate submission to the accompanying consultation on the draft technical instruments. In summary, Optus prefers this because:

(a) It will support maximum flexibility for licensees to determine the best way to address interference problems.

(b) Where interference is an issue and a solution is required, synchronisation between licensees is by far the most spectrally efficient use of the resources available.

(c) Using large guard bands (15-20 MHz, perhaps more, depending on the other option selected) is inefficient and potentially requires another round of changes to licences later.

(d) Option 1b results in a synchronisation which will result in a poor performance for initial 5G deployments potentially slowing the take-up of 5G services.

(e) The frame structure for Option 1(b) is not a priority for the vendors of chipsets to be used in end user devices. That is, devices are being manufactured to support 3:1 as a key configuration, not 1:1 as proposed under Option 1(b). Progressing with a 1:1 ratio will potentially limit the usefulness of any early 5G development.

(f) Option 2, with the limited 5G spectrum currently in play, results in inefficient use of 5G spectrum due to additional guard bands or geographic dead-zones that would accelerate the urgency for ACMA to release more spectrum for 5G.

2.43 Finally, the drawbacks of Option 2 have been identified to include the additional costs that would be imposed on spectrum licensees to achieve the strict unwanted emissions levels, along with the need for substantial guard bands to ensure coexistence at the 3.4/3.6 GHz boundary.

2.44 Importantly, where harmonisation is not achieved this will similarly stall the development of the 5G market in Australia. Optus therefore reiterates the importance of the objective that Option 1 seeks to achieve. Option 1 best achieves the objects of the Act and ensures that the benefits of 5G use in Australia is maximised.

The auction format is optimised with 5 MHz generic lots

2.45 Given that there will be a total of 125 MHz made available in this auction, Optus submits that the allocation of spectrum in the 3.6 GHz band should be in the form of 5 MHz generic lots. This would allow all potential bidders to express their values for different packages as it applies to them.

2.46 Notably, the ESMRA format should only be applied for generic lots with only minor differences for different lot positions in the band. Importantly, the ACMA was of the view:

> *The use of generic lots and an assignment stage will enhance substitutability, simplify strategy, and encourage competition.*[9]

2.47 These lots are considered generic lots during the primary stage; and should continue to be treated as generic lots for the purposes of the assignment stage. Any bidder value for assignment of the frequency range should take place on an unequivocal basis in the assignment stage with no prescribed bias.

[9] ACMA, 2017, Draft spectrum reallocation recommendation for the 3.6 GHz band: Metropolitan and regional areas of Australia, October, p.26

2.48 The ACMA highlighted its preferred auction format to be two-stage ESMRA format in its October 2017, acknowledging that:

> *The use of generic lots in the clock stage is likely to improve substitution, reduce risk of fragmentation, and also simplify bidding strategy. This approach reduces the exposure risk relative to the standard SMRA auction format.*[10]

2.49 In addition to generic lots, the ACMA also highlighted that the use of equal sized lots (e.g. 5 MHz lots sizes) was needed. Notably, it also highlighted that:

> *If different sized lots are offered, it would be necessary to set them up as a separate category, which will introduce substitution risk. Where lots are substitutes, bidders will typically want to acquire the lowest priced lot(s), and substitution risk refers to the risk of not being able to switch bids to bid on the most preferred lots at a given price.* [11]

2.50 Optus supports the use of 5 MHz generic lots; and given the auction design selected, recommends that retaining a simple lot configuration for the allocation of lots will provide the greatest flexibility to potential bidders in terms of facilitating technology agnostic and spectrum efficiency outcomes.

Option 2 introduces additional complexities to the auction process

2.51 Optus submits that adopting separate approaches for the treatment of the lots on offer in different geographic areas increases unnecessary complexities into the auction process.

2.52 A key objective for the allocation of spectrum in the 3.6 GHz band is the adoption of an award process that facilitates contiguous spectrum. Adopting lot design based on 5 MHz generic lots – one lot category, resulting in 14 spectrum products – will provide the greatest flexibility to potential bidders in terms of facilitating technology agnostic and spectrum efficiency outcomes.

2.53 The counterfactual view, based on Option 2 – four lot categories, resulting in 29 spectrum products – introduces addition complexities to the auction process. These issues are further compounded through the introduction of special auction rules that specifically apply only to the lower 15 MHz lot. In doing so, this augmentation of the rules for specified lots adds additional bidding and strategic complexity thereby undermining the simplicity of the standard ESMRA format.

2.54 The introduction a separate 15 MHz lot also introduces auction complexity thorough substitution risks from having different lot categories and products. Bidding and strategic complexity will result from bidders having to place demand for separate lot sizes.

2.55 The ACMA has proposed an auction rule where the winner of the single lower 15 MHz lot will be guaranteed contiguity with any lots they hold in the relevant Upper lot category for that geographic region. This ensures that if a bidder has won the category 1 lot and 4 lots in category 2, they are automatically assigned a total of 35 MHz at the lower end of the 3.6 GHz frequency range (that is, the 3575-3610 MHz frequency range).

---

[10] ACMA, 2017, Draft spectrum reallocation recommendation for the 3.6 GHz band: Metropolitan and regional areas of Australia, October, p.24

[11] ACMA, 2017, Draft spectrum reallocation recommendation for the 3.6 GHz band: Metropolitan and regional areas of Australia, October, p.27

2.56 However, Optus is concerned that augmenting the rules to allow this 'guaranteed contiguity requirement' will undermine the benefits of competition, substitutability and simplicity that the use of 5 MHz generic lots in all geographic areas afford. Notably, by not introducing the complexity of a different lot size with special rules attached, bidders can be confident they are bidding for equivalent product lots and that any value for location in the band can also be separately assessed.

2.57 Under both lot configuration options, potential bidders are aware there could be potential issues during the intervening period associated with the lower 15 MHz in the 3.6 GHz band. Regardless of whether it is confirmed to exist or not, and for how long, potential bidders are already aware of this issue upfront.

2.58 Introducing a separate 15 MHz lot does not solve the underlying issues, but rather entrenches them for the duration of the licence period. There is no guarantee of the extent of the guard band required is at this bandwidth. For example, 20 MHz or more may be needed if there is no agreement on common instruments between 3.4 GHz licensees for harmonisation across the band. As a result, the emissions from 3.4 GHz to 3.6 GHz require the use of a larger guard band. ACMA have also indicated that 20 MHz would be required and that this should be shared between licences. A 15 MHz guard band would require existing all licensees in 3.4 GHz to accept additional restrictions in their existing licences.

2.59 It also introduces auction and bidding complexity for a number of auction parameters, including substitution risks between different product lots in the same geographic region. Bidding complexity will result from bidders having to place demand for separate lot sizes.

2.60 Optus therefore considers that many of the concerns relating to auction parameters set out in the Draft Allocation Determination will also fall away if Option 2 is not accepted. These concerns are discussed further in Section 4 and Section 5, and include:

(a) Lot rating and starting prices – adopting Option 1 will simplify the need to set separate lot ratings as all lots therefore being truly generic.

(b) Competition limits – adopting Option 1 removes any requirement to clarify how competition limits could be applied.

(c) Guaranteed contiguity requirement – adopting Option 1 removes the concerns raised in relating to the exclusion of certain frequency range options in the assignment round.

2.61 Optus submits that support for the award of 5 MHz generic lots (Option 1) in all geographic areas, including Perth, will therefore alleviate these unnecessary auction complexities.

The ACMA's current approach to the draft instrument warrants a further review

2.62 In summary, the ACMA has now presented two options for lot configuration that depend on the outcome of the concurrent consultation on the draft technical instruments. Both options present very different implications on the auction rules that will apply.

2.63 Both ACMA consultations also present a different stated preference: the draft technical instruments consultation paper has a preference for Option 1, while the draft allocation instruments have been drafted with Option 2. This approach is also highly unusual given that almost all previous consultations on auction instruments have always included the full suite of technical and allocation instruments for comment in the same process.

2.64 The current approach further highlights that there should be additional consultation on ACMA's preferred approach to lot configuration and auction rules once its technical rules are finalised.

2.65 Optus therefore recommends that the ACMA reopen consultation on the revised draft allocation instruments before they are finalised. This is an important step to ensure that all potential applicants are given opportunity to comment on a common set of documents for the award of spectrum in the 3.6 GHz band.

Recommendation

2.66 Importantly, all TLG options will have a different impact on spectrum use in the 3.6 GHz band, therefore the lot design should be generic and offered in equal sized lots.

2.67 Optus further reiterates that for the all the reasons discussed above, adopting TLG Option 1a - which supports lot configuration based on 5 MHz generic lots in all geographic areas, including Perth - will best facilitate and support the technical, competitive and long-term objective of the global 3.5 GHz band.

Section 3. DRAFT MARKETING PLAN

3.1 This section provides Optus' comments on elements of the *Radiocommunications Spectrum Marketing Plan (3.6 GHz Band) 2018* (the Draft Marketing Plan).

3.2 The Draft Marketing Plan sets out spectrum product on offer, including the procedures required for the award of the spectrum and the licence conditions that may apply to the spectrum licences to be issued.

3.3 In this section, Optus recommends that:

(a) Licences should commence on a fixed date that is in line with the start of the unencumbered date for each of the relevant reallocation zones, with licensees able to apply for 'early access' apparatus licences in the intervening period.

(b) Full payment should only be required at a date closer to the licence commencement date. During the intervening period, it is appropriate for the ACMA to accept security in the form of a bank guarantee for the full outstanding amount, until full payment near licence start date is required.

(c) A right of renewal clause providing licensees with an automatic renewal option should be introduced. The 3.6 GHz process involves the award of new spectrum, for the deployment of a new technology requiring significant direct investment. The deployment of 5G should not be undermined with the lack of certainty related to short useful licence terms.

(d) A less complex lot configuration will enhance substitutability, simplify bidding strategy and encourage competition. Lot design should therefore be based on 5 MHz generic lots in all geographic areas.

(e) There should be no separate treatment of generic lots across the frequency range. The auction format with 5 MHz generic lots allows for bidders to resolve any differences in value during the assignment stage.

Licence commencement and duration

3.4 In general, Optus reiterates its previous views that it would not be appropriate to commence licences and require licence payment at the time of licence commencement, for licences that remain encumbered. This may arise due to technical interference issues and it would not be in the interests of existing and new licensees to operate different technologies within the same frequency range and geographic area (or even geographically adjacent areas). Optus also considers that given the potential reduced licence terms, there should be a right of renewal included as part of the licence condition.

3.5 Optus therefore supports the view that licence commencement should only occur after the reallocation period has ended. We also support an early access regime so spectrum acquired at auction can be accessed as satellite and fixed incumbents vacate the band. These views remain valid for this consultation.

3.6 In this case, Optus considers that licence commencement should commence on a fixed date and in line with relevant reallocation period for each of the relevant reallocation zone. That is,

(a) Metropolitan licences should commence on 30 March 2020;

(b) Perth licences should commence on 30 March 2023; and

(c) Regional licences should commence on 30 March 2025.

3.7 To facilitate the introduction of separate licence commencement dates, the number of spectrum products will have to be expanded from one product to three product categories. This does not affect the total number of lots to be auctioned.

3.8 The ACMA has instead proposed two options for licence commencement:

(a) Option 1 – licences to commence as soon as possible after payment of the winning price after conclusion of the auction.

(b) Option 2 – licences to commence at the end of the two-year reallocation period for metropolitan areas, with licensees able to apply for 'early access' apparatus licences in the intervening period in any unencumbered areas.

3.9 Where separate licence commencement dates are not considered, Optus considers that the licence commencement date for all licences be aligned with a date that is no earlier than the end of the earliest reallocation period, i.e. 30 March 2020. This would provide certainty on the licence duration for all geographic areas and minimises the period in which any 'early access' apparatus arrangements would need to apply.

3.10 Licence expiry should continue to align with the existing 3.4 GHz spectrum licences. In addition, Optus also considers that a right of renewal clause should be introduced to recompense for the reduced useful (i.e.. unencumbered) licence terms.

3.11 As a result, the 3.6 GHz spectrum licences will apply for a licence term commencing from 30 March 2020 to 13 December 2030, which is a period of up to 10.75 years.

Payment terms and early access arrangements

3.12 Subsection 17 in the Draft Spectrum Marketing Plan confirms two options for the licence start date are being considered – licence commence on a fixed date; or licences commence as soon as possible after payment is received (which may or may not include a deferred payment option).

3.13 As noted above, where separate licence commencement dates are not considered, Optus supports the proposal for licences to commence on a fixed date, that is no earlier than the end of the earliest reallocation period, i.e. 30 March 2020. Optus also submits that this has two important flow through implications:

(a) First, payment arrangements should be deferred to a date closer to the licence commencement date and not required within 20 working days after the date of the notice; and

(b) Second, this necessitates the introduction of an early access regime so that spectrum acquired at auction may be accessed in any unencumbered areas during the intervening period before licence commencement.

3.14 These are discussed below.

Payment arrangements

3.15 The ACMA has noted the Minister's advice that instalment payments will not be permitted for the 3.6 GHz band auction. Instead payment will be required within 20 working days after the date of the notice.

3.16 Optus submits that to more closely align with established commercial asset acquisition processes, it is recommended that auction payment terms be aligned with the availability of unencumbered spectrum. It is inappropriate and commercially unreasonable that full

payment be requested for an asset which will not be able to be used to deliver commercial services at the point of issue (i.e.. upon conclusion of the auction after payment or deed of financial security is received).

3.17 Optus therefore considers that the payment date should only be required at a date closer to the licence commencement date, in this case 30 March 2020.

3.18 In line with the approach taken in past auctions, it is appropriate for the ACMA to accept security in the form of a bank guarantee for the full outstanding amount, until full payment near licence start date is required. Optus further submits that this approach still abides with the overarching requirement that spectrum licences are not issued until full payment has been received. This issue is further discussed in Section 4.

Early access regime

3.19 The ACMA has proposed to amend the Tax Determination in July 2018 to incorporate base rates of tax for a PMTS Class B (3575-3700 MHz) licence. The proposed rate of $0.0039/MHz/Pop is in line with the current licence charges and annual tax that applies to PMTS Class B (3400–3425 MHz and 3492.5–3542.5 MHz).

3.20 Optus supports the inclusion of the proposed amendment. This is required to support the early access arrangements under the proposal where the new 3.6 GHz spectrum licences commence from 30 March 2020.

Right of renewal

3.21 Optus is concerned that no certainty has been provided to account for the significantly reduced useful licence term for the 3.6 GHz spectrum licences.

3.22 To reiterate, the proposed 3.6 GHz licences will only have a useful (i.e. unencumbered) term of between 5 and 11 years due to the combined effect of:

(a) The seven-year reallocation period in regional areas, effectively reduces the useable term to five years; and

(b) The licence expiry to align with existing 3.4 GHz spectrum licences, effectively reduces the licence term to around 11 years. This is less than the typical 15 year licence term that is offered to all new spectrum licences, particularly where it relates to award of spectrum licences in a new band and intended for the deployment of a new technology.

3.23 Optus submits that right of renewal will be particularly important to the 3.6 GHz band to ensure investment certainty and network deployment.

3.24 First, spectrum is a key driver of competition in the mobile market. Spectrum is one of the fundamental inputs into the production of mobile services. There is a direct trade-off between the amount of spectrum allocated to an operator, the cost of deploying network assets, and the available capacity on the network.

3.25 In general, allocation decisions should factor in the current use of spectrum and any long-term developments expected to take place within the relevant band. There may be circumstances (such as the renewal of expiring licences) which may warrant that a bespoke arrangement resulting in administered allocation is the most efficient allocation decision to be determined. In practice, no operator would incur the significant costs associated with network investment when there is any doubt over the ongoing control of critical spectrum assets.

3.26 Second, such a short useful licence term, such as five years, would undermine and pose a direct threat to any network investment made. The lack of investment certainty is further amplified due to the identification of the 3.6 GHz band as one of the pioneer bands for 5G deployment. The issue of network investment will therefore have to consider not only the initial cost of acquiring the new spectrum, but also all the additional costs such as new network design, capacity and equipment required to support a new technology.

3.27 This also directly contrasts the approach currently taken in other jurisdictions, such as the European Union, where regulators are currently investigating and preparing for the award of new 5G licences for 20-year licence terms.

3.28 Third, a failure to re-issue existing spectrum licences, particularly where the spectrum asset forms a core network input into the business, would have negative consequences for infrastructure investment. This is because a failure to re-issue would cause significant business uncertainty, which would cause a suspension of existing investment planning.

3.29 Perhaps more importantly, is the adverse consumer experience impacts that would result. Given the significance of spectrum as a key underlying network input for the provision of a mobile service, any significant reduction in an operator's core spectrum holding could result in the customer losing all access to the service.

3.30 Optus therefore recommends that the ACMA introduce a right of renewal clause providing licensees with an automatic renewal option in accordance with a proof of use condition. The 3.6 GHz process involves the award of new spectrum, for the deployment of a new technology requiring significant direct investment. The deployment of 5G should not be undermined with the lack of certainty related to short useful licence terms.

Lot configuration

3.31 The 3.6 GHz auction will make available 125 MHz in the 3575-3700 MHz range across metropolitan and regional areas. Within this context, there are two important aspects for lot configuration: frequency bandwidth and geographic regions.

3.32 Optus supports the use of 5 MHz generic lots in all geographic areas, including Perth. There should be no special treatment of generic lots within the frequency range since the auction format already allows for bidders to resolve any differences in value during the assignment stage.

3.33 Optus also supports the auction rule that any lots won within a single category be awarded on a contiguous basis (that is, if 4 lots are won in any given geographic region, this means that a total of 20 MHz has been awarded to the winning bidder in that geographic region).

3.34 Spectrum licences will be allocated by auction in line with the procedures set out in the Allocation Determination. In particular the auction will be carried out over three stages and will be detailed at Schedules 1, 2 and 3 of the Allocation Determination.

Lot categories and Products

3.35 Given the limitation and interoperability between the technical framework and lot configuration, Optus considers there should be alignment with the option identified in the Technical Liaison Group (TLG). Optus also sets out its specific comments on the accompanying technical framework consultation in a separate submission.

3.36 Optus also recommends that the ACMA reopen consultation on the revised draft allocation instruments before it is finalised. This is important to ensure that all potential

applicants are given opportunity to comment on a common set of documents for the award of spectrum in the 3.6 GHz band.

3.37 In particular, the ACMA has proposed two options for Lot categories and Products to be offered at auction. These options are intrinsically linked to the draft technical instruments which are being considered in a concurrent process and summarised at Table 1.

Table 1 ACMA proposed options for 3.6 GHz spectrum auction

Option	Description	Impact
1. Common network synchronisation	No adjacent-channel interference in lower 15 MHz of 3.6 GHz band	Lots to be offered as: **25 x 5 MHz generic lots** **15 spectrum products** are available (1 product per region, 2 products in Perth)
2. Strict unwanted emission limits	Adjacent-channel interference in lower 15 MHz of 3.6 GHz band	Lots to be offered as: Lower band: 1 x 15 MHz (3575-3590 MHz) Upper band: 22 x 5 MHz (3590-3700 MHz) **29 spectrum products** are available (2 products per region, 3 products in Perth)

Source: ACMA Consultation Paper, p.10

3.38 Both options present very different implications on the auction rules that will apply, and there should be additional consultation on ACMA's preferred approach once its technical rules are finalised.

3.39 The accompanying technical framework consultation also highlights the ACMA's preliminary view in favour of Option 1.

> *On balance, the ACMA considers it desirable for coexistence between 3.4 GHz and 3.6 GHz spectrum licences to be achieved through a synchronisation approach acceptable to all parties. On this basis, the ACMA preliminary view is that Option 1 (for an approach that achieves this outcome over time) should be adopted.*[12]

3.40 Optus further notes that the ACMA confirmed its preference for Option 1 **[CiC]**.[13]

3.41 However as highlighted by the ACMA, the draft allocation instruments currently reflect Option 2 but iterates that *"Any changes to the technical framework will be reflected in the final allocation instruments."*[14] Optus disagrees and recommends that the original position for the allocation of the 3.6 GHz band spectrum in 5 MHz generic lots be considered.

[12] ACMA, 2018, 3.4 GHz and 3.6 GHz band spectrum licence technical framework, Consultation Paper, May, p.3

[13] **[CiC]**.

[14] ACMA, 2018, Draft allocation instruments for 3.6 GHz band (3575-3700 MHz) metropolitan and regional lots auction, Consultation Paper, May, p.10

3.42 Notably, the accompanying technical framework consultation also presents an Option 3 that is not discussed here. Option 3 is described to be a variant of Option 2 which would see no changes to the existing 3.4 GHz licences and associated instruments.

3.43 Optus strongly disagrees with this Option 3 (and similarly, Option 2) as it would not deliver or lead to an outcome that is in the long-term interest of all licensees across both the 3.4 GHz and 3.6 GHz bands.

3.44 While Optus does not agree with either of the options set out in the draft technical instruments in their entirety, based on the options provided in this Consultation Paper, Optus considers the proposed geographic regions and the lot configuration based on Option 1 (in Table 1) will best lead to an optimal spectrum allocation outcome.

3.45 Subsection 11(8) in the Draft Spectrum Marketing Plan also intends to qualify that the lots in Category 1 (i.e. the lower 15 MHz lot in all geographic regions) may not go through an assignment stage. This is confirmed at Schedule 3 of the Allocation Determination. However, it remains unclear to what extent the guaranteed contiguity requirement will impact on the assignment stage bids to be submitted.

3.46 Optus is also concerned that adopting the lower 15 MHz lot may not be sufficient depending on outcome of TLG – and potentially a guard band of up to 25 MHz may be required. This approach is only valid for one TLG outcome, which is not the AMCA's preferred TLG outcome.

3.47 Importantly, all TLG options will have a different impact on spectrum use in the 3.6 GHz band, therefore the lot design should remain generic in its frequency lot configuration.

3.48 The ACMA has also proposed to allow Perth lot categories to be subject to separate treatment. Following a separate lot valuation analysis, the ACMA considered it was important to allow bidders to engage in price discovery for both unencumbered and encumbered lots; and proposed that two lot categories for Perth be adopted.

3.49 However even with special rules applied, there may be circumstances where unintended consequences may arise in terms of contiguity. For example, where a single bidder is awarded lots in all three Perth categories, the rules do not allow the bidder any option to split its lots won in Perth Middle to create contiguity with both the lots won in the Perth Lower and the Perth Upper categories.

3.50 Optus disagrees and reiterates the view that Perth should not be subject to separate treatment. For the same reasons highlighted by the ACMA, each of the three Perth lot heterogeneity options will have advantages and disadvantages. However, the ACMA's preferred position is the only one that risks an outcome of non-contiguous spectrum.

3.51 Optus therefore recommends that in terms of lot design:

(a) A less complex lot configuration will enhance substitutability, simplify bidding strategy and encourage competition;

(b) All lots should be treated as 5 MHz generic lots in all geographic areas, including Perth – resulting in 14 spectrum products to be made available (one product per region);

(c) Where different lot categories, ie. to facilitate different lot sizes, are offered then this will introduce substitution risk and complexity to the auction process;

(d) The auction format with 5 MHz generic lots allows for bidders to resolve any differences in value during the assignment stage.

3.52 Accordingly, the Draft Marketing Plan will need to reflect the changes discussed above. These include the changes to the lots on offer – subsection 11(1) to (4), Schedules 1 and 2 – which should be revised to reflect that only one category and 14 spectrum products will be offered. The size of each lot is 5 MHz unpaired.

3.53 As discussed above and in Section 2, Optus reiterates that adopting TLG Option 1a which supports lot configuration based on 5 MHz generic lots in all geographic areas, including Perth will best facilitate and support the technical, competitive and long-term objective of the global 3.5 GHz band.

Geographic regions

3.54 The ACMA had previously consulted on three options for geographic boundaries, and now proposes to adopt a modified version of Option 1 with the following features:

(a) Six inner metropolitan lots based on current 3.4 GHz holdings;

(b) No outer metropolitan lots; and

(c) Eight regional lots based on industry submissions

3.55 In particular, while Optus supports the revision of the metropolitan boundary to align with existing 3.4 GHz holdings, we are concerned with the ACMA's reasoning that *"If allocation limits are applied to metropolitan areas, this will enable better alignment of allocation limits with geographic lots."*[15] Notably it continues to ignore the previous concerns related to the applicability of allocation limits being set for geographic lots in the regional areas. This may lead to unintended consequences.

3.56 First, the geographic boundaries are relevant to any imposition of competition limits that may apply. In particular, the metropolitan lots are now designed such that they can facilitate a combined allocation limit to apply across the existing 3.4 GHz band with lots on offer in the 3.6 GHz band.

3.57 However, for regional lots this means that only an in-band allocation limit may be set. Allocation limits in regional areas will now be problematic because the newly defined 3.6 GHz regional areas do not align to the existing 3.4 GHz regional areas. Thereby potentially limiting a bidder from bidding on a particular regional area, where in part of the licence area they have no existing 3.4GHz spectrum and in another part of the same area they have large amounts of 3.4GHz spectrum. This means that certain bidders may be able to acquire frequency bandwidths to increase their already significant holdings in major regional and urban centres where 3.4 GHz regional spectrum licences have been awarded.

3.58 These issues are further complicated with the introduction of the lower 15 MHz lot category. Optus submits that support for the award of 5 MHz generic lots (Option 1) in all geographic areas will therefore alleviate this unnecessary complexity.

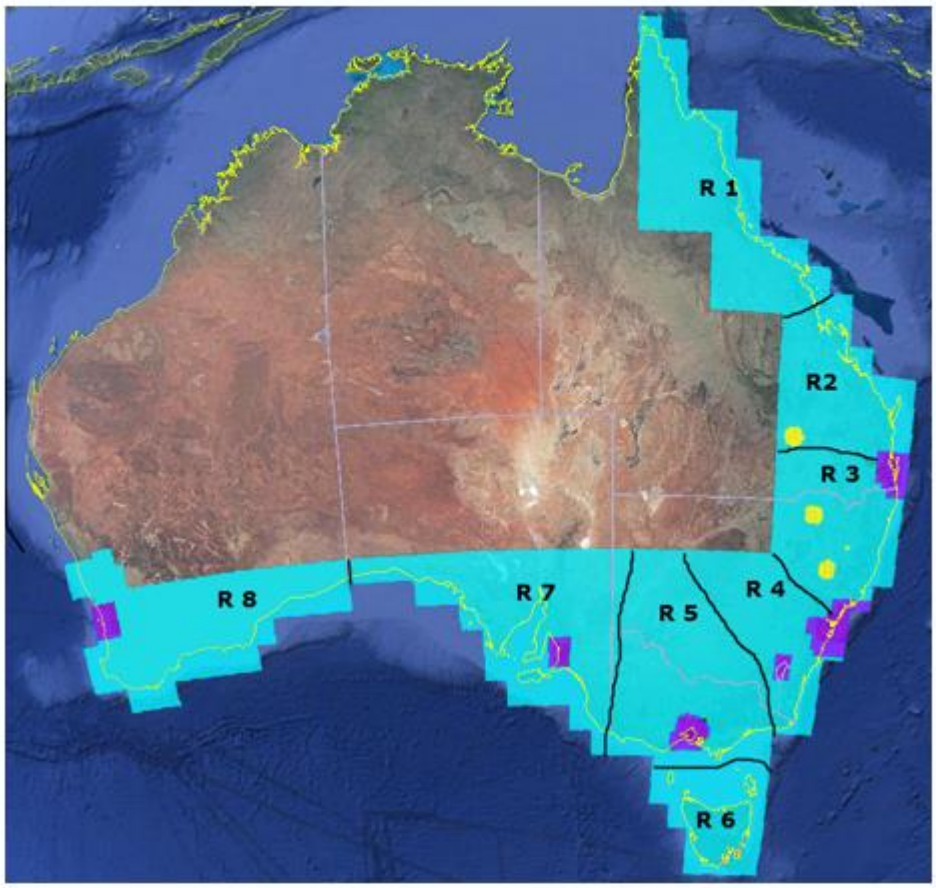
3.59 Optus also welcome the provision of the HCIS identifiers for each of the regional geographic areas. While Optus did not support the Option 1 proposal, we may accept the modified Option 1 proposal, including the proposed changes to a number of these regional geographic boundaries. The differences between the two options are shown at Figure 2 and Figure 3.

---

[15] ACMA, 2018, Draft allocation instruments for 3.6 GHz band (3575-3700 MHz) metropolitan and regional lots auction, Consultation Paper, May, p.22

Figure 2 Geographic regions (Option 1)

Figure 3: Option 1—3.4 GHz metro areas offered in 2000 allocation and 3.6 GHz regional areas

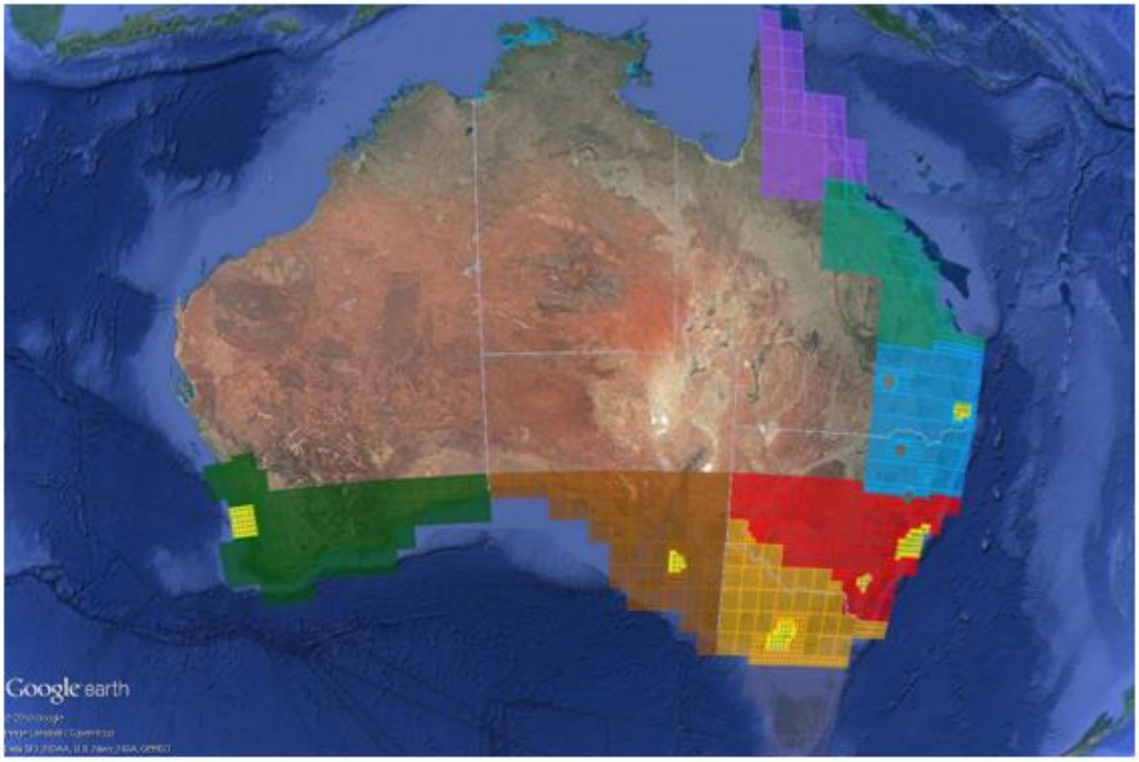


KEY:		
Yellow	Excise areas*	Moree, NSW
		Quirindi, NSW
		Roma, Qld
		Uralla, NSW
Purple	Metro areas	Adelaide
		Brisbane
		Canberra
		Melbourne
		Sydney
		Perth
Blue	Regional areas	R1 — Nth Qld
		R2 — Ctrl/East Qld
		R3 — Sth QLD & Nth NSW
		R4 — East & West NSW
		R5 — Ctrl NSW & Vic.
		R6 — Tas.
		R7 — SA & West Vic.
		R8 — WA

Source: ACMA Consultation Paper, p.20

Figure 3 Geographic regions (modified Option 1)

Figure 5: ACMA proposed lot configuration



KEY:		
No colour	Excise areas*	Moree, NSW
		Quirindi, NSW
		Roma, QLD
		Uralla, NSW
Yellow	Metro areas	Adelaide
		Brisbane
		Canberra
		Melbourne
		Sydney
		Perth
Purple	Regional areas	North Queensland
Turquoise		Central Queensland
Aqua		Regional Northern NSW/Southern Qld
Red		Regional Southern/Western NSW
Orange		Regional Victoria
Grey		Tasmania
Brown		Regional South Australia
Green		Regional Western Australia

Source: ACMA Consultation Paper, p.23

Section 4. DRAFT ALLOCATION DETERMINATION

4.1 This section provides Optus' comments on elements of the *Radiocommunications (Spectrum Licence Allocation – 3.6 GHz Band) Determination 2018* (the Draft Allocation Determination).

4.2 The Draft Allocation Determination sets out auction rules for the spectrum product on offer, including the type of auction, how the auction will be advertised and the payment arrangements for licences.

Auction format

4.3 The Consultation Paper acknowledges that the draft allocation determination specifies that the 3.6 GHz band auction will use the enhanced multi round ascending (ESMRA) auction methodology, implemented on a secure online system. The main features of the ESMRA auction format are summarised below:

Table 4 Summary of auction format and suitability for 3.6 GHz auction

Format	Main features	Suitability for 3.6 GHz auction
Enhanced SMRA	• Allows bidding on generic lots • Provides an assignment stage to allocate spectrum contiguously • Enables bidders to set a minimum spectrum requirement (MSR) to reduce exposure risk • Enables intra-round bids to break ties and reduce auction length • Enables secondary stage to sell any unallocated lots after primary stage	• Simplifies bidding using generic, substitutable lots in primary stage • Enables bidders with preferences for particular lots to bid for them in the assignment stage rather than switching between lots • Removes risk of discontiguous spectrum • Reduces risk of unusable amounts of spectrum

Source: ACMA Consultation Paper, p.26

4.4 However, nothing in the draft allocation determination (or draft spectrum marketing plan) directly refers to the application of the ESMRA auction format.

4.5 Optus further reiterates that allocation of spectrum in the 3.6 GHz band should be in the form of 5 MHz generic lots in all geographic areas, including Perth – resulting in 14 spectrum products to be made available (one product per region).

4.6 A less complex lot configuration will enhance substitutability, simplify bidding strategy and encourage competition. This would allow all potential bidders to express their values for different frequency bandwidth packages (in MHz) as it applies to them during the primary and secondary stages; and leaves the assignment stage to resolve any differences in value for location in the frequency range.

Auction stages

4.7 Subsection 40(1) in the Draft Allocation Determination should be revised to include the wording: *"The auction consists of a number of stages, each of which is made up of a number of rounds."*

4.8 Notably, the ACMA proposes that the ESMRA auction for the 3.6 GHz band be conducted in three stages:[16]

(a) **Primary Stage** – a series of clock rounds, with all products open and on offer in all rounds. Bidders bid on both lot categories in each region – i.e. the single 15 MHz encumbered lot and the 22 x 5 MHz unencumbered (generic) lots. Primary Stage ends when the aggregate demand is less than or equal to supply in all geographic regions.

(b) **Secondary Stage** – If any lots remain unallocated after the primary stage due to the minimum spectrum requirement (MSR) usage, then they are sold via a simple clock auction format in each region. Lots unallocated in the primary stage due to insufficient demand are not offered for sale in this stage.

(c) **Assignment Stage** – a bidder who holds spectrum lots after the primary and secondary stages may submit bids to establish the order of their assignment relative to other bidders. Regions with identical outcomes from primary and secondary stage may be combined.

4.9 Optus notes however, that the intent described in the Consultation Paper (and summarised above) does not currently appear to be reflected in the Draft Allocation Determination. In particular, subsection 42 in the Draft Allocation Determination sets out what each stage of the auction comprises, while Schedules 1, 2 and 3 set out the rules in which the stages are intended to operate.

Primary Stage

4.10 Bidder eligibility to participate in the Primary Stage is well established, as this is simply a reflection of what each bidder has been registered for during the application process.

4.11 Each lot of a product available for bidding in the first clock round will continue to be open for bidding in all subsequent clock rounds until the final clock round ends.

Secondary Stage

4.12 Bidder eligibility to participate in the Secondary Stage only requires that any potential bidder in this stage must have met the minimum spectrum requirement test in the relevant region during the primary stage, and that any bids placed does not exceed any allocation limits that apply.

4.13 There is no reference made to the Initial Eligibility as registered by the bidder during the application process. This suggests that a bidder could theoretically be allocated more spectrum (in terms of overall eligibility points across both the primary and secondary stages) than they had initially registered for. Optus welcomes clarification on this matter.

[16] ACMA, 2018, Draft allocation instruments for 3.6 GHz band (3575-3700 MHz) metropolitan and regional lots auction, Consultation Paper, May, pp.27-28

4.14 The Consultation Paper acknowledges that *"Lots unallocated in the primary stage due to insufficient demand are not offered for sale in this stage,"*[17] however this is not reflected in the Draft Allocation Determination. For example, Schedule 2 acknowledges that *"This Schedule applies to all residual lots of each product that are available in the secondary stage of the auction."* 'Residual lot' is defined as *"a lot of a product that was not allocated in the primary stage."*[18] As such, this is not the same interpretation as described in the Consultation Paper (that is, a lot that had zero demand at the end of the Primary Stage could under the auction rules subsequently be allocated in the Secondary Stage).

4.15 Optus welcomes further clarification on this issue, however notes that this issue would not exist where a simple frequency lot configuration design was applied.

Assignment Stage

4.16 Bidder eligibility to participate in the Assignment Stage applies to bidders that were allocated lots in a product (in categories 2, 3 and 4) to a bidder in the primary or secondary stage.

4.17 Frequency range options in assignment rounds are to be provided to each bidder. Assignment bids can only be submitted for any frequency range option provided.

4.18 Optus notes that the ACMA has not provided any guidance on how it will determine the structure of frequency range options in assignment rounds. Optus considers that there could be a number of concerns irrespective of the approach taken. For example,

(a) Given the combination of lots secured by all parties at the end of the primary and secondary stages, it is not possible to simultaneously satisfy both geographic and frequency range contiguity for all parties. In this case, would frequency range options still be combined or be offered separately for each region?

(b) In the case of unallocated lots, would the unallocated lots be subject to assignment in order from lowest frequency range to highest, or vice versa, or at random?

4.19 Optus therefore supports the view that where the same bandwidth allotments are awarded to the same group of bidders across multiple geographic regions, then this would be allocated on a combined basis in a single assignment round.

Minimum spectrum requirement

4.20 The ACMA has proposed to use the MSR feature to reduce the risk of bidders obtaining quantities of spectrum they consider to be unusable. The ACMA would then set a MSR cap and bidders would then be able to nominate their own MSR at a level up to that cap for each of their nominated geographic regions.

4.21 Subsection 25(3) in the Draft Allocation Determination also acknowledges that the MSR feature would only apply *"for the lots of each product in the 3.6 GHz upper band, 3.6 GHz Perth mid band or 3.6 GHz Perth higher band."*

[17] ACMA, 2018, Draft allocation instruments for 3.6 GHz band (3575-3700 MHz) metropolitan and regional lots auction, Consultation Paper, May, p.28

[18] See: Draft Allocation Determination, Schedule 1, Part 1

4.22 Optus is concerned the ACMA is only proposing to set the MSR cap at two lots (i.e. 10 MHz) which only minimises the risk to bidders winning one 5 MHz lot in areas where the MSR has been triggered. Failing to win any lots with application of the MSR rule also restricts the bidder from participating in the secondary stage for any lots in the geographic region where the bidder's MSR was triggered.

4.23 However, this also means that where bidders consider their own individual MSR to be much higher (eg. 40 MHz), then even by nominating to set their MSR at level of the MSR cap set by the ACMA, this could still result in an outcome where they could be liable to paying for spectrum holdings of 10 MHz to 35 MHz which they consider to be unusable.

4.24 As discussed in Section 2, the ability to deploy carrier sizes greater than 20 MHz is one of the main advantages 5G NR has over 4G LTE. This is best facilitated through the adoption of 5 MHz generic lots in all geographic areas with the opportunity for potential bidders to nominate a minimum spectrum requirement of 4 lots (ie. 20 MHz).

4.25 Optus reiterates that the MSR cap be set at a level no lower than four lots (i.e. 20 MHz), this does not preclude any bidder from nominating a level up to the MSR cap for any geographic region.

Auction rules

4.26 Important elements applicable in an ascending auction such as the ESMRA, include:

(a) Information policy;

(b) Activity rule;

(c) Bid withdrawal and waivers; and

(d) Assignment Stage pricing rule.

4.27 Optus comments on these auction elements below.

Information policy

4.28 At the end of each clock round in the Primary Stage, bidders are typically provided information about the demand observed during the round. This facilitates price and allocation discovery, allowing auctions to operate in an open and transparent fashion.

4.29 However, the ACMA acknowledges that ESMRA auctions have a higher risk of strategic demand reduction, and therefore "Providing detail about the exact level of excess demand can create incentives for bidders to close out the auction early. This is offset by the requirements for price discovery and transparency."[19]

4.30 As such, the ACMA proposes to only provide actual excess demand information where the excess demand is "greater than 4 lots of the product." This is confirmed in subsection 8(1)(ii) in Schedule 1 of the Draft Allocation Determination.

4.31 Optus disagrees with this approach and reiterates that revealing the exact level of demand at the end of each clock round should be provided. The provision of more

[19] ACMA, 2018, Draft allocation instruments for 3.6 GHz band (3575-3700 MHz) metropolitan and regional lots auction, Consultation Paper, May, p.29

information would enable bidders to make informed decisions on the more efficient allocation of its resources and to manage internal stakeholder expectations.

Activity rule

4.32 The ACMA proposes to use a global activity rule for the 3.6 GHz band auction and only intends to consult on the activity rule level with registered bidders after the close of applications, together with other auction parameters.

4.33 Optus considers one of the main purposes of the activity rule is to ensure auction progress, as it provides one of the key triggers for an Eligibility-reducing round.

4.34 However, given the auction structure and the role of the bid processing algorithm, Optus is concerned that an Eligibility-reducing round may occur due to partial fulfilment of bids even when a bidder has placed sufficient bids to meet their activity target.

4.35 Optus requests that the rules be amended so that bid eligibility is based on bids placed not on bids processed. If this solution cannot be accommodated, the ACMA should engage further with industry to determine an agreeable solution prior to finalising the draft instruments.

Bid withdrawals and waivers

4.36 The ACMA acknowledges that the ESMRA format does not include bid withdrawals or activity rule waivers.

Assignment stage pricing rule

4.37 The ACMA proposes to use the Nearest Vickrey core pricing rule to encourage value-based bidding and deter undesirable outcomes resulting from strategic bidding. The main features of this 'second price' rule option is summarised below:

Table 5 Summary of proposed pricing rule option for 3.6 GHz auction

Price rule	Main features	Suitability for 3.6 GHz auction
Nearest Vickrey core pricing	• Chooses assignment scenario based on core minimum pricing algorithm	• Reduces risk of undesirable outcomes • Complex link between bids and final price paid

Source: ACMA Consultation Paper, p.30

4.38 While this adopts a similar approach to the assignment stage during the Digital Dividend Auction, there are a few notable exceptions:

(a) The ESMRA auction format may include up to three distinct phases, each with different auction rules pertaining to bidding instructions and the determination of winning prices that will apply.

(b) The ACMA has proposed special auction rules to ensure a guaranteed contiguity requirement between category 1 and category 2 lots. This will limit the frequency range assignment options available to other eligible bidders.

(c) The ACMA has stated that they "do not believe that external verification of the assignment stage results is justified for this auction" on the basis that they

expect that the assignment stage bids will be a small fraction of the total bid for the auction.

4.39 Where the guaranteed contiguity requirement applies, Optus does not agree that this allocation be excluded from the pricing implications that arise during the assignment round. For example, all category 2 lots are considered to be generic for the purposes of any primary and secondary stage. However, category 2 lots are subsequently excluded from any assignment stage. On face value, this would also automatically fail any fairness test since all 'automatically allocated' category 2 lots can no longer be considered generic.

4.40 It follows that given the complexity of the auction format, and the multiple stages involved, there is merit in conducting an independent verification of the auction outcome. Optus therefore considers that to ensure industry certainty and confidence in the auction outcome, the ACMA should retain the option for external verification of the auction results before the invoice for the spectrum licences can be issued.

Application and registration process

4.41 In general, Optus supports the following proposals:

(a) Single-stage application, preference nomination and registration process

(b) Proposed application fee of $10,000

(c) Proposed use of the bank guarantee in lieu of a deposit for the eligibility payment

4.42 The value of the eligibility payment, however is yet to be determined, given that lot ratings and the dollar value of the eligibility points for those lots is not intended to be released until the Applicant Information Pack (AIP) is available.

4.43 The ACMA's indicative timeline currently proposes that its single stage application process will only be open for 28 calendar days. This may be insufficient given that lot ratings and starting prices will not be released until the start of this process.

4.44 As such, Optus is concerned that the proposed four-week period that the application stage will be open may not be sufficient.

Lot ratings and starting prices

4.45 Lot ratings provide indications of the relative value of a spectrum lot for the purpose of the auction. Lot ratings are then used to determine the maximum quantity of lots a bidder is initially allowed to bid on and provides the basis for the activity rules to be used in the primary stage of the auction.

4.46 Subsection 25(1) in the Draft Allocation Determination requires that the ACMA must set a lot rating for the lots of each product in the auction. This implies that each of the products set out at Schedule 2 in the Draft Marketing Plan will be ascribed a lot rating.

4.47 While the Consultation Paper acknowledges there may be sufficient variation in lot valuation to make generic lots unfeasible, thereby justifying the separation of the lower 15 MHz lot, it is unclear how a different lot rating to its corresponding category 2 lot, may be set that will still allow a competition limit to be applied with reduced complexity.

4.48 Optus welcomes further clarification on this matter, however notes that this issue would not exist where a simple frequency lot configuration design was applied.

Competition limits

4.49 Competition limits have the effect of capping the total amount of spectrum that a single bidder can acquire in an auction. It is currently unclear whether the ACMA will be directed to apply competition limits, or how the competition limits will be applied, for the 3.6 GHz band auction.

4.50 Subsection 10(2) in the Draft Allocation Determination provides the placeholder for the insertion of any competition limits to be applied. While, subsection 35(2)(i) recognises "the bidder's allocation limits for the lots of each product (expressed in megahertz)."

4.51 Optus is concerned this may lead to unintended consequences. For example, Schedule 2 in the Draft Marketing Plan currently defines 29 spectrum products, of which there are two products in each region and three in Perth. The current drafting suggests that:

(a) The competition limits would only apply to one spectrum product (or separately for each spectrum product) instead of all spectrum products offered over the same geographic region.

(b) It is unclear how this could be extended to include existing holdings outside the 3.6 GHz band (eg. the 3.4 GHz band).

4.52 Optus welcomes further clarification on this matter, however notes that this issue would not exist where a simple frequency lot configuration design was applied.

Payment terms

4.53 Optus considers that given the encumbered nature of much of the spectrum on offer, and a proposed licence commencement date aligned with the end of the two-year reallocation period in metropolitan area, the final payment for spectrum licences should not be required until a date closer to the licence start date.

4.54 The issue of licences only be allocated upon full payment of the winning price to the ACMA at a date closer to the licence commencement date and unencumbered. During the intervening period, the ACMA may accept security in the form of a bank guarantee for the full outstanding amount, until final payment near licence start date is required.

4.55 The form of this financial security may include something similar to the "irrevocable bank guarantee securing the secured auction amount, issued by an Australian-owned authorised deposit-taking institution (as defined in the Banking Act 1959) which is a bank, in a form approved by the ACMA" that was an accepted form of financial security during the 2017 residual 700 MHz lot auction.

4.56 For example, under this payment arrangement, the balance of the upfront winning price could be paid to the ACMA no later than 29 March 2020. It is expected that the licence would be issued shortly thereafter, close to the commencement of the spectrum licence on 30 March 2020.

Early access arrangements

4.57 Given the long reallocation periods and delayed licence commencement date may apply to some geographic areas, Optus also considers that during the intervening period, until the licence commencement date, a mechanism for early access would apply. The period of the early access is dependent on the approach adopted by the ACMA to the commencement dates.

4.58 This similarly aligns with Optus' preferred position to support Option 1a as the technical framework for the 3.6 GHz band. In addition to the comments discussed in Section 2, the ACMA acknowledges that this alternative approach to Option 1 would also identify:

> *… a delayed start to 3.6 GHz band spectrum licences to align with the date that the 3:1 downlink to uplink ratio synchronisation structure would come into effect. Under this approach, apparatus licence arrangements would be developed to support early access to spectrum for successful 3.6 GHz band bidders. These early access arrangements would have conditions ensuring coexistence with existing 3.4 GHz spectrum licences in manner suitable for those licensees.* [20]

4.59 Optus firmly believes this is the appropriate approach to follow.

Spectrum licence tax

4.60 A spectrum licence tax is levied on all spectrum licensees to recover the indirect costs of spectrum management activities such as international coordination, domestic planning, interference investigation and policy development.

4.61 The ACMA therefore proposes to amend the Spectrum Licence Tax (SLT) Determination to incorporate the designation of the 3.6 GHz band for spectrum licensing. In doing so, the ACMA proposes to amend Table 1 in the SLT Determination to include:

Frequency range	Total specified spectrum	Base amount ($)
3575-3700 MHz	125 MHz	69,180

4.62 Optus considers this approach appears in line with that applied to the 3.4 GHz band designation outlined in the March 2018 consultation paper.[21]

[20] ACMA, 2018, 3.4 GHz and 3.6 GHz band spectrum licence technical framework, Consultation Paper, May, p.10

[21] See: ACMA, 2018, Proposed amendments to the Radiocommunications (Spectrum Licence Tax) Determination 2014, Consultation Paper, March

Section 5. DETAILED AUCTION RULES

5.1 Schedules 1, 2 and 3 in the Draft Allocation Determination set out the detailed auction rules relating to each of the three stages to be carried out in the auction.

5.2 In general, Optus supports the proposed auction scheduling proposals, where

(a) The rounds of the auction are confined to working days other than recess days (that is, Monday to Friday between 9am and 5pm).

(b) There is a clear recess day between the end of the primary stage and the secondary stage; and the secondary stage and the assignment stage.

5.3 However, Optus has strong concerns over the proposal to determine eligibility points based on 'bids processed' rather than 'bids placed'. This, in effect, places the determination of eligibility in the hands of the ACMA and the auction system, rather than in the hands of bidders. This appears to be counter to the intent of spectrum auction and the eSMRA format. This issue must be remedied before the finalisation of the auction documents.

5.4 The remainder of this section sets out further comments on the auction rules as detailed in each of the individual schedules. While Optus has provided its comments based on the current drafting provided, which is based on the adoption of Option 2 for lot configuration in the Draft Marketing Plan, it is Optus' preferred position that Option 1 be applied.

5.5 Optus further submits that adopting a frequency lot configuration based on the allocation of 5 MHz generic lots in all geographic areas, including Perth would also alleviate many of the concerns being raised.

Bids placed must be the basis for eligibility points

5.6 Optus is concerned that the use of 'processed bids' rather than 'placed bids' could result in bidders accidently losing eligibility points, against the clear intent of the bidder. Such a possibility runs counter to the key concepts of an auction.

5.7 Under Schedule 1, the processing algorithm to be applied at the end of each clock round in the primary stage is a key feature of the auction format. These are contained in;

(a) Subsection 2A(1) sets out the bid queuing process;

(b) Subsection 2B describes how an increase bid may be applied; and

(c) Subsection 2C describes how a decrease bid may be applied.

5.8 Optus submits that a clear process diagram and illustrative example should be provided to ensure all bidders understand how this process works.

5.9 The Consultation Paper also highlighted Optus' earlier concern about 'accidental' loss of eligibility points due to the bid processing algorithm.[22] No outcome has been received on

[22] ACMA, 2018, Draft allocation instruments for 3.6 GHz band (3575-3700 MHz) metropolitan and regional lots auction, Consultation Paper, May, p.30

this issue however the concern remains. It is also likely that this will also depend on the activity rule level that applies in the relevant clock round.

5.10 For example, in traditional auctions, a bidder's decision to decrease bids in one area is often correlated with the decision to increase bids in another area. Partial fulfilment of a decrease bid (or multiple decrease bids) may be insufficient to allow the fulfilment of an increase bid. Further, where a bidder places multiple increase bids within the same clock round, there is no option to allow one increase bid to be prioritised over the other.

5.11 Put simply, Optus considers there should be no accidental loss of eligibility points due to the bid processing algorithm and eligibility should be calculated based on bids placed not on the bid processed.

5.12 The ACMA has confirmed that this accidental loss of point could occur.

5.13 Optus strongly disagrees that the auction process should allow the possibility of bidders accidently losing eligibility points. This possibility runs counter to the key objective of an auction – namely to allow bidders to express their willingness to pay for spectrum lots. Moving the decision on maintaining eligibility away from bidders and onto the auction system's algorithm could lead to suboptimal outcomes that do not reflect the value of spectrum to bidders. Optus is concerned that auction outcomes are likely to be distorted where bidders cannot – risk free – adjust lot bidding to its highest value lot combination without risking loss of eligibility points.

5.14 We also note that setting eligibility points on the basis of 'bids processed' appears counter to the ACMA's own reasons for adopting the eSMRA auction format. Adopting the 'bids processed' approach is likely to increase the complexity of the eSMRA format. Bidders' choices could be restricted where their ability to decide on eligibility points is moved out of their control. Bidders will need to assess the risk of involuntarily losing eligibility points against the benefits of moving between lots to express their true valuation. We highlight that bidders' willingness to achieve highest value outcomes is reduced as maintaining eligibility (or more accurately avoiding the risk of the auction manager taking eligibility points away) could be a higher priority during the auction.

5.15 Optus also notes that the use of 'bids processed' is not a prerequisite for the eSMRA format. For example, the 2017 Singapore auction, which adopted the same approach as proposed by the ACMA, retained the ability of bidders to determine their own eligibility points. The Singapore auction based eligibility on the bids placed and not on the bids processed.[23]

5.16 Optus requests that the rules be amended so that bid eligibility is based on bids placed not on bids processed. If this solution cannot be accommodated, the ACMA should engage further with industry to determine an agreeable solution prior to finalising the draft instruments.

Schedule 1 – Rules for the primary stage of the auction

Part 3 – Arrangements for primary stage

5.17 The information available for clock rounds is set out at subsection 8.

5.18 As discussed in Section 4, Optus reiterates that revealing the exact level of demand at the end of each clock round should be provided. This demand information is further

[23] ICDA, 2016, Auction Rules for Auction of 700 MHz, 900 MHz, 2.3 GHz, and 2.5 GHz, July 2016

complicated given the number of lots on offer for different products. For example, applying a threshold of 4 lots may mean that if there are only 4 bidders in the auction, the exact level of demand will never be provided for any of the category 1 lots.

Part 4 – Bidding in primary stage

5.19 The auction rules governing the validity of bids is set out at subsection 15.

5.20 Bids associated with an increase bid or decrease bid option may be associated with a price level that falls within the range of the opening price and clock price for the relevant lot. The defined price point is then used as the determiner of where the bid sits within the queue for the purposes of the processing algorithm set out at 2A(1). A maintain bid is always applied in full and taken to be at the posted price for the clock round.

5.21 Bidding remains open for all lots in each product in every clock round, until the final clock round is reached.

5.22 Optus considers it is interesting that the rule set out at 15(2) implies that the auction system will always 'place automatic decrease bids for the lots of the product in a clock round.' This means that where applicable, a bid must be submitted for all active products at the end of each clock round, or a reduction in eligibility points will occur. Optus proposes that a maintain bid should be the default bid to ensure that eligibility is maintained unless a bidder deliberately places a increase or decrease bid.

5.23 In addition, where the bidder has placed a bid that is not a valid bid, then the auction system will automatically consider that the bidder has placed a decrease bid equal to a decrease in the total lots for that product from the start demand in that clock round.

5.24 The operation of subsection15(2) therefore infers that a bidder is able to intentionally (or otherwise) place a bid to decrease a larger number of lots in a product in a single clock round. The extent of how this rule applies in conjunction with the MSR rule is also uncertain.

5.25 For example, if a bidder has start demand in a product of 6 lots, and during the given clock round has either placed no bid or does not make a valid bid, then the auction system would automatically deem that the bidder has a placed a decrease bid of 6 lots at the opening round price.

(a) If excess demand is 5 lots, then the bid is likely to be partially processed such that 1 lot remains. Total excess demand equals supply. Eligibility points would also be decreased accordingly for the 5 lots lost. Posted price for the 1 lot is equal to the opening round price.

(b) However, if the MSR for that product is also specified at 2 lots, then the decrease bid would need to be fully processed. Total excess demand less than supply. Eligibility points decreased according for the 6 lots lost.

(c) For all other bidders in that round, then assuming they continue to place a maintain bid then under 2A(2) is always taken to be equal to the posted price for that round – under this scenario it is equal to the opening price. However it is unclear what price applies where more than one posted price is made in a given clock round.

5.26 Optus is concerned that there exists a lack of certainty on what posted price applies; and considers that similar to the results observed in the recent Ofcom 3.4 GHz band auction there may be the possibility that one (or more bidders) may be awarded lots at the end of the primary stage in a single lot category at different posted prices.

Part 5 – Determining the primary winner and primary prices

5.27 The primary stage ends when there is a clock round in which excess demand is less than or equal to supply for lots of the product. After the final clock round, the auction system will determine the primary winners and primary prices for that round.

5.28 As described above, Optus is concerned that subsection 17(2) does not clarify nor remove the possibility that a different posted price may be determined for lots of a product awarded to different successful bidders (i.e. the primary winners).

5.29 Optus welcomes clarification on this matter.

Part 6 – Bringing the primary stage to an end

5.30 At the end of the primary stage, the auction manager must tell each primary winner:

(a) The total number of lots of each product allocated to the primary winner; and

(b) The total posted price for the allocated lots of each product and the primary price to be paid by the primary winner for those lots.

5.31 In terms of the allocated lots of each product awarded to other primary winners, subsection 18(2) does not require the auction manager to tell all bidders the total posted price (or total primary price) applicable to each primary winner. Instead, the auction manager is only required to disclose the total number of primary winners; and the total number of lots of each product that have been allocated to primary winners.

Schedule 2 – Rules for the secondary stage of the auction

Part 2 – Arrangements for secondary stage

5.32 During the rounds of the secondary stage, bidding on each residual lot is only available to bidders who meet the minimum spectrum requirement test for the relevant residual lot. For example, this may include any primary winner already allocated lots of that product, or any bidder who did not select a MSR for lots of that product.

5.33 Optus also notes the lack of reference to Initial Eligibility that applies for the secondary stage. For example, the Initial Eligibility that applies during the primary stage is capped based on the amount bidder nominated and secured during the application and registration process. Since allocation limits still apply for each bidder, then it follows that same Initial Eligibility should also apply for the secondary stage supported by an Eligibility deposit/bank guarantee.

5.34 The information available during rounds in this stage is set out at subsection 5. Since bidding is according to a simple clock format, the secondary winner for each residual lot is awarded to the final valid bid placed on that lot, i.e. where demand is equal to supply.

Part 3 – Bidding in the secondary stage

5.35 The auction rules governing the validity of bids is set out at subsection 12. This includes ensuring that any bids placed does not exceed any allocation limits applicable to the product. It also provides for the pseudorandom tiebreaker rule where tied exit bids occur.

5.36 Bids submitted on a residual lot must fall within the range of the opening price and clock price for the relevant lot. A continue bid is placed at the clock price, while exit bids may be placed at any price level between the opening price and clock price. Once a bidder has placed an exit bid, they will no longer be able to continue bidding on that lot.

5.37 Bidding on residual lots close once there is no excess demand on that lot. The rounds in the secondary stage only end once all bidding on residual lots have ceased.

Part 4 – Determining the secondary winners and secondary prices

5.38 The secondary stage ends when for all available residual lots, demand is less than or equal to supply for that residual lot. After the final round, the auction system will determine the secondary winners and secondary prices for that round.

5.39 As discussed in above, Optus reiterates its concern that there is no reference made to the Initial Eligibility as registered by the bidder during the application process. This suggests that a bidder could theoretically be allocated more spectrum (in terms of overall eligibility points across both the primary and secondary stages) than they had initially registered for. Optus welcomes further clarification on this matter.

Part 5 – Bringing the secondary stage to an end

5.40 At the end of the secondary stage, the auction manager must tell each secondary winner:

(a) The total number of residual lots of each product allocated to the secondary winner; and

(b) The total residual price for the allocated residual lots of each product and the secondary price to be paid by the secondary winner for those residual lots.

5.41 In terms of the allocated residual lots of each product awarded to other primary winners, subsection 18(2) does not require the auction manager to tell all bidders the residual price of allocated residual lots (or total secondary price) applicable to each secondary winner. Instead, the auction manager is only required to disclose the total number of secondary winners; and the total number of residual lots of each product that have been allocated to secondary winners.

5.42 At the conclusion of the secondary stage, the auction manager must also tell each successful bidder: the sum of the primary price and the secondary price for all the allocated lots of each product of that winner.

Schedule 3 – Rules for the assignment stage of the auction

Part 2 – Arrangements for assignment stage

5.43 During the rounds of the assignment stage, bidding is only open to bidders who have been allocated lots in the primary stage and secondary stage with the exception of:

(a) Any lots awarded in category 1;

(b) Any lots in category 2 (or category 3) where the same bidder was awarded lots in category 1 in the same geographic region.

5.44 As summarised in the Consultation Paper, “No assignment stage is required for the single 15 MHz lot, since there is only a single winning bidder. If that bidder wins lots in

the upper band, these lots are automatically assigned to the lowest place in the upper band in order to guarantee contiguity."[24] This is set out at subsection 4(3).

5.45 Optus disagrees with the introduction of special rules for specified lots.

5.46 As discussed in Section 2, Optus reiterates that lot configuration based on 5 MHz generic lots in all geographic areas, including Perth will best facilitate and support the technical, competitive and long-term objective of the global 3.5 GHz band.

Part 3 – Bidding in the assignment stage

5.47 The auction rules governing the validity of bids is set out at subsection 6. Notably, that bidders can only submit a single bid for any (or all) of the frequency range option provided through the auction system for the relevant assignment round.

Part 4 – Determining winning assignment bids and prices

5.48 After each assignment round, the auction manager must determine the winning assignment bids for each product or group of products bid for in that round according to subsection 7. The determination of assignment prices is set out at subsection 8, and effectively reflect the application of a second price rule.

Part 5 – Bringing the assignment stage to an end

5.49 At the end of each assignment round, the auction manager must tell each winning assignment round bidder:

(a) The frequency ranges assigned to lots of a product allocated to the bidder in the primary stage or secondary stage; and

(b) The assignment price for the frequency ranges assigned.

5.50 The auction manager must also disclose to all bidders the assignment price for each winning assignment bid in an assignment round.

5.51 This also infers that the result of each assignment round is provided prior to the start of the next assignment round.

5.52 The assignment stage ends when all available assignment rounds have concluded.

[24] ACMA, 2018, Draft allocation instruments for 3.6 GHz band (3575-3700 MHz) metropolitan and regional lots auction, Consultation Paper, May, p.28