

The logo for Optus, consisting of the word "OPTUS" in a bold, teal, sans-serif font.

Submission in response to  
ACMA Consultation Paper

Reconfiguring the  
890-915 / 935-960 MHz  
band

Public Version

March 2017

## INTRODUCTION

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1. Optus welcomes the opportunity to respond to the Australian Communications and Media Authority's (ACMA) Consultation Paper on "*Reconfiguring the 890-915 /935-960 MHz band*" (900MHz band) (Consultation Paper).
2. Optus' holds 2 x 8.4MHz in the 900MHz band via apparatus licensing arrangements that provide national coverage for 2G and 3G networks. Optus has announced it will commence the shutdown of its 2G network from 3 April 2017.
3. It is Optus' view that the 900MHz band is critical 'low band' spectrum that needs to be retained for future voice and mobile broadband. 900MHz spectrum is of particular importance for continued regional voice coverage and to support the expected future growth in demand for mobile broadband.
4. Shifting licencing arrangements from apparatus to a spectrum licence format will reduce uncertainty and encourage long term investment and promote the development of new technologies in this band.
5. The Consultation Paper provides a set of reform options for future arrangements in the 900MHz band for industry to respond. However, many key detailed aspects of the arrangements need to be agreed upon before final comments can be provided on an optimal allocation process.
6. Optus strongly recommends the ACMA defer any decision on a preferred reform option and implementation timeframe until after the imminent auction of unsold 700MHz lots (Auction). At this time, Optus recommends the ACMA commit to re-engage with 900MHz incumbent licence holders to seek an updated view on their preferred reform option and implementation timing for reconfiguration of the 900MHz band.

## PREFERRED TIMING

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7. Optus submits that the decision-making process to reconfigure the 900MHz band should not occur until after the completion of the Auction. After which, Optus recommends the ACMA re-engage with 900MHz incumbent licence holders to seek an updated view on their preferred reform option and implementation timing for configuration of the 900MHz band.
8. Optus has previously stated its support for the alignment of allocation processes for sub-1GHz bands in its submission in response to the Department of Communication and the Arts' Consultation Note "*Exposure Draft Radiocommunications (Spectrum Licence Allocation – Residual 700MHz Band One) Direction 2016*". The principles Optus outlined in that submission remain relevant for the ACMA to consider for all sub-1GHz bands, including the 900MHz band. These principles are:
  - (a) A recognition of developments in the significance of 'low band' spectrum for both current and future IMT use;
  - (b) That consideration of future use of both 700/900MHz should be made in total as these two low band spectrum are inextricably linked; and
  - (c) The ACMA must provide an opportunity for mobile network operators to assess their low band spectrum requirements as part of a single process.

9. Given the decision to deal separately with the allocation of unsold 700MHz and the reconfiguration of the 900MHz bands, industry is now engaged in two linear processes. While we are cognisant of the rationale that has eventuated in breaking these activities into separate programs, the fact remains that Optus' preferred way forward on the 900MHz band is dependent on final allocation of the 700MHz band. Use of low band spectrum in these bands is inextricably linked.
10. The outcome of the Auction will have a bearing on Optus' plans for its 900MHz holdings and hence its views on the options presented. Optus will review its position once the auction results have been finalised. At this stage we are therefore unable to provide a fully informed view on the optimal reconfiguration of the 900MHz band; or a view on preferred timing of such changes.
11. It is therefore critical that the ACMA defer any decision on the outcome of the Consultation Paper until the results of the Auction are known.

## PRELIMINARY VIEW ON PREFERRED OPTION

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12. Notwithstanding Optus' position that the final decision on a preferred approach to reconfigure the 900MHz band should be informed by incumbent licence holders' views once the outcome of the Auction is known; we make some preliminary views on our preferred option below.
13. To that end, Optus observes that:
  - (a) 900MHz spectrum is currently used to support both 2G and 3G mobile networks and a small number of 4G sites;
  - (b) While 2G networks are being retired, 3G voice networks will continue for the foreseeable future and 900MHz spectrum forms the basis of these networks;
  - (c) The then Minister<sup>1</sup> recognised the efficiency benefits of declaring a 'class of services', that is, a defined set of expiring spectrum licences to be reissued to existing licences in the public interest as per 82(3) of *Radiocommunications Act 1992*; and
  - (d) An efficiently allocated 900MHz band will be crucial to ensure there is sufficient mobile network infrastructure to support regional mobile voice services and to support future strong forecast growth in demand for mobile broadband.
14. These observations are discussed in more detail below.

### Use of 900MHz spectrum

15. Optus currently uses its 900MHz spectrum in its 2G and 3G networks. These networks form the basis of Optus' mobile voice services. While all three Australian mobile network operators are in the process of or have shut down their 2G networks, it is clear that the 900MHz spectrum band will remain an important component of the spectrum mix to support existing and future demand for mobile voice and broadband services in Australia.
16. Optus has announced it will commence the shutdown of its 2G network from 3 April 2017 and has ongoing plans to optimise its network and to enable newer technologies such as Optus' 4G Plus network.<sup>2</sup>

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<sup>1</sup> <http://acma.gov.au/Industry/Spectrum/Radiocomms-licensing/Spectrum-licences/expiring-spectrum-licences-i-acma>

17. The 900MHz band is key spectrum for Optus' 3G network. The 3G network is key to providing national voice coverage. Optus' 3G mobile network covers 98.5% of the population and is dependent on continuing access to its 900MHz spectrum assets. Post 2G shut-down, the 3G network will be the network over which voice services are provided for the majority of customers. Certainty over access to this spectrum is crucial to ensure the efficient ongoing operation of Optus' mobile voice network.
18. **[Commercial in Confidence]**
19. **[Commercial in Confidence]**
20. **[Commercial in Confidence]**

### Efficiency benefits of renewing existing holdings

21. The reconfiguration of the 900MHz band would enable more efficient use of the band. However, it is also important to recognise the significant levels of investment by incumbent licence holders to support the continued use of 900MHz for 3G voice services once 2G services are switched off. As noted above, the 900MHz band is the key 3G band for Optus, now and into the future – especially outside metro areas.
22. Optus agrees with the ACMA's assessment that reconfiguration of the 900MHz band raises similar public policy issues to those recently faced in determining whether to reissue expiring spectrum licences to the same licensee under subsection 82(3) of the *Radiocommunications Act 1992*. That is:

*... whether it is preferable to re-issue (administratively priced) long term licences for mass-market mobile broadband services to the present holders of the spectrum or to allow the existing licences to expire and auction new long term licences to the highest bidder.*<sup>3</sup>
23. Incumbent licence holders have held apparatus licences for 900MHz spectrum for 25 years. These have been renewed on a continual basis during this time. It is under this licensing regime that operators have invested billions of dollars in their mobile networks. It is a reasonable expectation that these licences would continue to be allocated to incumbents to enable the ongoing operations of existing networks.
24. Further, as discussed above, removal of 900MHz spectrum from Optus' mobile network would materially impact mobile voice services, especially in locations outside metro areas. Optus considers that the precedent set by the Ministerial decision to reissue expiring spectrum licences to the same licensee on public interest grounds should be replicated with respect to the 900MHz band.
25. Given the importance of 900MHz for national 3G networks, especially voice services in regional areas, there are material efficiency, competition, and consumer benefits from renewing sufficient 900MHz spectrum to enable continued use for national 3G networks. Optus acknowledges that the ACMA has previously recognised the efficiency benefits from renewal and avoiding leaving stranded a large number of spectrum assets. Any process to realign the 900MHz band should take into account the need to ensure continuity of service.

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<sup>2</sup> <https://yescrowd.optus.com.au/t5/Blog/2G-Network-Closure-Update/ba-p/178495>

<sup>3</sup> ACMA, Consultation Paper, p.23

## Growth in demand requires efficient use of 900MHz

26. There is clear evidence both globally and within Australia that demand for mobile data continues to increase exponentially. Ericsson, for example, has recently identified mobile data as the key driver of global mobile subscriber growth.<sup>4</sup> The ACMA's latest research indicates that the volume of data downloaded over mobile handsets has "*increased by 69 per cent between the June 2015 and June 2016 quarters*".<sup>5</sup>
27. Such growth in demand requires mobile network operators to efficiently use mobile broadband spectrum.
28. The ACMA, as the manager of radiofrequency spectrum in Australia, is also directed under the objects of the *Radiocommunications Act 1992* to ensure spectrum is allocated efficiently and for public benefit.<sup>6</sup> The efficiency criteria is also referenced in the ACMA's spectrum management principles that include a requirement to allocate spectrum to the highest value use or uses.<sup>7</sup>
29. Optus continues to support efficiency as a key criteria in spectrum allocation decision making processes.
30. Optus retains its support for the 900MHz band to be reconfigured into 5MHz blocks. Allocating spectrum in contiguous lots as part of the Digital Dividend Auction was considered the best approach to promote the efficient allocation of spectrum.
31. To that end, it is vital for the future efficient use of spectrum that 900MHz band be reconfigured for continual and more efficient use for existing 3G networks and to enable its use for 4G and other mobile broadband technologies.

## The merits of Option Four

32. We understand Option Four would comprise a two-stage process which would involve:
  - (a) An initial trading period between incumbent licensees;
  - (b) The traded apparatus licences being converted to 15 year spectrum licences at a pre-determined price; and
  - (c) If this trading process was to be unsuccessful, the option to proceed with clearance and reallocation via a price-based allocation will be considered.
33. While any final Optus view on a preferred approach is dependent yet to-be-determined details, including the outcome of the Auction, at this preliminary stage Optus considers that the ACMA's Option Four appears to be the most beneficial to consumers, competition and operators, because:
  - (a) An initial trading period recognises incumbents rights and would enable existing 900MHz licence holders to negotiate to retain some, all or more of their existing holdings;

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<sup>4</sup> Ericsson Mobility Report, November 2016, p8. <https://www.ericsson.com/mobility-report/future-of-mobile-technology-usage-by-region>

<sup>5</sup> <http://www.acma.gov.au/theacma/communications-report-2015-16>

<sup>6</sup> *Radiocommunications Act 1992*, Part 1.2, Section 3(a)

<sup>7</sup> (<http://www.acma.gov.au/Industry/Spectrum/Spectrum-planning/About-spectrum-planning/australian-spectrum-management-principles-spectrum-planning-acma>)

- (b) An initial trading option is more likely to reduce costs and outages for operators by allowing incumbents to prevent unnecessary changes in frequency used for existing 3G services; and
  - (c) Spectrum lots that are not traded could then be allocated using a price-based method.
34. There are other technical benefits to permitting initial trading between existing licensees, as incumbents are best able to manage interference issues at the edges of the 900MHz band. For example the bottom of the 900MHz band is subject to interference from Telstra 850MHz equipment which is best managed when allocated to the same operator.
35. Other options that propose a more mandated allocation, particularly Option Three, will create difficulties to efficiently allocate the remaining spectrum lots should one or more of the incumbents wish to acquire a 10MHz contiguous block which, in turn, increases the risk of spectrum fragmentation.
36. Option Four appears to best promote the assessment objectives outlined in the Consultation Paper, namely it promotes:
- (a) The highest value use for spectrum as it enables operators to negotiate to maximise value and where agreement cannot be achieved, spectrum will be allocated through market based processes.
  - (b) Investment and innovation by;
    - (i) avoiding stranding several thousand base stations that currently use existing 900MHz licences;
    - (ii) promoting certainty of tenure through spectrum licences enabling more investment in 3G and 4G technologies while maintaining existing 3G services; and
    - (iii) enabling more efficient use of the band to enable greater investment in 3G and 4G networks.
  - (c) Competition by enabling continual use of 3G networks, other than through the 850MHz band, thereby ensuring regional customers have a choice of competing networks and by ensuring excess spectrum is allocated through market based processes. **[Commercial in Confidence]**
  - (d) Consumer convenience through ensuring existing 3G network using 900MHz will continue into the future and will avoid customers having to upgrade devices or experience network blackspots.
  - (e) An appropriate rate of return through the use of market based allocation processes.

### **Further discussion on preferred option needed**

37. It is clear there is still significant work to be done to determine the settings best placed to achieve a trading environment as mooted in the proposed Option Four. As the Consultation Paper suggests, further clarification is needed to ensure there is a clear understanding across all parties of what will be perceived to be a successful trading outcome.
38. As stated above, due to the upcoming Auction, Optus is not in a position to provide comments on the detail of the design of any allocation process based on the broad concepts as described as Option Four in the Consultation Paper.

39. Further work is required to determine the criteria that would be used to trigger a reallocation process after the initial negotiation period. For example, incumbents would need assurances from the ACMA that there would be no further price-based allocations if incumbents were able to trade successfully amongst themselves.
40. The ACMA would also need to further consult on the pricing for spectrum licences before secondary market negotiations commence. The final price could either be set before trading arrangements take place; or the market could be left to use a “market determined willingness to pay”.
41. There would also be commercial costs to changing bands that may be best catered for via trading arrangements. For example, changing channel assignments (frequencies) is likely to create additional costs, involving large scale network parameter changes. The outcome of the trading period may result in incumbents incurring different reconfiguration costs. The fact that different reconfiguration costs will exist should be factored into the assessment of an administratively determined price for the conversion of apparatus to spectrum licence.
42. Further detail would also be required where the initial trading process achieves partial arrangements where only a portion of the residual MHz is successfully traded. For example, it is foreseeable that existing users would agree to maintain at least 5MHz of existing 900MHz to ensure that existing networks can continue under the new regime. Also, any price-based allocation used for the second stage of this option would need to take into account the investment made during the trading process.
43. It may be that the optimal reallocation process involves three steps:
  - (a) Initial trading period to allow existing rights holders to negotiate for 1-2 years;
  - (b) If agreement cannot be reached for full band, allocate 2 x 5MHz to each existing user;
  - (c) Allocate remaining lots in the 900MHz band through market based process.
44. Optus welcomes the opportunity to explore these issues and options in greater detail once the Auction is completed.