

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

Submission in response to
Department of Communications
Consultation Note

Exposure Draft
Radiocommunications
(Spectrum Licence
Allocation – Residual
700MHz Band One)
Direction 2016

Public Version

June 2016

EXECUTIVE SUMMARY

1. Optus does not support the draft *Radiocommunications (Spectrum Licence Allocation – Residual 700MHz Band One) Direction 2016 (draft Ministerial Direction)*. Optus recommends that the Minister:
 - (a) Declines the proposal to allocate 2 x 10MHz of 700MHz spectrum in the manner and on the terms proposed by the applicant.
 - (b) Does not proceed further with the draft Ministerial Direction.
 - (c) Requests that ACMA to commence a new process to provide advice for options for the allocation for mobile use of the total tranche of un-sold digital dividend spectrum and other sub-1GHz spectrum subject to re-planning (e.g. 900MHz). In preparing that advice, the ACMA should undertake public consultation and have regard to the relevant current and prospective market and technology context.
2. Optus is concerned that the draft Ministerial Direction has been prepared in haste and appears to rely on factual errors. The release of the consultation paper and the lack of adequate prior consultation with relevant stakeholders, including other potential purchasers of the spectrum, merits full reconsideration of the process.
3. On the information available, it appears that the draft Ministerial Direction is the output of a process in which certain relevant considerations may not have been adequately taken into account and undue weight has been given to other matters. Accordingly, it should be reviewed to provide a more sustainable basis for Ministerial decision-making about the allocation of significant spectrum assets.
4. Optus has the following concerns with the draft Ministerial Direction and the process which generated it:
 - (a) The outcome of the draft Ministerial Direction appears inconsistent with the object of the *Radiocommunications Act 1992*;
 - (b) The process to generate the draft Ministerial Direction is open to speculation that it lacks impartiality by excluding all but one industry participant;
 - (c) The draft Ministerial Direction relies on findings or statements that are not based on facts and in some instances based on incorrect facts;
 - (d) There is insufficient evidence that reasonable enquiries have been made to ascertain the relevant facts nor has full and proper consideration been given to relevant issues;
 - (e) The process adopted to generate the draft Ministerial Direction appears to lack procedural fairness; and
 - (f) The method adopted to estimate shortened licence value appears flawed.
5. While the draft Ministerial Direction is flawed, Optus does support the principle that unused 700MHz lots should be allocated to maximise the overall public benefit, including achieving the highest value use. Optus does not consider that the highest value use can be achieved or demonstrated by a ‘behind-the-door’ allocation to a single party at a price that appears, on the face of it, to be below current market prices.

6. Optus supports the allocation of the un-sold 700MHz lots through a new equitable, transparent, and evidence-based process, undertaken by the ACMA. Such a process would:
 - (a) Test the assumptions in the Consultation Note;
 - (b) Ensure that the allocation is consistent with longer term spectrum planning frameworks for mobile broadband adopted by the ACMA and its Spectrum Management Principles;
 - (c) Provide advice for options for the allocation for mobile use of the total tranche of un-sold digital dividend spectrum and other sub-1GHz spectrum subject to re-planning (e.g. 900MHz); and
 - (d) Invite expressions of interest from all interested parties.
7. Finally, Optus notes that there is no justification for the compressed timeframes proposed in the consultation process for the decision-making associated with the draft Ministerial Direction.
8. The draft Ministerial Direction proposes that spectrum licences for un-sold 700MHz lots would not commence until April 2018. Therefore, there is ample time for the Government to adopt an alternative and proper process which ensures it maximises the overall public benefit of its use. Such an allocation process should be determined after considering options which have been developed having proper regard to movements in the market since the digital dividend auction and advancements in the state of mobile technology, including 5G, and the burgeoning interest in spectrum from participants driving the ecosystem which supports the 'Internet of Things'.

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DIRECTION INCONSISTENT WITH OBJECT OF RADCOMS ACT

9. The draft Ministerial Direction is proposed to be made under sections 60 and 291 of the *Radiocommunications Act 1992 (the Act)*. As such, the draft Ministerial Direction must have regard to the objectives of the Act.
10. Optus has concerns that the draft Ministerial Direction has not given due regard to the following objectives of the Act,¹ specifically it fails to:
 - (a) Maximise, by ensuring the efficient allocation and use of the spectrum, the overall public benefit derived from use;
 - (b) Provide a responsive and flexible approach to meeting the needs of users of the spectrum;
 - (c) Encourage the use of efficient radiocommunications technologies so that a wide range of services of an adequate quality can be provided; and
 - (d) Provide an efficient, equitable and transparent system of charging for the use of spectrum.

Efficient use of spectrum

11. The draft Ministerial Direction is unlikely to maximise the public benefit from use of spectrum through efficient allocation of spectrum. The public benefit is maximised where spectrum is allocated to the highest value use or uses.²
12. The process used to generate the decisions embodied in the draft Ministerial Direction is not founded on reasonable or sufficient enquiries into whether the proposed allocation would deliver the highest value use. No relevant evidence is presented that parties other than Vodafone Hutchison Australia (VHA) are not willing to purchase the un-sold spectrum. Optus notes the reference to a consultation process the ACMA undertook in 2014. This evidence is out-of-date and not relevant given the subsequent market developments. This is discussed in more detail later from paragraph 63.
13. Further, no analysis is provided demonstrating that a competition limit of zero applied to Optus promotes the efficient use of spectrum. Optus only has 2 x 10MHz of sub-1GHz 4G spectrum and would benefit in a similar manner to VHA from acquiring additional sub-1GHz spectrum. As such, providing Optus an opportunity to acquire the unused 700MHz lots would also result in an efficient use of spectrum.
14. It appears that the draft Ministerial Direction relies on out-dated and at times incorrect assessments of facts, as outlined in the Consultation Note. The Consultation Note fails to demonstrate reasonable enquiries were made as to the current state of the market, technology, and the likely demand for sub-1GHz spectrum. The decisions proposed in the draft Ministerial Direction may not promote the efficient use of spectrum.

Responsive and flexible approach to meet needs of users of spectrum

15. It is not clear that the process adopted to develop the draft Ministerial Direction considered providing a responsive and flexible approach that can meet the needs of

¹ *Radiocommunications Act 1992*, s.3

² See Spectrum Management Principle 1, 'Allocate spectrum to the highest value use or uses' at <http://www.acma.gov.au/Industry/Spectrum/Spectrum-planning/About-spectrum-planning/principles-for-spectrum-management>

users of spectrum or those with potential demand for this spectrum. The draft Ministerial Direction was developed in response to the needs of one spectrum user, and has failed to enquire fully as to whether there is demand or unexpressed demand for the spectrum by other parties.

16. The process adopted lacks flexibility, as the draft Ministerial Direction imposes rigid rules barring other parties from engaging in the sale process. It is not apparent that the draft Ministerial Declaration is sufficiently flexible to allow the participation of other interested parties in response to the consultation process.

Encourage use of efficient Radiocommunications technologies

17. The draft Ministerial Directions fails to encourage the use of efficient radiocommunications technologies as it would result in an isolated 2 x 5MHz lot of 700MHz spectrum in the middle of the band. This may result in a non-contiguous allocation of the lot.
18. The proposed 2 x 10MHz spectrum allocation to be assigned within the un-sold 700MHz lots relates to spectrum from the 738MHz to 748MHz and 793MHz to 803MHz frequency range. This leaves a residual 2 x 5MHz lot between the lots already allocated to Telstra and the proposed VHA allocation. This is a contentious issue for Optus.
19. To illustrate, the Digital Dividend Auction used a Combinational Clock Auction format that precluded options for Optus to relocate to a different position in the 700MHz band, even though un-sold lots were vacant at the time. Instead, the ACMA opted to pursue an allocation approach where successful bidders' spectrum allocations were assigned contiguously. Allocating spectrum in contiguous lots was considered the best approach to promote the efficient allocation of spectrum. If the draft Ministerial Direction proceeds then the fact that a residual 2 x 5MHz lot will exist in the middle of the band will be contrary to the objects of the Act with regard to efficient allocation and the policy approach adopted at the Digital Dividend Auction.
20. There is no evidence to suggest that reasonable enquiries were made or a full and proper consideration was given to the impacts of not incorporating an orphan 2 x 5MHz un-sold lot in the draft Ministerial Direction.

Efficient, equitable and transparent system of charging

21. The draft Ministerial Direction fails to promote the efficient, equitable and transparent system of charging for the use of spectrum.
22. First, the draft Ministerial Direction lacks transparency about the methodology used to develop proposed spectrum access charges. Specific concerns regarding the methodology used to develop spectrum access charges are discussed in paragraph 82 below. In summary, the method proposed:
 - (a) Is novel and untested in the context of commercial spectrum awards;
 - (b) It appears derived from previous approaches unrelated to varying spectrum licence lengths; and
 - (c) Has not been fully explained, with limited justifications being presented for consultation 20 days after the consultation period begun.
23. Second, the draft Ministerial Direction sets a dangerous precedent that is likely to undermine future spectrum auctions. It creates a risk that inefficient and inequitable price setting options will apply to future spectrum allocation processes. It fails to provide a

means of equitably recognising the different commercial risks of auctions processes and uncontested off-market sales.

24. If adopted, the draft Ministerial Direction will create an expectation that un-sold lots that were previously subject to market-based allocation (e.g. auction), would be available at a future date and at the same, or better, terms determined at the time of the original allocation process. This may undermine future market-based allocations (in particular, spectrum auctions) by reducing the incentive for existing operators to participate when it could make an offer to Government post-allocation on previously determined assumptions.
25. Third, the use of s.60 allocation instruments in the proposed circumstances is neither efficient, equitable or transparent. While the process for allocating spectrum at a pre-determined price is not unprecedented, this is generally only understood in the context of an auction allocation instrument where due rigor has been applied in establishing the final s.60 Allocation Instruments. Even under this approach, an allocation based on a pre-determined price only applies in the event there is only one applicant for the spectrum lots on offer, and where it has been established that demand is less than or equal to supply.
26. As expressed above, and discussed further below, no reasonable enquiries appear to have been made to ascertain the relevant facts on the current demand for the un-sold 700MHz lots – or that full and proper consideration was given to the appropriateness of using s.60 instruments in the current market context.

PROCEDURAL PROBLEMS IN MAKING THE DIRECTION

27. Optus is concerned that the process adopted, and the justifications presented in the Consultation Note, gives rise to substantial procedural concerns. There are several reasons for this concern:
 - (a) The proposed allocation is unprecedented.
 - (b) The draft Ministerial Direction was developed in response to an unsolicited request from VHA and appears to discount the multi-year planning process undertaken in determining previous allocation approaches by the Department, the ACMA and industry.
 - (c) The draft Ministerial Direction was developed without consultation with other interested parties, even though it is reasonable to contemplate that other parties would have an interest in the allocation.
 - (d) **[CiC]**
 - (e) The imposition of a spectrum cap of zero on all other parties prevents the potential for an efficient and equitable allocation. The only reason offered in the Consultation Note is “to give effect to the Government’s decision”. No reasonable reason has been provided to justify a competition limit of zero on Optus. A review of facts make it clear that Optus is in a similar position to VHA vis-à-vis current allocations of sub-1GHz 4G spectrum. Further, VHA claims to have a larger 4G network than Optus. No reasonable enquiries were made to ascertain the relevant facts to justify this claim nor has full and proper consideration been given to this issue.

- (f) The draft Ministerial Direction relies upon the claim that there is no demand for the un-sold 700MHz lots other than the VHA request. There is no evidence to suggest that reasonable enquiries were made to ascertain the relevant facts with regard to current market demand or that full and proper consideration was given to this issue.
 - (g) The method to ascertain the price limits is flawed, and provided without;
 - (i) full justifications of the reasons for the adoption of the method in the current context; and
 - (ii) reasons for the values of the variables adopted.
28. The current Ministerial Direction process is less than optimal. The current approach should be abandoned and a new process started with the involvement of industry to determine a more optimal method of allocating available sub-1GHz spectrum.

DIRECTION LACKS EVIDENTIARY BASE

29. The Consultation Note makes several statements of facts that are relied upon as a basis for the making of the draft Ministerial Direction. Optus considers that these statements are not based on correct and up-to-date facts. A review of the Consultation Note and process description demonstrates that little effort appears to have been made to ascertain the relevant facts. Specifically, Optus is concerned that:
- (a) Market competition analysis is based on out-dated and incorrect facts; and
 - (b) Technology analysis is based on evidence that is at least three years old and fails to recognise significant recent market developments.
30. Many of the observations and statements made in the Consultation Note directly contradict, or fail to refer to, the latest information published by the ACMA and ACCC.

Out-dated market competition analysis

31. The Consultation Note refers to:
- (a) 2013 market shares that do not reflect the current nature of competition in the mobile market; and
 - (b) The causal link between un-sold 700MHz lots and level of competition.
32. It is not reasonable to rely on out-dated data as a justification to administratively allocate spectrum without consideration of the demand by other parties.
33. Retail market shares at December 2015 shows VHA at 20%; Optus at 31%; and Telstra at 43%.³ With the VHA mobile base growing strongly, having a net addition of mobile subscriber near equivalent to Telstra for first half of FY16.⁴

³ Shaw and Partners, Structure & Competitions in the Telco Industry, 24 May 2016, p.2

⁴ UBS, Australian Telco Sector Who's winning in mobile?, 23 February 2016, p.2

34. Moreover, VHA's blended average revenue per user (ARPU) is the highest in the industry with a monthly ARPU of \$46,⁵ compared to \$44 for Optus⁶ and \$43 for Telstra.⁷
35. These facts do not support the position adopted in the Consultation Note.

VHA market position not due to lack of 700MHz spectrum

36. While VHA does have the lowest market share, it is double the share stated in the Consultation Note. Further, no reasons are provided justifying the link between VHA's current market share to its current allocation of sub-1GHz spectrum.
37. The Consultation Note fails to take into account the circumstances around the VHA network issues which drove VHA's market share decline since 2010. At June 2010, VHA's market share was 27%⁸. At June 2014 it was 18%.⁹ The ACCC acknowledged that this drop in VHA market share "resulted from network issues it experienced in late 2010"¹⁰ and issues related to the merger consolidation.¹¹
38. Recent evidence supports this observation. VHA's market share has increased by 100,000 since 700MHz spectrum became operational in January 2015.
39. The statement in the Consultation Note that allocation of the un-sold 700MHz spectrum will assist VHA's low market share¹² is an incorrect conclusion that cannot be supported by evidence. It appears that the Consultation Note has failed to take this relevant consideration into account.
40. In addition, the Consultation Note does not contain sufficient evidence to justify the claim that the allocation of 700MHz to VHA would increase competition; network quality; lower prices; or otherwise benefit consumers.

VHA 4G network coverage equivalent to competitors

41. The Consultation Note also states that access to an additional 2 x 10MHz of 700MHz spectrum would enable VHA to improve coverage of services. It is not clear how this is expected to occur given that the proposed spectrum licence does not include a coverage target as a licence condition.
42. The extent of claimed 4G network population coverage is shown below:
 - (a) Telstra – 98%¹³
 - (b) Optus – 94%¹⁴

⁵ Hutchison Australia, Preliminary final report for the year ended 31 December 2015, p.7

⁶ Singtel, Q3FY16 Historic Summary

⁷ Telstra, 1H16 Results Supporting Material

⁸ ACCC telecommunications reports 2010–11

⁹ ACCC telecommunications reports 2013-14

¹⁰ ACCC telecommunications reports 2013-14, p.31

¹¹ ACCC, Competition limits advice for 1800 MHz spectrum in regional areas, May 2015, p.7

¹² Department of Communications, Exposure Draft Radiocommunications (Spectrum Licence Allocation—Residual 700 MHz Band One) Direction 2016, Consultation Note, p.3

¹³ Estimate for June 2016, Telstra, Investor Day Presentation, 2 May 2016, p.6

¹⁴ Singtel, 2016, Management discussion and analysis of financial condition, results of operations and cash flows for the fourth quarter and year ended 31 March 2016, p.31

(c) VHA – 95%¹⁵

43. The Consultation Note does not refer to the April 2016 announcement of VHA that it has re-farmed its 850MHz for 4G use, resulting in 95% population coverage.
44. It is not clear that an additional 2 x 10MHz of 700MHz spectrum would improve VHA's 4G coverage.
45. Moreover, it is not the lack of spectrum which limits VHA's mobile network coverage (after all, 850MHz is more than a suitable substitute). VHA itself acknowledged it was lack of network investment not spectrum that caused its network issues.¹⁶

Out-dated spectrum technology analysis

46. The Consultation Note fails to update assessments made in preparation for the 2013 Digital Dividend auction setting out what was offered for sale, how it would be sold, for what use, when, and for what price. The assumption that the conditions of the 2013 Digital Dividend Auction can be replicated ignores the fact that key inputs that determined the allocation approach have changed.
47. No inquiries were made as to market demand for spectrum in 2016, or the current expectation for future spectrum demand. The Consultation Note refers to the 2014 ACMA review and the observation that there was no market demand.¹⁷ Such a statement is first, incorrect, and second, out-of-date and does not represent that state of demand in 2016 for spectrum in 2018.
48. **[CiC]**

Interference analysis

49. No technical due diligence has been undertaken on whether the proposed location of the 2 x 10 MHz allocation to VHA within the available un-sold 700MHz lots (the two 5MHz lots highest in frequency) has the potential to cause interference with incumbent users, and whether the lower two un-sold 5 MHz lots would reduce the interference risk.
50. The Consultation Note does not provide any explanation why the un-sold lots at 738-748MHz to 793-803MHz band were chosen to be allocated as opposed to the un-sold lots at 733-743MHz and 788-898MHz. Optus would expect a technological or interference assessment would have been undertaken.

700MHz used for 5G and IoT

51. The Consultation Note does not refer to the significant technological change that has occurred in the three years since the Digital Dividend Auction with respect to potential uses for 700MHz spectrum beyond 4G LTE.
52. For example, technical standards that will govern narrow band Internet of Things (IoT) that were finalised in 3GPP in March 2016¹⁸ will allow commercial narrow band IoT

¹⁵ Vodafone, Media Release, Vodafone 4G network now reaches almost 23 million Australians, 4 April 2016. http://www.vodafone.com.au/aboutvodafone/mediacentre/mediareleases/160404_Vodafone_4G_network_now_reaches_almost_23_million_Australians.pdf

¹⁶ <http://www.news.com.au/finance/business/how-did-vodafone-become-vodafail/story-fnda1bsz-1226496461128>

¹⁷ Department of Communications, Exposure Draft Radiocommunications (Spectrum Licence Allocation—Residual 700 MHz Band One) Direction 2016, Consultation Note, p.2

¹⁸ 3GPP – 'Narrow Band IOT' <http://www.3gpp.org/news-events/3gpp-news/1733-niot>

product to be released in the second half of 2016 and have the potential to influence, as discussed below, lot size, the basis of geographic allocation, etc.

53. Updated assessments of both technical standards and technological changes in relation to un-sold 700MHz lots has not been undertaken. No consideration has been given to whether the outcome of these assessments would impact the parameters set in relation to lot size and national allocation.

Population variable out of date

54. No reasons have been provided on why a three-year-old population figure – as at June 2013 – has been used to calculate the proposed spectrum access charge for a licence that is proposed to commence 1 April 2018.

55. A population figure of 22,872,578 has been used to calculate the MHz/Pop spectrum access charge that the Consultation Note states this:

... was the projected population determined by the ACMA when setting the initial price used for previous allocation of spectrum licences in the 700MHz band in 2013

56. This does not align with the practice adopted by the ACMA and the Government in relation to recent allocation and renewal processes; where the population variable applied is determined at the time the licence is issued. For example, the recent regional 1800MHz spectrum auction (which commenced in November 2015), the reserve price was based on ACMA estimated population as at September 2015.
57. It is not appropriate to use 2013 population figures – which are already three years old and will be five years old by the time the licence commences – that give a 5% discount on the price.

CURRENT PROCESS LACKS PROCEDURAL FAIRNESS

58. The Consultation Note states that the Government has not received any expressions of interest in the un-sold spectrum since the Digital Dividend auction. It is also noted that the ACMA stated, as in the case for unallocated spectrum generally, interested parties may provide expressions of interest in un-sold spectrum.¹⁹
59. Optus does not agree with the implication that the industry had an expectation that future sales of the un-sold 700MHz lots would be allocated through unsolicited expressions of interest.
60. Optus was not aware that it was the Government's or the ACMA's intention to sell un-sold 700MHz lots to any party that made an offer via a process that replicated the conditions and allocation framework of the Digital Dividend auction.
61. Moreover, interested parties have been in constant contact with the ACMA in relation to the status of the un-sold 700MHz lots – this at the minimum shows ongoing interest in the spectrum by parties other than VHA.

¹⁹ Department of Communications, Exposure Draft Radiocommunications (Spectrum Licence Allocation—Residual 700 MHz Band One) Direction 2016, Consultation Note, p.2

62. In fact, claims made in the Consultation Note directly counter the legitimate expectations of interested parties created by specific Ministerial and ACMA actions post the Digital Dividend auction. This is outlined in more detail below.

Legitimate expectation created by the Minister and ACMA

63. The 2013 Digital Dividend Auction and the 2015 Regional 1800MHz Auction were positioned as a sale of a 'significant government asset', yielding combined returns to the taxpayer of over \$2.5 billion.²⁰
64. The Minister and the ACMA have set a legitimate expectation that the process to allocate spectrum – correctly categorised as the sale of a significant government asset – is designed with reference to the outcome of current market inquiries where:
- (a) Industry is consulted as part of an open and transparent policy development process with the Government, the ACMA (either on its own initiative or at the direction of the Minister), and the ACCC on:
 - (i) an appropriate allocation approach;
 - (ii) changes in technology, network deployment techniques and technical standards that may impact how the spectrum will be used in market and therefore influence how the spectrum asset is packaged for sale;
 - (b) Allocation processes are run on a competitive basis;
 - (c) Parameters of an allocation process, including policy approach to competition caps, are assessed post completion of current market inquiries; and
 - (d) All market participants are provided an opportunity to participate in a competitive allocation process and consider their investment options.
65. The 2013 Ministerial Directions in part reinforced these legitimate expectations. In June 2013, the then Minister for Broadband, Communications and the Digital Economy, Senator the Hon Stephen Conroy, issued two *draft* Ministerial Directions to the ACMA for comment that sought industry's views on:
- (a) Whether key allocation parameters established for the Digital Dividend Auction remained relevant with changing market dynamics;
 - (b) An appropriate time to return the un-sold 700MHz lots to market;
 - (c) A requirement for the ACMA to fix the spectrum access charge for un-sold 700MHz lots at \$1.36/MHz/Pop.²¹
 - (d) A requirement for the ACMA to prepare a 'post auction review report' to the Minister by 1 September 2014.²²
66. Optus' July 2013 response was:
- (a) To support the retention of un-sold 700MHz lots for future IMT use;

²⁰ Digital Dividend raised \$1.9B; and the 1800MHz regional auction raised a further \$0.5B

²¹ *Radiocommunications (Spectrum Access Charges - 700MHz band) Direction No. 1 of 2013*

²² *Australian Communications and Media Authority (Spectrum Allocation - Post-Auction Review) Direction No.1 of 2013*

- (b) That the optimal time for reallocation be post 2017 on the basis that this would provide sufficient time for the commercial worth of the 700MHz band to be tested in the market through its widespread deployment in commercial networks;²³ and
 - (c) The ACMA be directed to formally consult with industry in the preparation of its 'post auction' report to the Minister and that this report be made public.
67. These Directions were subsequently made at the end of July 2013.
68. In May 2014, the then Chair of the ACMA, Mr Chris Chapman, invited Optus to provide its views to inform its report to the Minister by 1 September 2014 on 'appropriate allocation procedures for un-sold 700MHz spectrum'.
69. The ACMA sought Optus' view on: when to sell; how to sell; reserve prices; competition limits; and the product offering. Optus' response to the ACMA's invitation was to:
- (a) Support recognition of developments in the significance of 'low band' spectrum for both current and future IMT use by supporting a combined auction of 700/900MHz, (*including converting existing 900MHz apparatus licences to a spectrum licencing framework*).
 - (b) Delay any allocation until at least 2018 or preferably significantly after this time on the basis that this would:
 - (i) permit the commercial worth of the 700MHz band to be further tested in the market, recognising that commercial trials weren't launched until mid-2014, with national commercial rollouts not commencing until 1 January 2015;
 - (ii) create an opportunity for a combined 700/900MHz auction or some other allocation process as these two low band spectrum are inextricably linked ; and
 - (iii) provide an opportunity for mobile network operators to assess their low band spectrum requirements in a single process properly.
 - (c) Delay a decision on the reserve price for un-sold 700MHz lots so it more closely aligns with a future allocation process. Optus' 2014 submission stated a minimum price of \$1.36 MHz /pop. It is Optus' view that the spectrum can be expected to be worth more now due to development of, for example, new device ecosystems and uptake that should be tested as part of a new process with the involvement of industry to determine a more optimal method of allocating available sub-1GHz spectrum.
 - (d) Apply competition caps for each participant in a future allocation processes on the basis of an assessment of sub-1GHz holdings at the time the allocation process occurs to support competitive neutrality.
 - (e) Allocate via national lots while also recommending this issue be revisited prior to a future allocation process. A review of whether national lots would ensure any lessons learnt from past or planned future deployment of 700MHz products or services, including changes to technical standards, are taken into account.

²³ Optus invested \$649,134,167 for 2 x 10MHz of 700MHz; 2 x 20MHz of 2.5GHz, Source: <http://www.acma.gov.au/Industry/Spectrum/Digital-Dividend-700MHz-and-25Gz-Auction/Reallocation/digital-dividend-auction-results>

- (f) Request the ACMA advise the Minister to include a view on the timeframe within which the issue of un-sold 700MHz lots would be considered.
 - (g) Recommend the Minister make the ACMA's report public.
 - (h) Recommend the Minister make a public statement to confirm the allocation process for un-sold 700MHz lots would not be held until at least 2018 and preferably after this time to take into account recent 15 year spectrum licences and in recognition of equity.
70. While the Minister did not subsequently make the ACMA's post-auction report public or publicly commit to the timing of an allocation process for un-sold 700MHz lots, the Minister's direction to the ACMA to conduct a 'market inquiry' process set the legitimate expectation that *updated* 'market inquiries' would precede any future decision on allocating un-sold 700MHz lots including assessments of:
- (a) Changes to the use of 700MHz;
 - (b) Evolution of device and equipment eco systems;
 - (c) Price;
 - (d) Competition limits; and
 - (e) Timing and type of allocation process.

Speed of decision

71. The timeframes proposed in the Consultation Note run counter to industry's legitimate expectation of the spectrum allocation consultation processes. For example, the ACMA regularly consults on its five-year Spectrum Outlook, which stakeholders can use to identify the ACMA's current priorities and when it expects a particular work program to commence. The allocation of un-sold 700MHz lots, while acknowledged to be part of its ongoing work program, contains little mention on next steps other than the following comment from the most recent Spectrum Outlook (2015-19) stating:

As is the case for unallocated spectrum generally, interested parties can make expressions of interest in the un-sold spectrum to either the ACMA or the government.²⁴

72. It is unclear why the Government's response to the VHA Proposal has progressed from 'expression of interest' to a draft Ministerial Direction outlining specific assumptions related to its allocation without consideration of how it aligns with the ACMA's broader five-year Spectrum Outlook assessment.
73. While the process for allocating spectrum at a pre-determined price is not unprecedented, this option is generally only used in the context of an auction allocation instrument where due rigor has been applied in establishing the final s.60 'Allocation Instrument'. Allocating spectrum at a pre-determined price is usually adopted when there is only one applicant for the spectrum lots on offer. No reasonable enquiries were made to ascertain the relevant facts nor has full and proper consideration been given to this issue.

²⁴ ACMA, 2015, Five-year spectrum outlook 2015-19: The ACMA's spectrum demand analysis and strategic direction for the next five years, September, p.38

74. For example, during the course of the Digital Dividend Auction there was considerable consultation between the ACMA and stakeholders on the key terms set out in the 'Allocation Instrument'. Consultation was undertaken via a combination of information sessions, informal feedback, and discussion papers prior to the release of a draft Allocation Instrument for comment. This process was not followed in the context of this draft Ministerial Direction. Instead the adopted approach is justified by the comment that:

*The Government had not received any expressions of interest in relation to the un-sold 700 MHz spectrum since the digital dividend auction. In 2014, the ACMA consulted with industry and concluded that there was no market demand for this spectrum.*²⁵

75. The VHA proposal was not tested with key mobile stakeholders before the draft Ministerial Direction was issued for comment, including whether it was appropriate to simply 'rollover' the parameters and policy approach adopted for the Digital Dividend Auction to the VHA proposal.

Inconsistent with previous Ministerial Directions

76. Following the conclusion of the Digital Dividend Auction in 2013, a Ministerial Direction was made under subsection 294(1) of the *Radiocommunications Act 1992* (**the Digital Dividend Direction**) that the un-sold 700MHz lots must reflect no less than the amount of \$1.36/MHz/Pop as the minimum value of the relevant spectrum.²⁶

77. The accompanying Explanatory Note acknowledged that:

*"The amount specified is expressed as a unit amount in \$/MHz/pop, which formula the ACMA will need to apply (based on the size in MHz of each lot and the population of the relevant licence area) when it fixes the spectrum access charges for the relevant spectrum."*²⁷

78. Subsection 3(c) in the Digital Dividend Direction further specified that the population of a licence area would be determined by the ACMA at the time the ACMA determines the spectrum access charges, while having regard to available population at that time.
79. This draft Ministerial Direction disregards the approach used to determine what population data is used to determine an appropriate spectrum access charge. The draft Ministerial Direction ignores this precedent and specifies its own terms for allocating 2 x 10MHz un-sold 700MHz lots to VHA.
80. The move away from the long standing approach of applying current population data to spectrum access charge is a further example of how the industry's reasonable legitimate expectations on how un-sold 700MHz lots would be allocated have not been met.
81. If such information was known, it is possible that more unsolicited expressions of interest for un-sold 700MHz lots would have been made.

CONCERNS ON MODEL APPROACH

82. Optus agrees with the principle that the value of a 15-year spectrum licence can be adjusted to reflect the shorter term of later awarded licences. In saying that, however,

²⁵ Department of Communications, 2016, Exposure Draft Radiocommunications (Spectrum Licence Allocation – Residual 700 MHz Band One) Direction 2016, Consultation Note, May, p.2

²⁶ *Radiocommunications (Spectrum Access Charge – 700 MHz Band) Direction No.1 of 2013*

²⁷ *Radiocommunications (Spectrum Access Charge – 700 MHz Band) Direction No.1 of 2013*, Explanatory Note, p.3

the Consultation Note and the further explanation document do not contain sufficient information on which interested parties can provide informed comments.

83. The model was not consulted upon and lacks transparency. The Consultation Note refers to a 'publicly-available model' used by ACMA; yet no link to the model was provided in the Consultation Note and it was not made available to interested parties until 20 days after the release of the Consultation Note. The extent of the public model is a one-page document. Optus is of the view that this model is inadequate for allocating over \$500m of public assets. Its use fails any test of reasonableness or proportionality.

Determination of access charge is flawed

84. The draft Ministerial Direction has proposed that the spectrum access charge be set at the fixed amount of \$571,814,450 for payment upfront, or \$594,300,000 if payment is to be made in three instalments.
85. The reference model has been set out in the Explanatory Statement to the *Radiocommunications (Spectrum Access Charges – 1800 MHz Band) Determination 2014* states:
- The approach essentially first constructs annual cash flows that grow at a constant annual rate across the entire 15 year licence period and are consistent in net present value terms... These constructed cash flows are then re-valued over the shorter licence period.*²⁸
86. The additional information provided on 26 May 2016 similarly states the intuition behind this approach is to reflect:
- ... how underlying cash flows might evolve across the full (15 year) licence period. Relevant cash flows are then discounted over the shorter licence period (using an indicative post-tax WACC).*²⁹
87. The document further states that the ACMA has previously used the logic of tilted annuities to construct indicative cash flows that reflect the net present value (NPV) of the full licence period valuation. Although a reference is not provided, Optus understands this to refer to the development of the *PMTS Class B – apparatus licences taxes in the 700MHz band* during late 2012 and early 2013.
88. The circumstances around the apparatus licence tax issue and the current issue are materially different. It does not appear that reasonable enquiries were made to ascertain the relevant facts nor has full and proper consideration been given to this issue. The 'additional information' document contains no justification for this approach.
89. Optus cannot provide comments on the suitability of the equation referenced in the Explanatory Statement to the *Radiocommunications (Spectrum Access Charges - 1800 MHz Band) Determination 2014*. No proof of the suitability of this equation has been provided.
90. The additional information document refers to two approaches – approaches A and B. From the information available to Optus, it appears that the equation in *Radiocommunications (Spectrum Access Charges - 1800 MHz Band) Determination*

²⁸ *Radiocommunications (Spectrum Access Charges – 1800 MHz Band) Determination 2014*, Explanatory Statement, pp.2-3

²⁹ Department of Communications, Additional Information 700MHz Spectrum, 26 May 2016

2014 is capable of estimating Approach A; and not Approach B. Therefore, Optus is limited in the views it can express.

91. On the face of it, it would appear that Approach B is the appropriate method to use. That is, the initial 3.25 years are excluded from the 15-year period since this reflects the period from the Digital Dividend Auction to the April 2018 date proposed in the draft Ministerial Direction. Optus is concerned that no model has yet been provided to reflect Approach B.

Long-hand NPV calculation

92. As explained above, Approach B is conceptually correct. That is, it is the first three years of the 15-year period which should be excluded, as this represents the time difference from 2015 to 2018.
93. The yearly annuity values using the equation in the Explanatory Statement for the 2014 1800MHz Determination³⁰ gives the values below.

Figure 1 Tilted Annuity Values – Approach B

YEAR	Annual Annuity Value
1	\$ 0.141
2	\$ 0.145
3	\$ 0.148
4	\$ 0.152
5	\$ 0.156
6	\$ 0.160
7	\$ 0.164
8	\$ 0.168
9	\$ 0.172
10	\$ 0.176
11	\$ 0.181
12	\$ 0.185
13	\$ 0.190
14	\$ 0.195
15	\$ 0.200
NPV 15 Yr	\$ 1.360
NPV 11.75Yr	\$ 1.258

Source: Radiocommunications (Spectrum Access Charges – 1800 MHz Band) Determination 2014, Explanatory Statement, Optus analysis

94. The NPV of the yearly annuities above confirms that the full 15 year NPV equals the original price of \$1.36. Calculating the NPV for the last 11.75 years – that is from year 5 to year 15 plus 0.75 of year 4 – results in an NPV of \$1.26. This calculation is consistent with the result of the Approach B method.

³⁰ Radiocommunications (Spectrum Access Charges – 1800 MHz Band) Determination 2014, Explanatory Statement

Value of the tilt variable (z)

95. While Approach B appears reasonable, Optus is concerned that the proposed value of the tilt (2.5%) has been adopted without full and proper consideration of the relevant facts. The additional information document states that the cash flow tilt is based on:

... expected long-term population growth; expected mobile penetration; expected growth in the average revenue per user (ARPU); and expected growth in mobile data applications.

96. The proposed value for the tilt is 2.5%. That means, annual growth of population plus the annual growth in ARPU plus the annual growth in mobile data equals 2.5%. A review of market data shows annual growth of 2.5% is far below reasonable market expectations. We discuss this below.
97. Optus understands from the additional information provided that the intent of the cash flow tilt is to reflect the growth in the cash flow attributable to the un-sold 700MHz lots for sale. This is a combination of two factors:
- (a) Growth in addressable market for 700MHz services; and
 - (b) Growth in revenue from 700MHz data services.

Growth rate of market for 700MHz

98. The relevant market is the market for 700MHz subscribers, in other words, the size of the market of 700MHz devices. To estimate this we can use:
- (a) Population Growth;
 - (b) Total market growth; and
 - (c) 700MHz device penetration growth.

99. **[CiC]**

Growth rate for 700MHz market revenue

100. In addition to the growth rate of the 700MHz addressable market; it is necessary to estimate the growth in 700MHz attributable revenue. 700MHz spectrum is used for the provision of data. The relevant revenue metric is growth in data revenue. Analysis Mason provided advice to ACMA in 2015 that total market average revenue per user (ARPU) can reasonably be assumed to be flat or slightly declining overtime. Over the same period data-specific ARPU is likely to increase over the same period. This reflects that ARPU is shifting from voice based service to data services.³¹
101. Following these market expectations, we can assume that current nominal market ARPU remains flat going forward – industry ARPU is around at \$44 per month.³² Following market forecasts accepted by ACMA, the percentage of ARPU attributable to data is expected to rise from the current level of 51%³³ to 100% post switch off of the 2G and

³¹ See, for example, Analysys Mason, 2015, Updated final report for the Australian Communications and Media Authority (ACMA), Mobile Network Infrastructure Forecasts, 10 June 2015, p.13.

³² Company reports, as at Dec 2015.

³³ Optus non-SMS data as at year ending March 2016. See Singtel, 2016, Management discussion and analysis of financial condition, results of operations and cash flows for the fourth quarter and year ended 31 March 2016, p.58

3G networks. It is expected that this will occur during the lifetime of the current 700MHz spectrum licence.

102. It is reasonable to forecast data ARPU to grow from \$22 in FY16 to \$44 at the end of the licence period. This equates to an annual compound growth rate of 5.8%.

Adjusting assumed cash flow tilt

103. Combining the effects of growing addressable 4G market and growing data revenues results in a compound annual growth rate of 4G-related cash flows of 13.5% over the licence period. This is significantly different from the assumed 2.5%. Optus considers that this growth rate should be considered the upper bound.
104. In addition, if population is based on current data the growth in population can be removed from the calculation of the tilt estimate. Using the same analysis as above, but keeping the total population stable, results in an annual compound growth rate of 4G cash flows of 11.7%.
105. The net present value of the tilted annuity adjusted from 15 years to 11.75 years is shown below in figure 2.

Figure 2 Tilted Annuity Values – Varying z

YEAR	Annual Annuity Value z = 2.5%	Annual Annuity Value z = 13.5%	Annual Annuity Value z = 11.7%
1	\$ 0.141	\$ 0.070	\$ 0.079
2	\$ 0.145	\$ 0.079	\$ 0.088
3	\$ 0.148	\$ 0.090	\$ 0.099
4	\$ 0.152	\$ 0.102	\$ 0.110
5	\$ 0.156	\$ 0.116	\$ 0.123
6	\$ 0.160	\$ 0.132	\$ 0.137
7	\$ 0.164	\$ 0.149	\$ 0.153
8	\$ 0.168	\$ 0.169	\$ 0.171
9	\$ 0.172	\$ 0.192	\$ 0.191
10	\$ 0.176	\$ 0.218	\$ 0.214
11	\$ 0.181	\$ 0.248	\$ 0.239
12	\$ 0.185	\$ 0.281	\$ 0.267
13	\$ 0.190	\$ 0.319	\$ 0.298
14	\$ 0.195	\$ 0.362	\$ 0.333
15	\$ 0.200	\$ 0.411	\$ 0.372
NPV 15 Yr	\$ 1.360	\$ 1.360	\$ 1.360
NPV 11.75 Yr	\$ 1.258	\$ 1.525	\$ 1.488

Source: Radiocommunications (Spectrum Access Charges – 1800 MHz Band) Determination 2014, Explanatory Statement, Optus analysis

106. In summary, the estimate in the draft Ministerial Direction of \$1.25/MHz/pop for a licence with the duration of 11.75 years is materially incorrect; and fails to take into account relevant facts. Updating the tilt factor for market-based growth rates results in an estimate of between \$1.49/MHz/pop and \$1.53/MHz/pop. The draft Ministerial Direction provides no indication that full and proper consideration has been given to this issue.

Failure to adjust for population growth

107. The *Radiocommunications (Spectrum Access Charge – 700 MHz Band) Direction No. 1 of 2013* created a legitimate expectation of the basis on which un-sold 700MHz lots would be allocated. That included an assumption that price would be determined on population data at the time a spectrum access charge determination was issued.
108. This legitimate expectation was reinforced by the practice at the recent regional 1800MHz spectrum auction (which commenced in November 2015) where the reserve price was based on ACMA estimated population as at September 2015.
109. The current draft Ministerial Direction, however, proposes to use the population figure of 22,872,578, the population at the time of the Digital Dividend Auction. By locking in a 2012 population estimate, the population growth that has occurred since has not been taken into account.
110. The Australian Bureau of Statistics estimates the national population to be 24,088,334 million at 30 May 2016. This is 1.215 million higher than the proposed figure. Using the outdated population estimate results in the price being 5% lower than would otherwise be.
111. The draft Ministerial Direction provides no indication that full and proper consideration been given to this issue.

Instalment payments

112. The Consultation Note does not provide sufficient reasons for the use of instalment payments for the spectrum access charge; nor does it provide adequate reasons for the discount rate to be applied to payments after 31 January 2018.
113. The Consultation Note proposes to accept payments be three instalments:
 - (a) 31 January 2018;
 - (b) 31 January 2019; and
 - (c) 31 January 2020.
114. Permitting VHA to delay payments until after the issuing of the spectrum licence would provide VHA a material advantage that was requested but not offered to successful bidders at the Digital Dividend Auction. Optus refers again to the precedent this is likely to set; and is likely to create a disincentive to participate at future auctions if it is known more favourable terms will be made available at a later time.
115. Optus notes that it did request the spectrum access charges to be made in instalments for spectrum it acquired at the Digital Dividend auction. This request was denied. No justification for this rejection of Optus' request was provided.
116. The use of instalment payments is also counter to the long standing requirement for spectrum access charges to be made upfront **prior** to the commencement of the licence. For example, Part 6 of the *Radiocommunications (Spectrum Licence Allocation – Combinatorial Clock Auction) Determination 2012*, requires payment of winning prices be made **prior** to the issuing of spectrum licences.³⁴

³⁴ See also p.26 of the Explanatory Statement to the Determination.

117. The Consultation Note states that the prices offered discounts instalments payable after 31 January 2018 at a rate of 5% for the period from that date.³⁵ No further reasons or details have been provided. It is not clear to Optus how the use of a 5% discount rate relates to the calculation of the three instalment values. Further, no reasons have been provided as to why 5% was adopted. It appears inconsistent with the discount rate used in the tilted annuity formula (8.4%).
118. Should the Ministerial Direction permit the use of instalment payments, the spectrum licence should not be allocated to VHA until after the third instalment and full payment has been made. This is consistent with all previous spectrum licence allocations. Failure to do this would materially prejudice bidders at the original Digital Dividend Auction. The draft Ministerial Direction provides no indication that full and proper consideration been given to this issue.

A BETTER POLICY ALTERNATIVE

119. A better policy response to the VHA proposal exists that will ensure un-sold 700MHz lots do not remain idle and unproductive within the medium term.
120. This alternative approach is based on developing an orderly and structured framework to allocate all un-sold 700MHz lots based on a transparent and equitable process that is proportionate to the significance of the asset for sale. It should:
- (a) Test the assumptions proposed in the Consultation Note to the draft Ministerial Direction;
 - (b) Ensure that the allocation is consistent with the objects of the Act, the Spectrum Management Principles and the longer term mobile broadband spectrum allocation framework adopted by ACMA;³⁶
 - (c) Evaluate allocation options including: invite expressions of interest from all interested parties, issuing a tender or proceeding to an auction;
 - (d) Consider bringing a single asset to market (all un-sold 700MHz lots) or a combined 'low band' tranche (700MHz and 900MHz); and
 - (e) Test the assumption in the Consultation Note that the VHA proposal is value for money.
121. Adopting this alternate approach would provide industry with confidence that the Government is not moving away from its established approach to:
- (a) Adopt a structured and phased approach to provide opportunities for all market participants to acquire spectrum for future mobile broadband use;
 - (b) Avoid responding to spectrum allocation proposals for allocated but un-sold lots for spectrum for mobile broadband without undertaking current market, competition, value, technical and technological use assessments; and

³⁵ Department of Communications, 2016, Exposure Draft Radiocommunications (Spectrum Licence Allocation – Residual 700 MHz Band One) Direction 2016, Consultation Note, May, p.5

³⁶ <http://www.acma.gov.au/Industry/Spectrum/Spectrum-planning/About-spectrum-planning/acma-focuses-on-future-of-mobile-broadband-spectrum>

- (c) Continue a process where market inquiries would precede any decision on future allocation arrangements for spectrum that has been allocated but un-sold.
122. It will also provide industry with the confidence that:
- (a) Parties will not be encouraged to make tactical unsolicited proposals to acquire spectrum for anti-competitive purposes (e.g. acquire purely with the intention to block, derail or frustrate commercial competitors, or to exploit information asymmetry and undermine the strategy of less well informed market participants); and
 - (b) Market participants could not view unsolicited proposals as a way of bypassing normal competition policy testing.
123. The outcome of this process would result in the Minister issuing a public statement to confirm the type and timing of an allocation process for either all un-sold 700MHz lots, or a combined 700/900MHz allocation.
124. Adopting this approach would improve business certainty on the timing and allocation of a critical spectrum asset and assist inform investment decision-making processes for all market players.