



Submission in response to
ACMA Consultation Paper

**Draft spectrum reallocation
recommendation for the
850/900 MHz band**

Public Version

July 2020

EXECUTIVE SUMMARY

1. Optus welcomes the opportunity to comment on the Australian Communications and Media Authority's (ACMA) draft recommendation to make a reallocation declaration for the 850/900 MHz band, and to allow the ACMA to conduct a price-based allocation of the spectrum in a combined auction.
2. The draft recommendation report addresses both the terms of the draft recommendation; and provides the early views of the ACMA on key auction issues.
3. With regards the draft recommendation terms, Optus agrees with the award of spectrum licences, covering the majority of Australia. Optus also supports the reallocation periods to be set at:
 - (a) The period ending 30 June 2024 for the frequency range 809-824 MHz paired with 854-869 MHz (the 850 MHz expansion band); and
 - (b) The period ending 31 December 2023 for the frequency range 890-915 MHz paired with 935-960 MHz (the 900 MHz band).
4. However, Optus strongly disagrees with the ACMA's initial views on other auction parameters, including both auction methodology and lot configuration. The importance of setting these parameters cannot be understated. While early guidance is welcome, Optus welcomes further consultation on these issues.
5. Specifically, Optus does not support the adoption of the sealed-bid combinatorial auction (SBCA) format using a first-price rule for the combined allocation of this valuable low-band spectrum. Optus submits that the SBCA format does not meet the objectives of the Act better than alternative, and simpler, auction methods.
6. Optus is concerned that the use of an untested and complex SBCA format for spectrum that is to be used for national deployment of 5G networks risks repeating the allocation mistakes made in Europe for 3G spectrum and networks – where the excessive spectrum prices led to a delay in network investment and as a result, reduced the benefits of use of spectrum
7. Optus engaged global consultancy Auctionomics to review the ACMA's reasons for preferring the SBCA methodology. The paper authored by Professor Milgrom, Professor Pagnozzi and Dr Hudson, concludes that:
 - (a) The ACMA's objectives can be best achieved using a simple two-stage Clock Auction design, with an initial multi-round clock stage to allocate generic lots and a subsequent sealed-bid stage to assign specific frequencies; and
 - (b) The alternative SBCA design that is currently preferred by the ACMA offers little benefit over the clock auction, but introduces a number of unnecessary risks and complexities.
8. Importantly, Professors Milgrom and Pagnozzi conclude that the ACMA has underestimated the strategic challenges that a SBCA, first-price format would present to bidders and has neglected the discouraging past experience with similar auctions in other countries. Milgrom and Pagnozzi conclude that *"it would be unwise to implement the unfamiliar and historically problematic SBCA format."*¹

¹ Auctionomics, 2020, Review of the ACMA's proposals for the 850/900 MHz band, p.5

TERMS OF THE DRAFT RECOMMENDATION

9. The ACMA consultation addressed proposed terms of the draft recommendation as well as flagging preliminary view other issues that are to be decided upon at a later time. Importantly, for this consultation only the terms of the recommendation to make a reallocation declaration for the 850/900 MHz band need to be finalised at this stage.
10. This section outlines Optus' position on the terms of the recommendation. Our views on the other issues are addressed later.
11. Table 1 below lists the ACMA's proposed recommendations for the four elements required for the recommendation to make the declaration. Optus considers that the proposed reallocation periods are appropriate. Further comments on the draft terms are set out below.

Table 1 Terms of the draft recommendation

Element of draft recommendation	The ACMA's proposed recommendation
Licence type	Spectrum licences
Parts of the spectrum	<ul style="list-style-type: none">809–825 MHz paired with 854–870 MHz; and890–915 MHz paired with 935–960 MHz covering all of Australia excluding the mid-west Radio Quiet Zone (RQZ).
Reallocation period	For the frequency ranges 809–825 MHz and 854–870 MHz, the period ending 30 June 2024. For the frequency ranges 890–915 MHz and 935–960 MHz, the period ending 31 December 2023.
Reallocation deadline	31 December 2022 (12 months before the end of the re allocation period that ends first in time)

Source: ACMA

Licence type and specified parts of the spectrum

12. Optus agrees with the draft recommendation in the 850/900 MHz band for the award of spectrum licences covering all of Australia excluding the mid-west Radio Quiet Zone. This would effectively make available 80 MHz of spectrum in the combined auction.
13. While a national licence for all low-band spectrum should be the long-term objective, however, to get to that outcome, Optus notes that there is a need for alignment between the existing metro/regional licencing in the 850 MHz band and the proposed allocation of the 850 MHz expansion band. We address this issue in more detail below.
14. Optus therefore considers further consultation is required to determine the appropriate geographic lot configuration.

Reallocation period and deadline

15. Optus supports the proposed reallocation period to be set at:
 - (a) The period ending 30 June 2024 for the frequency range 809-825 MHz paired with 854-870 MHz (the 850 MHz expansion band); and
 - (b) The period ending 31 December 2023 for the frequency range 890-915 MHz paired with 935-960 MHz (the 900 MHz band).
16. Optus also supports the reallocation deadline to be set at the earlier of the two reallocation periods, that is, 31 December 2022.
17. In addition, Optus considers that licence commencement should similarly align with the conclusion of the band clearance activities. Early access arrangements should also be formalised and made available in areas where spectrum has been cleared.

Public Safety Mobile Broadband

18. There remains an outstanding question over the potential allocation of a 5 MHz paired lot for Public Safety Mobile Broadband (PSMB). This has not yet been determined.
19. The Government's Policy Objectives similarly sets out a position that it is open to the potential to set-aside a 5 MHz paired lot for PSMB.
20. Optus considers that where a PSMB allotment is to be considered, this should be at the bottom of the 850 MHz expansion band.

OTHER MATTERS RELEVANT TO A PRICE-BASED ALLOCATION

22. The ACMA has made preliminary comments on several matters relevant to a price-based allocation in the combined 850/900 MHz band. This is summarised at Table 2 below.
23. While we welcome early discussion on these issues that need to be agreed to prior to any allocation, decisions should not be made on these issues at this early stage. Optus assumes that the ACMA will undertake further detailed consultations on these issues in due course.
24. Optus considers that the ACMA's preliminary view in its current form needs further consideration to ensure that no unintended consequences arise.

Table 2 Other matters relevant to a price-based allocation in the 26 GHz band

Relevant matters	The ACMA's preliminary consideration
Licence term	15 years
Auction methodology	Sealed bid combinatorial auction (SBCA) format with pay-as-you-bid (first price) rule
Lot size	5 MHz paired lots
Lot configuration	Single Australia-wide lots excluding the mid-west RQZ

Source: ACMA

25. The importance of setting these parameters cannot be understated, and while early guidance is welcome, further consultation would appear to be required. In particular, Optus has serious concerns over three issues:
 - (a) Auction methodology;
 - (b) Lot configuration; and
 - (c) Licence terms.
26. Optus' comments on these preliminary views are set out below.

Auction methodology

27. The ACMA has proposed an auction methodology based on a sealed bid combinatorial auction (SBCA) format a using a pay-your-bid pricing (first-price) rule. Optus strongly opposes this format. Optus submits that:
 - (a) Adoption of a SBCA methodology will not meet the objectives of the Act;
 - (b) Assumptions underpinning the selection of the SBCA methodology do not hold in reality; and
 - (c) Alternative auctions formats are better suited.

28. Optus engaged global consultancy Auctionomics to review the ACMA's reasons for preferring the SBCA methodology. This paper is attached to this submission. The paper authored by Professor Milgrom, Professor Pagnozzi and Dr Hudson, concludes that:
- (a) The ACMA's objectives can be best achieved using a simple two-stage Clock Auction design, with an initial multi-round clock stage to allocate generic lots and a subsequent sealed-bid stage to assign specific frequencies; and
 - (b) The alternative Sealed-Bid Combinatorial Auction design that is currently preferred by the ACMA offers little benefit over the clock auction format, but introduces a number of unnecessary risks and complexities.
29. Importantly, Professors Milgrom and Pagnozzi believe that the ACMA has underestimated the strategic challenges that a SBCA, first-price format would present to bidders and has neglected the discouraging past experience with similar auctions in other countries.
30. In summary, while Optus agrees with many of the concerns the ACMA are attempting to address, the move to the SBCA methodology is not a proportionate response to the identified problems.

The SBCA methodology does not meet the objectives of the Act

31. Optus does not support the adoption of the SBCA format using a first-price rule for the combined allocation of this valuable low-band spectrum. Optus submits that the SBCA format does not meet the objectives of the Act better than alternative, and simpler, auction methods. Optus is concerned that the SBCA method will not lead to an efficient allocation of spectrum; and is unlikely to maximise the overall public benefits of use of the 850/900 MHz spectrum.
32. The requirement under the Act to maximise the overall public benefits of use of spectrum is a wider definition of efficiency than that used by the ACMA in justifying the SBCA method – it requires a deeper analysis than looking only at maximising the winners' values of the spectrum, or maximising the prices paid for the spectrum.
33. As a general notion, the concept that allocating spectrum to users who value it the most is a good approximation for the public benefit test. However, this assumes that bidders have full knowledge of the value of use of the spectrum and have control over the prices paid for lots. Price discovery before and during the auction plays a vital part in ensuring spectrum is allocated so that public benefits of use are maximised. It is also vital that bidders retain sufficient surplus after the auction so that they can commit to the massive capital investment required to build networks that use the acquired spectrum.
34. For this reason, auction methods that minimise the winning amounts paid are more likely to maximise the public benefit of use of spectrum. Optus observes that the benefits of use of spectrum that arise from allocating greater bandwidth and achieving more competitive market structures greatly "dominate" the revenue gained from auctions.²
35. Optus submits that the SBCA is an extremely complex method for potential bidders to prepare for and to establish valuations for all the possible combinations of possible auction lots. While the administration of the SBCA process may be simple from the perspective of an auction manager, it is far from simple from a bidder's perspective.

² Hazlett & Munoz, 2009, "A welfare analysis of spectrum allocation policies", *The RAND Journal of Economics*, Vol. 40, No. 3, pp.424-54.

36. This view is supported by Professors Milgrom and Pagnozzi, who observe that bidding strategy is complex under SBCA and “maximize bidder uncertainty about the prices they must pay to acquire any package.”³ SBCA requires bidders to compare values and likely prices of a large number of packages, before the auction, and with very limited information. The number of packages that bidders must assess grows exponentially with the number of lots for sale. Bidders lose control of the outcome of the auction, with SBCA requiring bidders to evaluate and make offers for a large number of packages, with no indication about the packages that they realistically have a chance of winning or their likely final prices.⁴
37. There is a very real risk that winners in a SBCA auction will have paid over-the-top and potentially more than other winners or bidders. This winners curse – where the price paid was higher than the value that was required to win – may actually lead to a delay or reduction in network investment and as a result, reduces the benefits of use of spectrum.
38. Optus is concerned that the use of an untested and complex SBCA format for spectrum that is to be used for national deployment of 5G networks risks repeating the allocation mistakes made in Europe for 3G spectrum and networks. The allocation of spectrum for use of 5G networks has many similarities to the early 3G spectrum auctions in Europe, namely, new technology with little proven commercial uses, high expectations of future value but also high uncertainty. As the ACMA would be aware, the extreme auction outcomes in the initial auctions in Germany and the UK led to material delays in the roll out of new 3G networks and a delay in the benefits of use of the spectrum. Optus submits such an outcome must be avoided in Australia.
39. The ACMA considered the SBCA format to be appropriate for four key reasons:
- (a) Price discovery is not important;
 - (b) Manages exposure risk of bidders;
 - (c) Minimises strategic demand reduction; and
 - (d) Supports service continuity.
40. Optus asked Professors Milgrom and Pagnozzi whether these reasons are sufficient to recommend SBCA over other auction formats. They conclude that while the concerns may be relevant, they are not in themselves reasons to support SBCA over other formats. Indeed, Milgrom and Pagnozzi conclude that these concerns can be addressed through their preferred Clock Auction (CA) format. Optus summarises their views on these issues below:

Importance of price discovery

41. Milgrom and Pagnozzi disagree with the view of the ACMA that price discovery is not important for this auction. They observe that “price and allocation discovery are *especially* important in the presence of complementarities, because complementarities make it more important to identify relevant opportunities and pursue a bidding strategy”.⁵
42. This impact is magnified for spectrum that is scarce and valuable — like low band spectrum — where errors will have material impact on future profits and operation.⁶ To ensure efficient participation in an auction with these characteristics, “bidders require

³ Auctionomics, 2020, Review of the ACMA’s proposals for the 850/900 MHz band, p.4

⁴ Ibid.

⁵ Auctionomics, 2020, Review of the ACMA’s proposals for the 850/900 MHz band, p.5

⁶ Ibid.

dynamic information about the overall price levels and about competitors' quantity demand."⁷

43. Milgrom and Pagnozzi also disagree with the ACMA's view that price discovery is less important due to bidders being aware of the capabilities and therefore market value of the spectrum. They conclude that knowledge of market value does not necessarily provide a correct estimation of spectrum's likely price in an auction, which may greatly exceed or fall short of such market value.⁸
44. For example, the Irish SBCA auction dealt with fixed links where demand was less than supply and the licences had low value. In this example, price discovery was less important. This is not the case for this upcoming 850/900 MHz auction.

Addressing exposure risk

45. The ACMA assumes that the existence of strong complementarity makes bidders vulnerable to the exposure risk. Milgrom and Pagnozzi conclude that this risk is overstated. Under a standard SMRA, for there to be exposure risk, there also needs to be:
 - (a) Insufficient lots for each bidder to acquire their minimum needs;
 - (b) Bidders must be unable to forecast final prices sufficiently well to protect against winning a single block, *and* secondary markets must be so inefficient as to not correct the initial mis allocation.
46. Milgrom and Pagnozzi note that under their preferred auction format (Clock Auction Format), bidders cannot win non-contiguous lots, eliminating the possibility that they are left with unusable assignments.⁹
47. Milgrom and Pagnozzi advise that the optimal and simple way to deal with the exposure risk associated with the ACMA's option 3 — winning a single lot for which there is no value — is to adopt a rule that allows bidders to move from two lots to zero lots. A rule similar to this was applied in the US Broadcast Incentive Auction.
48. Milgrom and Pagnozzi conclude that "*with sufficient spectrum on offer and the availability of simple improvements to the CA format that can mitigate the small remaining exposure risk, it would be unwise to implement the unfamiliar and historically problematic SBCA format.*"¹⁰

Strategic demand reduction

49. The ACMA appears to equate auction efficiency with minimising strategic demand reduction. Milgrom and Pagnozzi observe that the ACMA does not demonstrate that the SBCA would result in less bid shading than other designs, or that bid shading is damaging.¹¹
50. Milgrom and Pagnozzi note that bid shading is an essential feature of a first-price auction, because bidders always have an incentive to bid less than their maximum

⁷ Ibid.

⁸ Ibid.

⁹ Auctionomics, 2020, Review of the ACMA's proposals for the 850/900 MHz band, p.3

¹⁰ Auctionomics, 2020, Review of the ACMA's proposals for the 850/900 MHz band, p.5

¹¹ Auctionomics, 2020, Review of the ACMA's proposals for the 850/900 MHz band, p.6

valuation. Further, bid shading in an auction “can promote efficiency in the retail market” by ensuring firms cannot deny competitors the opportunity to purchase spectrum.¹²

51. Milgrom and Pagnozzi observe that SBCA can result in strategic bid reduction and an extremely inefficient ex-post outcome resulting in the exit of one competitor from the market.¹³

Supporting service continuity

52. The ACMA state that service continuity objectives may be facilitated within this format through spectrum reservation whereby “*identified parties could be provided with a reservation of an amount of spectrum, rather than a specific lot (as would be required under an open ascending format)*.”¹⁴ Package bids would therefore include these spectrum reservations.
53. Milgrom and Pagnozzi conclude that the reasons used to justify SBCA would equally apply in a CA format. In a CA format, continuity could be achieved by reserving one or more generic lots in the allocation stage. They conclude that using a simple modification “*provides a more straightforward way of meeting the reallocation objectives without the risks and downsides of a SBCA*”.¹⁵
54. Optus strongly disagrees with use of the SCBA format for the allocation of low-band spectrum. While we acknowledge that the issues identified by the ACMA need to be addressed, these issues can be addressed by adopting a far more simple and common clock auction with assignment stage format.

The ACMA overstates the level of complementarity between lots

55. Optus supports the combined allocation of the 850 MHz expansion and 900 MHz bands within the same allocation process; but also recognises there are many differences between the bands including in both the deployment and use of these bands.
56. Notably, the ACMA has acknowledged:
- The SBCA format is likely to be only suitable in a relatively simple auction where the number of lots on offer is relatively low, so that the number of possible combinations of lots requiring bids is feasibly low. In addition, it is likely to be suitable in scenarios where the benefits of price discovery are limited and there are large risks associated with open ascending auction formats.*¹⁶
57. This however presumes that there is strong complementarity and bidder indifference between all lots on offer, i.e. price discovery is of reduced importance. In this case, that spectrum in both bands is of relatively equal value and that reducing exposure risk is of greater importance than strategic demand reduction.
58. It follows that the selection of auction design based on the presumption of strong complementarity between the lots on offer will lead to an inefficient outcome where this assumption fails to be realised. We further discuss several related issues below.

¹² Ibid.

¹³ Ibid.

¹⁴ ACMA, 2020, Draft spectrum re-allocation recommendation for the 850/900 MHz band, Consultation Paper, May, p.35

¹⁵ Auctionomics, 2020, Review of the ACMA’s proposals for the 850/900 MHz band, p.7

¹⁶ ACMA, 2020, Draft spectrum re-allocation recommendation for the 850/900 MHz band, Consultation Paper, May, pp.32-33

59. While some technical similarities exist, such as propagation characteristics and the distance signals may travel, this does not support the assertion that the frequency bandwidths may be used interchangeably or operate over the same equipment.
60. Optus observes the market reality that the assumption that bidders could treat lots in both bands as complementary on the basis that bidders could deploy the spectrum won in either band simultaneously without additional cost is simply not the case.
61. There is currently no multiband 850/900 MHz remote radio unit (RRU) available that would support the operation of both spectrum bands simultaneously. There is also limited appetite for the development of such multiband 850/900 MHz RRU due to the close proximity of the 850 MHz downlink and the 900 MHz uplink.
62. This means that successful bidders may have to deploy separate RRUs to accommodate the lots won in different bands, i.e. the requirement to deploy two RRU significantly increases deployment costs compared to the case of deployment of only one RRU. The requirement for an additional RRU may also have added cost implications for site rental and other associated facilities access payments.
63. The auction design for the combined allocation must also take into account existing holdings and their current deployments. Notably, the existing holdings of spectrum in the 850 MHz spectrum licensed and 900 MHz apparatus licensed bands, as well as their currently deployments, will influence bidder strategy to some extent.
64. In other words, it cannot be concluded that strong complementarity and value indifference exists between lots across the two bands.

Two-stage Clock Auction format is the preferred auction format

65. Optus considers that the ACMA's objectives can be best achieved using a simple Clock Auction with Assignment Stage (CA). A version of this design is presented under Option 3 in the Consultation Paper, which acknowledges:

The two-stage auction with generic lots simplifies the bidding process relative to the standard SMRA auction format. The proposed two-stage auction with generic lots has no concept of a 'standing high bidder' or of 'holding lots'.¹⁷

66. In short, the primary stage would determine the amount of spectrum (i.e. number of lots) to be allocated and price of generic lots to be awarded to each successful bidder, while the assignment stage would determine the location of the assignment of contiguous lots within the relevant frequency band.
67. The CA auction format would also best accommodate for any differences in geographic lot configuration and competition limits that may arise. It is also able to facilitate any potential set-aside allocations that may be considered to meet the Government's stated policy objectives of promoting competitive market outcomes and encouraging infrastructure investment.
68. This is supported by the expert views of Professors Milgrom and Pagnozzi, who state: "we consider a simple Clock Auction with Assignment Stage (CA) to be the best auction

¹⁷ ACMA, 2020, Draft spectrum re-allocation recommendation for the 850/900 MHz band, Consultation Paper, May, p.31

*format for the upcoming sale of 850/900 MHz licenses.*¹⁸ This format has numerous advantages over an SBCA:

- (a) Bidders pay identical prices for identical lots in the allocation stage.
 - (b) It allows price and allocation discovery, which frees bidders from the need to guess about other bidders' strategies, and thereby promotes efficiency
 - (c) It is widely used in a wide variety of different countries and environments, including the recent U.S. Broadcast Incentive Auction.
 - (d) The standard clock auction also avoids two forms of 'exposure risk' that emerge in other auction designs, including some SMRA variants.
 - (e) The remaining exposure risk, where bidders may end up winning a single lot for which they have no value, or (more generally) a subset of the larger package that they intended to acquire, can be avoided by allowing bidders additional flexibility to reduce demand during the allocation stage of the CA. A simple rule of this kind would eliminate the most serious remaining exposure risk in the allocation stage of the clock auction.
69. Optus submits that the two stage CA format, with additional flexibility to reduce demand during the allocation stage, addresses all the issues identified by the ACMA. Importantly, Optus submits that this format will better ensure that the spectrum is allocated in a manner which maximises the public benefit of use.

Lot configuration

70. The ACMA has proposed a lot configuration based on the allocation of 5 MHz paired lots, covering the majority of Australia.

Lot size

71. The ACMA has considered several options for lot sizes:
- (a) 5 MHz paired lots;
 - (b) 10 MHz paired lots; and
 - (c) 15 MHz paired lots
72. Given that there will effectively be a total of either 70¹⁹ or 80 MHz made available, Optus supports the view to allocate spectrum based on 5 MHz paired lots (or increments). This recognises the international 3GPP standards for 4G and 5G deployments.
73. While the alternative lot sizes may reduce the auction complexity (i.e. reduce number of lots available) and similarly mitigate the need to introduce a Minimum Spectrum Requirement (MSR), Optus considers that doing so would immediately foreclose on any operator aspirations to obtain any other combinations. Moreover, alternative lot sizes may limit the effectiveness and efficiency of any allocation limit set by the Minister.

¹⁸ Auctionomics, 2020, Review of the ACMA's proposals for the 850/900 MHz band, p.2

¹⁹ ACMA acknowledges that one 2 x 5 MHz lot *may* be excluded from the re-allocation subject to a PSMB request.

Geographic lot configuration

74. The ACMA has considered three geographic configuration options:
- (a) Single Australia-wide lot;
 - (b) Large geographic areas; and
 - (c) Smaller geographic areas.
75. For this combined auction, the ACMA's preferred view is that a single Australia-wide lot excluding the mid-west RQZ would be the most appropriate configuration for the 850/900 MHz band allocation. This means there will be in total, 8 lots on offer.
76. While this would simplify the auction process and reduce the overall number of defined areas, Optus does not agree that this would allow future users of this spectrum to make the best technical and economic use of the 850/900 MHz band. Ultimately, the objectives of the Act are maximised where at the end of this auction, MNOs have access to national contiguous low band spectrum that support a competitive market structure.
77. Optus agrees that while national licences should be the long-term objective for low-band holdings, the new 850 MHz expansion band should mirror the existing 850 MHz licence areas. Allocating the 850 MHz expansion lots on a national basis will likely prevent existing 850 MHz licensees from acquiring nationally contiguous lots and could risk some lots being unsold depending on the allocation limit set. Together, these two bands will eventually exist in the same wider 800 MHz band following expiry/renewal of the 850 MHz spectrum licences and completion of the post-downshift arrangements. The frequency range 844–845 MHz is also subject to further planning decisions by the ACMA after the downshift is completed.
78. Optus submits a better alternative is:
- (a) 900 MHz lots be allocated on a national basis (i.e. single Australia-wide lot)
 - (b) 850 MHz lots be aligned to the existing 850 MHz licence areas. For simplicity, this would reflect the large geographic areas based on metro and regional areas.

Alignment of 850 MHz expansion band with existing 850 MHz band maximises the benefit of use of the spectrum

79. Optus considers that the geographic areas for the 850 MHz expansion band should align with the existing 850 MHz spectrum licensed holdings – based on large geographic areas – that is, metropolitan and regional areas – to ensure efficient allocation of the new spectrum band.
80. First, a metro and regional geographic disaggregation allows for this new allocation to take into account the non-alignment of regional holdings held by the two incumbent licensees in that band. This will have implications for the consideration and setting of any competition limits that may be introduced into the allocation process. For example, the allocation limits based on a national geographic lot could limit the current incumbent licensees from equalising their unequal 850 MHz holdings.
81. Second, allocating the 850 MHz expansion band in the form of a single Australia-wide lot may also lead to the inefficient allocation of this spectrum for other reasons. For example, if the Minister agrees to allocate or set-aside a lot for PSMB purposes, there is the risk that this may lead to the inefficient allocation of spectrum in some geographic

areas, i.e. potential licensees may be denied access to the PSMB assigned allocations in areas where the PSMB operator may not be seeking to deploy its network.

82. Third, the long term objective of ensuring the overall efficient allocation of the wider 800 MHz band will not occur at the end of this allocation process. It will also need to take into account the activities that will occur following expiry/renewal of the 850 MHz spectrum licences and completion of the post-downshift arrangements.
83. Optus therefore considers that the alignment of the 850 expansion band with the existing 850 MHz spectrum licensed areas (or boundaries) will better facilitate the overall utility and efficient allocation of spectrum of the wider 800 MHz band in the long term.

Licence term

84. Optus supports the ACMA's proposed licence duration of 15 years, and commencement of the 850 MHz expansion band to start at the end of the reallocation period.
85. However, we consider that the same licence commencement consideration be applied to the 900 MHz band. The ACMA currently proposes for licences to commence as soon as possible after allocation due to very few incumbent services in the frequency range proposed.
86. It would not be appropriate to commence licences and require licence payment at the time of licence commencement, for licences that remain heavily encumbered and that may continue to operate until the end of the reallocation period.
87. Optus therefore considers that licence commencement should only occur after the reallocation period has ended for each band respectively and that the formalisation of early access arrangements will be sufficient to allow future licensees to gain access to unencumbered areas during the transition.