

# OPTUS

Submission in response to  
ACMA's draft Five-year  
spectrum outlook 2025-30  
and 2025-26 work program

Public Version

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## EXECUTIVE SUMMARY

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1. Optus welcomes the opportunity to provide feedback on the Australian Communications and Media Authority (ACMA) *draft Five-year spectrum outlook 2025-30 and 2025-26 work program* (the draft FYSO).
2. Optus continues to support the ACMA's development and publication of the FYSO as a best practice spectrum management tool. By setting out a roadmap for the ACMA's proposed spectrum releases and uses, the ACMA promotes transparency and industry engagement, helping to inform network planning and deployment.

### *Expiring Spectrum Licence process is the key priority for 2025 - 2030*

3. The ACMA's expiring spectrum licences (ESL) process should be the priority work program for the ACMA over the period of this FYSO and beyond.
4. The ACMA's decisions on future use of ESL spectrum will have a profound impact on the shape of Australia's mobile sector and Optus considers the ESL process to be the ACMA's first spectrum management priority for the foreseeable future.
5. Optus suggest that the ACMA's technical work focus on the spectrum management fundamentals of defragmentation, optimisation and harmonisation to maximise ESL spectrum efficiency for the long term.
6. Any changes to licence conditions for ESLs should be completed in advance of the renewal period opening for each band.

### *Other spectrum priorities for 2025 - 2030*

7. Ensuring the appropriate band arrangements are in place is important for ensuring the ever-increasing demand on finite spectrum resources can meet the expectations of licensees and spectrum users. This includes supporting the development of technical arrangements that limit interference potential to the greatest extent practicable and are conducive to workable co-existence, coordination and cooperation.
8. While the draft FYSO acknowledges the progression to preliminary planning stage for a number of bands, Optus notes that a key exception has been the failure to progress work in the 2300-2302MHz band.
9. To this end, we consider that spectrum management over the period of this FYSO should focus on the following key issues:
  - (a) Prioritising the ACMA's consideration of the spectrum arrangements governing ESLs for the foreseeable future. Optus welcomes the release of the Stage 3 consultation and will provide a submission in response to that process.
  - (b) Optimisation of the 3.4-4.0GHz band to deliver greater utility and efficiency in the band via harmonisation of conditions, alignment of geographical areas and support for defragmentation.
  - (c) Further engagement with stakeholders in the 1800MHz and 2GHz outside of spectrum licence areas review is encouraged prior to the release of outcomes paper in Q3 2025.

- (d) 2300-2302MHz conversion to Spectrum Licencing to support the delivery of 100MHz bandwidth for 5G services in the 2.3GHz band.
  - (e) Continued assessment of current frameworks against industry and international announcements in the 6GHz band.
  - (f) Despite the continued foreshadowing of the benefits of 6G across a range of policy objectives, further studies are still required to understand how to make this a reality. There is no clear plan for the delivery of 5G-A or 6G over the medium term.
10. We also refer the ACMA to the Australian Mobile Telecommunication Associations (AMTA) submission.

## CONSIDERATIONS FOR SPECTRUM OUTLOOK 2025-30

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11. The objective of the *Radiocommunications Act 1992* (the Act) is to promote the long-term public interest derived from the use of spectrum. This is to be achieved by ensuring spectrum is managed in a manner that facilitates (i) the efficient planning, allocation and use of the spectrum, (ii) the use of spectrum for commercial or specified public interest purposes and (iii) supports the communications policy objectives of the Australian Government.<sup>1</sup>
12. Mobile communications are essential for most Australian businesses and consumers. Notwithstanding the increasing importance of potential alternative technologies, particularly satellite services, to meeting Australia's communications needs, mobile networks are and will remain central to realising economic growth and delivering quality high bandwidth communications services for all Australians.
13. Spectrum management cannot, nor should it be expected to, deliver all the Government's communications policy objectives. While the ACMA's spectrum management must be guided by and support the delivery of policy objectives, its spectrum management practices must remain founded on sound engineering principles. Optus encourages the ACMA to continue to focus on spectrum management fundamentals as a key mechanism in facilitating technical and economic efficiency thereby promoting the long-term public interest derived from spectrum use.
14. Recognising the ever-increasing demand on spectrum resources, Optus supports the development of technical arrangements that limit interference potential to the greatest extent practicable and are conducive to workable co-existence, coordination and cooperation. Ensuring the appropriate licensing frameworks are in place to support licensees and spectrum users is also central to achieving this goal.
15. Optimising existing spectrum licenced band arrangements in the medium term should be a priority for ACMA. There is a clear need for optimisation in C-band, with disparate licence boundaries, holdings and licence conditions fundamentally undermining effective secondary market activities to support the licensee-led changes in the band required to maximise its efficient use. Appropriate band harmonisation activities could be used to ensure better design of spectrum licensing arrangements to improve efficiency and utilisation in the band.
16. Optus reiterates its view that the ACMA should consider the work program relating to expiring spectrum licences to be of the very highest priority and will be the cornerstone for promoting long-term network investment.
17. The longstanding industry position on spectrum policy objectives have long focused on the quality of spectrum and the need for sufficient certainty to promote mobile network investment.
18. The quality of 5G, and ultimately 6G, services will also depend on the quality and quantity of the spectrum available to MNOs. It follows that efficient allocation of spectrum resources will be crucial to achieving this outcome, including through:
  - (a) Band harmonisation processes to promote spectrum efficiency could be better leveraged by ACMA and industry. Licence harmonisation, band reallocation

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<sup>1</sup> Section 3, Radiocommunications Act

and defragmentation are also key steps in enabling allocated spectrum to be used for new technologies.

- (b) Co-existence, coordination and cooperation to deliver spectrum utility. Focus on interference management is needed to ensure that spectrum allocated under formal spectrum licensing arrangements remain of sufficient quality and utility for use by licensees.
  - (c) Any introduction of a secondary licencing framework must maintain adequate protections for incumbent licensees without impeding expansion opportunities for MNOs delivering public services.
19. In addition to its consideration on ESLs, Optus encourages the ACMA to adopt a long-term plan for allocation of mid-band spectrum to WBB. We recognise that the readiness of existing bands to support the latest and future technologies is as important as new allocations to accommodate the ongoing growth in demand experienced by licensees.
20. While the ACMA refers to the benefits of 6G in support of the Government's communications policy objectives, further studies are still required to understand how to make this a reality, not least of which is a clear spectrum roadmap to facilitate the introduction of 6G. Optus considers the ACMA decision in the upper 6GHz to be a missed opportunity in this regard.

## PROPOSED 2025-26 SPECTRUM WORK PLAN AND FYSO

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21. While Optus supports the ACMA maintaining a balance between planning (“new allocations”) and optimisation (“band harmonisation”) activities, ESL related activities must take precedence over all other spectrum related activities within the ACMA’s proposed robust work plan of activities.
22. Optus welcomes the commencement of the ESL Stage 3 consultation and will provide further submission as part of that process. In general, we reiterate the view that MNOs should be provided with the opportunity to renew all ESLs on the terms and conditions most favourable for promoting public interest.
23. Optus would also welcome the inclusion of the table of consultation plans that have previously been shared in previous versions of the FYSO.<sup>2</sup> This has been valuable in assisting with internal resource planning to support upcoming consultations and review activities.
24. Optus’ views on the ACMA’s plans for monitoring, initial investigation, preliminary replanning or re-farming of spectrum bands are summarised below.

### Monitoring

25. Optus supports continued monitoring of the bands identified by the ACMA.

#### 600MHz band

26. Optus notes there is no change to prioritisation of this band, however, there has been a clear move away from monitoring of this band for IMT. While we acknowledge the ACMA’s shift in focus, there is clearly broader international momentum following WRC-23<sup>3</sup>, for the allocation of the band to mobile services that would warrant continued monitoring for IMT development in this band.

#### Mid-band spectrum

27. Optus notes that the 3.3GHz, 4.5GHz and 4.8GHz bands have been included in the FYSO for many years, and we welcome continued monitoring of these bands for international developments.
28. We welcome the ACMA’s recognition of a growing international trend towards assigning all or part of the 4400-5000MHz band to WBB.<sup>4</sup>

#### Other bands

29. Optus notes that the 40GHz, 46GHz and 47GHz bands have been included in the FYSO for many years, and we welcome continued monitoring of these bands for international

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<sup>2</sup> For example, refer to tables 9 and 10 which set out both the issues and proposed timeline in FYSO 2024-2029.

<sup>3</sup> For example, IMT in the 600MHz band has been allocated for IMT in Saudi Arabia and UAE, and is being considered across a number of developing regions, with 60+ countries having also signed into new footnotes for low-band spectrum.

<sup>4</sup> Draft FYSO 2025-2030, p.33

developments. Again, noting there is no immediate need for the expedited progression of these new mmWave spectrum bands (i.e. 40GHz and 47GHz).

30. Optus does not support the allocation of these bands in advance of the global ecosystem to deploy new spectrum bands not yet harmonised or supported. Optus also notes that any proposed allocation in the 40GHz band for satellite services should emphasise the coordination and co-existence requirements between land mobile IMT services and satellite services.

### Future bands

31. Optus notes WRC-27 agenda item 1.7 will consider studies on sharing and compatibility and develop technical conditions for the possible use of IMT in the frequency bands 4400-4800MHz, 7125-8400MHz and 14.8-15.35GHz.
32. Optus supports the ACMA's ongoing monitoring of developments in these bands.

## **Initial investigation**

### 2300 – 2302MHz

33. This has remained in the initial investigation stage for a number of years, and while there has been continued recognition that work is required, this has long stalled.
34. The need for the spectrum licensing designation of this band is still required to realise the full utility of the 2300MHz by enabling 100MHz wide carriers for 5G.
35. Optus reiterates that the 2300-2302MHz band is required for WBB use and that it should be offered as a direct allocation to the existing adjacent incumbents. It is also important that any change in band and licence configuration is completed in good time prior to the 2.3GHz licences expiring.
36. In order to achieve this, Optus encourages the ACMA to move this work to the next stage of preliminary replanning otherwise there is a real risk that the window for change is missed. We are running out of time efficiently address this issue and we strongly recommend that it is completed prior to the renewal application in the adjacent 2.3GHz spectrum licensed band in July 2028.

## **Preliminary replanning**

37. Optus acknowledges the continued inclusion of the 1.5GHz and 1800MHz and 2GHz outsidess of spectrum licensed areas in the planning process. We acknowledge the ACMA's activities in these bands and will maintain a watching brief.

### 1.5GHz (1427–1535MHz)

38. Optus acknowledges ACMA's plan to commence consultation on options for use of the 1.5GHz band (1427-1535MHz) and looks forward for this to be made available.

### 1800MHz (1710–1785MHz and 1805–1880MHz) and 2GHz (1920–1980MHz and 2110–2170MHz) outside of spectrum-licensed areas

39. Optus welcomed the review of planning arrangements outside of spectrum licensed areas in the 1800MHz and 2GHz bands in June 2024.

40. Optus submitted a response encouraging the ACMA to consider going beyond these policy-level changes and to review the entire framework in relation to the long-term public interest.
41. This included reallocating spectrum from apparatus to spectrum licensing, via administrative re-allocation. This would be particularly beneficial in regional areas in the lower 2 x 40MHz of the 2GHz band where MNOs have already deployed extensive networks that are currently authorised by PTS apparatus licences.
42. Optus acknowledges the ACMA's delay in the release of an outcomes paper from Q1 2025 to Q3 2025 in order to consider the opinions and data identified during the consultation process.
43. Optus fully supports the ACMA's position in taking extra time to ensure that the right outcomes are delivered and that the options are carefully considered. We encourage the ACMA to reinvigorate engagement with MNOs and other interested parties prior to the release of the outcomes paper.

## **Implementation stage**

44. Optus acknowledges the progression of the 1.9GHz, 2GHz MSS, 3.4-4.0GHz and Upper 6GHz bands in the planning process. We acknowledge the ACMA's activities in these bands and will maintain a watching brief.

### 1.9GHz (1880 – 1920MHz)

45. Optus acknowledges the ACMA's progression of the 1.9GHz band to the Implementation stage and the Q2 2025 consultation on creating a framework to support rail services in 1900-1910MHz, updating RALI FX19 to include indoor short-range WBB in 1900-1920MHz and updating RALI FX3 to reflect planning decisions related to fixed link operation. We look forward to the formalising of arrangements for rail services in the 1.9GHz band in Q3 2025.

### 2GHz MSS (1980–2010MHz and 2170–2200MHz)

46. Optus broadly supports the ACMA's approach to spectrum in this band.
47. Optus notes the sole inclusion of 2GHz MSS band in the forward allocation plan, with consultation on the technical framework and a proposed allocation design to commence in Q2 2025, with a view to allocating licences in 2026.

### 3.4 – 4.0GHz

48. Optus acknowledges the significant program of work that the ACMA has undertaken to allocate the 3.4 to 4.0GHz, which is key spectrum identified for WBB use. Optus has long advocated for harmonisation across the entirety of C-band (3.3GHz to 3.8GHz) and for allocations of at least 100MHz contiguous bandwidth to each MNO and NBN Co, consistent with 3GPP standards and this is required nationally.
49. There are longstanding issues that need to be addressed to improve the utility and efficiency of spectrum in this band. These include:
  - (a) Non-aligned geographic boundaries between 3.4GHz, 3.6GHz and 3.7GHz
  - (b) Misalignment of metro definitions in 3.7GHz and regional definitions in 3.4GHz

- (c) Disparate licence holdings and licence conditions across the entire C-band
50. Since the introduction of AWLs, Optus has experienced coordination difficulties due to a combination of the allocation constraints placed on the ACMA by the RALI and licensing arrangements. This has resulted in cases where Optus has been unable to deploy within AWL areas because of novel and spectrally inefficient allocations by other licensees.
51. Optus has long advocated for a revision of band planning arrangements in the 3.4-4.0GHz band. This is a spectrum band that is highly fragmented across multiple domains including, but not limited to, spectrum boundaries, licensed bandwidths, multiple uses and users, and different licence conditions for spectrum within the same sub-band. As a result, this has increased interference risks and coordination issues, created dead zones and the need for guard bands to be established.
52. As a result, Optus channel sizes for 5G mid-band regional deployment are generally limited to between 30 and 60MHz and the non-aligned geographic areas across the entirety of C-band. These, and other factors, combine to undermine the tradability of the spectrum products, hence hindering licensee-led defragmentation activities.
53. Optus encourages the ACMA to carefully consider how it can assist with promoting the use of this spectrum for WBB for the long-term public benefit, as the current market mechanisms alone are unlikely to deliver this outcome.
54. Optus continues to object to the imposition of limitations on the use of spectrum between 3.7 and 4.2GHz band in and around airports to protect old radio altimeters used by the aviation sector and call for the ACMA to help ensure that all these mitigations can be lifted by no later than March 2026 as proposed.
55. We look forward to working with the ACMA to further progress improvements to the band and licensing arrangements that exist in this band.
56. Optus strongly urges the ACMA to address these concerns well in advance of the renewal application period for the expiry of these licences, expected in December 2028.

### Upper 6GHz

57. Optus acknowledges the ACMA's decision for the reservation of the frequency range 6585-7100MHz from the upper 6GHz band (6425-7125MHz) for WA WBB use. We agree with the ACMA's recognition of the importance of future 5G/6G use to cater for the growing data demands with higher speeds and lower latencies, as well as supporting key policy priorities.
58. However, we reiterate our position regarding the immediate implementation of the proposed October 2025 allocation of the band below 6585MHz to Wi-Fi. We recommend the ACMA delay modifications to the LIPD to incorporate this change until the final international position on this band is completed. This is to maintain consistency with the ACMA's stated position on making new band decisions in line with international developments.
59. If the ACMA decision proceeds, this may risk:
- (a) Non-alignment with international development and equipment ecosystems;
  - (b) Unsupported Wi-Fi configurations by RLAN manufacturers; and

- (c) Inability to deliver 200MHz wide WBB channels to achieve desired throughput outcomes for 5G-A and in future 6G.
- 60. Should the ACMA choose to revise its position on upper 6GHz, this would necessarily delay the proposed consultation on LIPD and AWL licensing arrangements in this band.
- 61. Notwithstanding the comment above, the ACMA should delay any consultation on licensing arrangements in this band until the international co-existence and coordination criteria have been established.

## OTHER ISSUES: PRICING AND COMPLIANCE PRIORITIES

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### Implementation of the Spectrum Pricing Review

62. There is no one-size-fits-all approach that suits all spectrum bands today or would fit the uses for different spectrum bands that change over time; therefore it is important that transparency over the arrangements to be applied in each pricing decision should be encouraged. This will also have important implications, with particular regard to continuity of service, price, and investment incentives for existing licensees.
63. Optus supports the ongoing implementation of the recommendations of the Spectrum Pricing Review, as guided through formal consultations including periodic reviews of bands to ensure that price levels remain appropriate over time.
64. For 2025-2026 these will include maintaining the tax regimes for annual updates of apparatus licence taxes based on the new population-based methodology, as well as updating the spectrum licence tax to adjust for the annual EME component amount.

### Compliance priorities

65. Optus supports the ongoing compliance focus for 5G EME compliance and interference activities to continue in 2025-2026. With the rollout of 5G networks, there will be continued need for public awareness on the safety of 5G technology.