

## Five-year spectrum outlook 2024–29

Submission | ACMA

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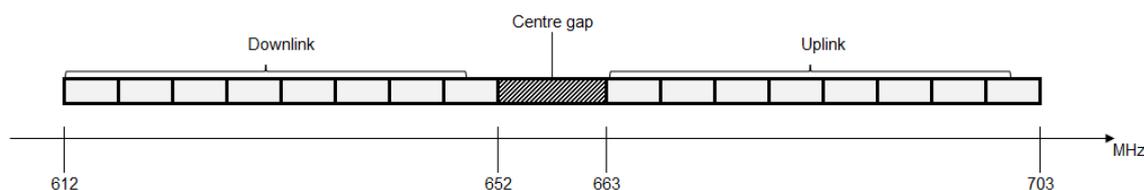
## Introduction

1. Thank you for the opportunity to provide feedback on ACMA's draft Five-year spectrum outlook 2024–29 (**the draft**).
2. Spark is a New Zealand mobile network provider and actively participates in international bodies.
3. Aligning band planning and allocations across major international markets is important for promoting the efficient use of spectrum, particularly for small open economies that rely on scale achieved in major overseas markets.
4. Accordingly, while we acknowledge that spectrum policy and planning is for relevant national authorities, we wanted to highlight the latest developments relating to the 600MHz and 6GHz bands discussed in the draft.

## 600MHz band (617–698 MHz)

5. ACMA plans to continue engaging with industry and government and monitoring international developments in the 600 MHz band, including usage trends. The draft helpfully summarises international developments relating to the band.
6. The ACMA spectrum outlook document mentions 3GPP band n 71 in connection with the 600 MHz band. However, ACMA may also wish to consider the recent 3GPP standardised band n 105 in the range. The n 105 arrangement maximises available sub 1 GHz spectrum by adding a further (2 x 5) 10 MHz to the band and is supported by base station equipment vendors, chip set manufacturers and device vendors.
7. With sub-1GHz spectrum increasingly valuable for early wide area deployments, the incremental value of that extra 10MHz will be significant. This is particularly so in countries such as Australia and New Zealand where dispersed communities results in an above-average reliance on wide area, low-band spectrum.

**Figure 1: band n 105**



8. Band n 105 has further been defined so that it can be aggregated with other bands in band combinations that can be implemented in 5G devices. For example, in carrier aggregation combinations that include n 1, 3, 7, 40, 78, 257 and 258. There is ongoing work in study groups to add n 105 CA with other sub 1 GHz bands.
9. In light of these developments, we recommend that ACMA consider the allocation of n 105 to mobile as an option for Australia.

## 6GHz band (5925–7125 MHz)

10. ACMA further reports that stakeholder feedback reveals a diverse range of views on the preferred use of the upper 6 GHz band and plans to consult on potential options for the band in Q2 2024.
11. Again, we recommend that the ACMA monitor recent international developments relating to this band which make it ideal for providing significant capacity and supports wide area network use cases:
  - a. The upper part of the 6Ghz band has been widely adopted for IMT use. WRC 23 agreed to make the 6425-7125 MHz (n 104) range available for IMT use in Region 1. Further, several Region 3 countries have joined country footnotes that permits the use of this band for IMT in these countries and technical conditions is captured in RESOLUTION COM4/7 (WRC-23) ensure protection for FSS (Earth-to-space) services.
  - b. This is a 3GPP standardised band for mobile use. As 5G radio carriers can only be deployed with other radio carriers, the standardisation of band combinations with 5G bands such as n 105 is important. This standardisation is currently underway in 3GPP, the first combination undergoing standardisation being n 78 and n 104 bands. We also note that CA band combinations n 105 and other bands will follow, and.
  - c. We expect to see strong continued growth in demand for mobile data. Ericsson<sup>1</sup> reports that global mobile network data traffic is expected to reach 160 EB per month at the end of 2023, and 563 EB per month by the end of 2029. Further, new extended reality services were standardised in 3GPP Rel. 19 that require significant bandwidth. For example, entry level Virtual Reality services would require > 50 Mbps per user with a conservative 300:1 compression.
12. As planning within international standards bodies for 6G advances it is becoming clear that there is little available spectrum to support the technologies very high-bandwidth requirements. While some countries may have the option of relying on spectrum bands in the 10GHz-30GHz range, the economics of wide area deployments in those ranges in Australia and New Zealand are challenged.
13. It is our view the upper 6G band (6425 - 7125 MHz) should be made available for IMT use as the foundation for wide area deployment of 5G Advanced and 6G. While WRC 2027 is considering additional bands for 6G, given the large number of incumbents in the alternative bands being considered, the upper 6 GHz band remains an important option for supporting 5G Advanced and 6G technologies.
14. We recommend the ACMA consider allocation 6425 - 7125 MHz to mobile use in Australia.

**[end]**

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<sup>1</sup> Ericsson. Mobility Report, November 2023. <https://www.ericsson.com/4ae12c/assets/local/reports-papers/mobility-report/documents/2023/ericsson-mobility-report-november-2023.pdf>