



Ericsson Submission to the ACMA Draft Five Year Spectrum Outlook 2025-30

April 2025



Introduction

- Ericsson welcomes the opportunity to provide a response to the Australian Communications and Media Authority's draft Five Year Spectrum Outlook 2025-30 (**Draft FYSO**).
- Ericsson supports the **FYSO** format and considers it a useful tool to determine progress on spectrum band allocations and trends in the Australian market.
- Our response includes reference to past Ericsson submissions that support defining an allocation timeframe for the 600MHz band and technical arrangements for the 3.4 – 4.0 GHz band.
- Ericsson also supports the submission made to the **Draft FYSO** by the Australian Mobile Telecommunications Association (**AMTA**).

Executive Summary

- With respect to the ACMA's 2024 decision to allocate part of the Upper 6 GHz band for Radio Local Area Network (**RLAN**), Ericsson recommends the ACMA delay licensing RLAN use until there is further global evidence of:
 - coexistence of RLAN and International Mobile Telecommunications (**IMT**) within this frequency range, and
 - a product eco-system that supports co-existence.

Ericsson notes that, at this stage, Europe is the only major comparable market in which a split of **RLAN** and **IMT** is being considered for the Upper 6 GHz band. Noting that a decision on co-existence within the same band within Europe is not likely until 2027, and in the absence of clarity about these issues, Ericsson strongly recommends the **ACMA** refrain from making any licensing decisions that will set Australia apart from international best practice. We further note that any coexistence decision made prematurely of the European decision-making process, cannot be reversed for **RLAN** if further information about the feasibility of co-existence comes to light.

- Ericsson urges the **ACMA** to urgently review the 2.5 GHz band Spectrum Licence Technical Framework (**SLTF**) to allow for Advanced Antenna Systems (**AAS**) devices.
- Ericsson notes the limitations on the availability of spectrum for **IMT** use, as evidenced by the ***AMTA Spectrum Policy Paper*** and the growing demand for **IMT**-based applications as outlined in the *Ericsson Mobility Report* as well as forecast requirements for 6G applications by 2030.¹ While Ericsson acknowledge potential for new mid-band capacity exists in the Upper 6 GHz band for **IMT**, we also see additional capacity for low band being supported by the allocation of the 600 MHz band for **IMT**. Accordingly, Ericsson suggests that consideration of the future use of the 600 MHz band be expedited to the Initial Investigation phase as part of the **ACMA** Annual Work Plan.
- Ericsson notes the forthcoming arrival of sixth generation (6G) **IMT** technologies, and their potentially transformative impact upon enterprise, industry and, in turn, national economies. For this reason, Ericsson recommends the **ACMA** expedite the review of spectrum for 6G bands, and specifically suggests the 7125 MHz- 8400 MHz frequency range be expedited to the Initial Investigation stage within the **ACMA**'s Annual Work

¹ AMTA, 2024, [Spectrum Policy Paper](#), [Ericsson Mobility Report](#), November 2024; Ericsson [6G Spectrum -Enabling the Future Mobile Life Beyond 2030](#), and [Ericsson Co-creating a Cyber-Physical World](#)



Plan so that it can be ready for allocation to support 6G use in 2030, the estimated commercial launch of 6G.

- Ericsson strongly recommends the **ACMA** review the spurious emissions domain in licences for spectrum license holders in the 3.4 – 4.0 GHz band and align this with area wide license conditions by changing the upper edge to 4040 MHz. This recommendation is supported by **AMTA**, other vendors and existing spectrum license holders (for both IMT and Fixed Wireless Access (**FWA**)).

Market Update

The 2024 Ericsson Mobility Report² finds:

- In Q4 2024, the number of mobile subscriptions totalled close to 8.7 billion, with a net addition of 41 million subscriptions during the quarter.
- Global mobile subscription penetration was 107 percent with 5G global population coverage reaching 45%.
- The number of mobile broadband subscriptions grew by about 80 million in the quarter to reach 7.8 billion, a year-on-year increase of 4 percent. Mobile broadband now accounts for 90 percent of all mobile subscriptions (representing growth of 330 m subscribers since 2023).
- 5G subscriptions grew by 162 million during the quarter, lifting the total to almost 2.3 billion. This represents 26 percent of all mobile subscriptions. Around 340 communications service providers have launched commercial 5G services and over 60 have deployed or launched 5G standalone (**SA**) networks.
- Meanwhile, 4G subscriptions continued to decline during Q4, falling by 54 million as subscribers migrate to 5G. The total number of 4G subscriptions is around 5 billion, representing about 57 percent of all mobile subscriptions. We expect that by 2027, 5G subscriptions will outnumber 4G subscriptions.
- In South-East Asia and Oceania, the 5G landscape is evolving and 5G subscriptions are predicted to reach around 680 million in 2030.
- Mobile network data traffic grew 20 percent between Q4 2023 and Q4 2024, reaching 164 EB per month.
- Generative AI is likely to significantly increase future mobile network traffic, particularly through increased video consumption and growing uplink requirements.
- Currently in its early stages of commercialisation, network slicing has advanced to the extent that leading international service providers are currently leveraging its capabilities within commercial networks. This allows them to address a wide range of use cases that benefit from differentiated connectivity.
- Leading international service providers are utilizing their 5G **SA** networks to provide differentiated connectivity services, allowing them to grow their revenue through premium network performance.
- From a capacity perspective, a compounding annual growth rate of 13 percent in mobile data traffic per smartphone in South-East Asia and Oceania between 2024 and 2030, will create network capacity constraints unless additional spectrum becomes available.

² [Ericsson Mobility Report](#), November 2024.



- Noting the growth in traffic per smartphone, the increasing uptake of AI and the emergence of 6G in the near future, Ericsson strongly supports efforts to release a pipeline of spectrum for **IMT** use as detailed by **AMTA's Spectrum Policy Paper**.³

Response

Policy and Regulation

Net Zero Emissions

- Ericsson supports the **ACMA's** commitment to reduce carbon dioxide emissions through the use of more efficient radio equipment. This aligns with Ericsson's own commitments to reduced carbon dioxide emissions that include commitments to:
 - be Net Zero across our value chain by 2040.
 - cut emissions by 50% in our supply chain and to become Net Zero in our own activities by 2030.⁴
 - a supplier climate target for 350 of our high emitting and strategic suppliers to halve their absolute greenhouse gas emissions by 2030, with a requirement to make their commitment public.
- Ericsson also notes that the ACMA's adoption of non-3GPP bespoke emissions level licence requirements typically result in increased power usage, with adverse consequences for carbon dioxide emissions. For example, **AMTA** referred to this in its recent submission on the 700 MHz band spectrum licence technical framework.⁵

Broadcast spectrum

- The *Ericsson Mobility Report*; Ericsson's projected spectrum requirements for 6G; and **AMTA's Spectrum Policy Paper** provide evidence for the growing need to identify additional spectrum to support **IMT** in Australia.⁶
- **IMT** needs further spectrum as the use cases – and data throughout requirements thereof – for **IMT** continue to expand. Noting the role of mobile networks as key economic enablers, we see that spectrum for **IMT** plays a critical role in lifting Australia's multi-factor productivity and potential for economic growth.⁷
- Therefore, Ericsson suggests that the 600 MHz band be restated as a future **IMT** band and expedited for review. We expand on this below.

Market and Technology Drivers

Wireless (mobile and fixed) broadband

- Ericsson supports the **ACMA's** continued monitoring of developments in the upper 6 GHz band internationally, and in particular, how **RLAN** and **IMT** will coexist in adjacent spectrum.
- We note the **ACMA's** decisions to allow **RLAN** and **IMT** in the 6 GHz bands with yet to be defined technical specifications. Ericsson recommends that these two allocations should be implemented at the same time, enabling an approach where all Point-to-Point, **RLAN**

³ AMTA, 2024, [Spectrum Policy Paper](#).

⁴ Off a 2020 baseline.

⁵ AMTA, 2025, Submission on the Review of the 700 MHz band spectrum licence technical framework, p. 7.

⁶ Ericsson [6G Spectrum -Enabling the Future Mobile Life Beyond 2030](#), and [Ericsson Co-creating a Cyber-Physical World](#); AMTA, 2024, [Spectrum Policy Paper](#).

⁷ For example, AMTA/Deloitte [5G Unleashed](#); [PWC Australian Economic Impact of 5G](#)



and **IMT** issues are considered wholistically. This allows for European considerations regarding the use of the band – including a potential frequency separation and co-existence are defined – and in turn, settled. This process will inform the question of whether global product eco-systems will develop to support the bespoke Australian allocation of spectrum in the Upper 6 GHz band.

- In our view, a process for deciding the use of the 6425-7125 MHz range should be aligned with international practices (for example Europe) where the band is being studied following the European Commission's (EC) *Mandate to the [European Conference of Postal and Telecommunications Administrators (CEPT) to study the feasibility of and develop least restrictive harmonised technical conditions for the provision of wireless broadband by terrestrial systems capable of providing wireless broadband electronic communications services and by wireless access systems, including Radio Local Area Networks (Mandate)]*.⁸
- The **Mandate** specifies three tasks to be performed by CEPT, in particular Electronic Communications Committee (ECC) CEPT Working Group 1 (**PT1**):
 - **Task 1** – study and assessment of coexistence and compatibility of
 - terrestrial systems capable of providing **WBB** Electronic Communications Services (**ECS**) with incumbent spectrum users.
 - Wireless Access Services (**WAS**)/**RLANs** with incumbent spectrum users, with delivery date March 2026.
 - **Task 2** – Study of feasibility and scenarios for the potential shared use between terrestrial systems capable of providing **WBB ECS** and **WAS/RLANs**, with delivery date July (or November) 2026.
 - **Task 3** – Development of harmonised technical conditions, with delivery date July 2027.
- The **Mandate** requires the **CEPT** to collaborate actively with all relevant stakeholders, including the Radio Spectrum Policy Group (**RSPG**) and European Telecommunications Standards Institute (**ETSI**). The **RSPG**, which is an advisory group to the European Commission, is in parallel, working on a "[l]ong-term vision for the upper 6 GHz band". A Draft Opinion for Public consultation was scheduled for February 2025, but delivery has been delayed and a draft opinion has not yet been released.
- In our view, Australia will benefit from aligning with global developments in relation to the Upper 6 GHz band. In order to be able to benefit from a global product ecosystem, Australia should avoid constraining itself to decisions - including 6425-6585 MHz - as part of the current consultation on the Remaking of Low-Interference Potential (**LIPD**) class licenses, which may result in devices entering use in Australia which could not be reversed if **CEPT** finds co-existence concerns in their studies.

Spectrum needs for 6G

- 6G technology will be available by around 2030, offering higher bit rates and lower latency. This technology will need approximately 1.5-2.2 GHz of additional wide-area spectrum, to enable mobility for many capacity-demanding 6G use cases at scale.⁹ To enable Australia to maximize the opportunities from being an early adopter of 6G, it is critical that additional wide-area spectrum is allocated for 6G in a timely manner.

⁸ CEPT, 2024, [Mandate to CEPT upper 6 GHz band](#)

⁹ For more information refer to Ericsson [6G Spectrum -Enabling the Future Mobile Life Beyond 2030](#), and [Ericsson Co-creating a Cyber-Physical World](#)



- Ericsson recommends the **ACMA** prioritize the release of spectrum for 6G noting that spectrum allocation is a process that takes time and should therefore be commenced as soon as practicable with maximum time for implementation.
- Further, the technical work on AI 1.7 within ITU-R WP 5D is crucial noting that some existing services are global in nature and many national regulators will look to results of these studies before making decisions. Ericsson encourages all regulators to follow and support this work.
- Specifically, we regard the 7.125-8.4 GHz frequency range as the highest priority for new **IMT** spectrum under AI 1.7 due to its proximity to mid-bands offering a balance between coverage and capacity. However, sharing with incumbents needs to be considered and studied. This band will have similar qualities to other mid-bands (such as the 3.4 GHz) and will be required for use by 6G in the short- to medium- term.

Private Cellular Networks

- Ericsson supports the development of opportunities for Australian enterprise to secure spectrum for private cellular networks. 5G delivered via cellular networks provides the connectivity and reliability under industrial scale loads and is applicable to all size enterprises. This sets 5G apart from alternatives such as Wi-Fi, which does not provide the service control, speed, latency, power or consistency required in many industrial applications.
- For Australian businesses to innovate and for industries to become more productive – and fulfill the collective objectives of key government strategies such as *the National Science Statement*, *Future Made in Australia* agenda, *Employment White Paper* and *National Reconstruction Fund* – private cellular networks must be enabled.
- For these reasons, Ericsson agrees with the proposed approach to balance spectrum to increase **IMT** network capacity and support new enterprise use cases, and support national economic innovation and productivity benefits via enterprise adoption of programmable networks.

Spectrum Bands supporting Wireless Broadband

- Ericsson recommends the **ACMA** update its licencing of spectrum bands to keep up with new and emerging technologies such as wideband Power Amplifiers with differing technical requirements, which can span multiple Spectrum Licenced bands, or Spectrum and Area-Wide License (**AWL**) licenced bands.
- Technical frameworks, that spectrum licence holders are required to comply with as a condition of their licences, are drafted with respect to their own band and do not consider and current more efficient radio types which span multiple bands that 3GPP supports. The present situation is limiting the industry's ability to take full advantage of the most efficient and cutting-edge technology available.
- Separately, while we welcome the opportunity to engage with the **ACMA** on licencing conditions through periodic technical liaison groups (**TLGs**), it is our observation that there is an opportunity to streamline the **TLG's** decision making process. In the case of the 2.5 GHz band, a **TLG** has not yet been established.
- For example, the technology is now ahead of the Australian licence conditions, meaning that the Australian telecommunications industry is lagging its global peers in its ability to use cutting edge **IMT** technology such as **AAS** radios.



Spectrum sharing

- In the context of **RLAN** and Wide Area (**WA**) Wireless Broadband (**WBB**) sharing, Ericsson agrees that geographic segmentation is not a viable option. This is because Wi-Fi devices can be nomadic either by design or by use case. **IMT** requires deterministic spectrum which cannot be assured when **RLAN** devices are used under a **LIPD** class licence. For the **RLAN LIPD** class licence type proposed, there is no fixed location a Wi-Fi device must operate within, and enforcement of indoor only operation is not possible.

Radio and TV services

- Ericsson supports the proposed **MPEG2** to **MPEG4** change to support spectrum efficiency with a goal of a future digital dividend, noting the need for more spectrum for **IMT** to relieve capacity constraints in low-bands, where end users at the edge of coverage cannot access mid-bands.
- This change will assist Australia to reach its economic potential and fulfill stated government policy objectives (as referenced earlier). Noting the role of mobile networks as key economic enablers, we see that spectrum for **IMT** plays a critical role in lifting Australia's multi-factor productivity and potential for economic growth.¹⁰

Annual Work Program

600 MHz

- We refer to our comments above (**Broadcast Spectrum**, p. 4) in relation to the potential of this band for **IMT** use and Australia's growing demand and need for spectrum for **IMT**.¹¹
- Noting this, Ericsson reiterates our view as expressed in our Draft **FYSO** (2024-25) response that the 600 MHz band should be expedited to the Initial Investigation stage, for **IMT** use, due to no other low band spectrum being available to boost **IMT** capacity. We also note Minister Rowland's October 2024 commitment to investigate the potential for a digital dividend and suggest that to help meet the principles of the Minister's commitment, escalation to the Initial Investigation stage of this band is warranted.¹²

4 GHz

- We believe that this band is potentially of great value to **IMT** due to its mid-band characteristics. Further a product ecosystem already exists for the frequency range 4400-5000 MHz (3GPP n79). However, associated technical conditions on the band, should not constrain wide-area macro deployments, which could naturally limit the advantages available from its release.

WRC-27 AI 1.7

- Ericsson supports these bands being in the Monitoring stage.
- However, we specifically note the 7125 MHz- 8400 MHz range and its potential for **IMT**, in particular 6G technologies, and suggest it is moved into the Initial Investigation stage in 2026-27 to ensure it can be ready for 6G launch.
- While Ericsson welcomes all efforts to explore new opportunities for spectrum for **IMT**, we do not believe the 14.8-15.35 GHz band has the same level of urgency as the 4 GHz and 7125-8400 MHz bands and therefore urge the **ACMA** to prioritise spectrum below 8400 MHz to meet the growing needs of **IMT**.

¹⁰ For example, AMTA/Deloitte [5G Unleashed](#); [PWC Australian Economic Impact of 5G](#)

¹¹ Ericsson 2024 Submission to THE ACMA Draft FYSO 2024-25.

¹² [Rowland, M., 2024, Speech to THE ACMA RadComms Conference 2024](#)



- We do however acknowledge the potential value of 14.8 GHz-15.35 GHz as a complement to lower band spectrum by offering additional capacity.

2300 MHz – 2302MHz

- Ericsson supports the 2300 MHz and 2302MHz (**2.3 GHz**) frequency range becoming Spectrum Licensed to ensure the entire band becomes more spectrally efficient and also to support 5G channel bandwidths.
- Ericsson recommends the 2.3GHz band be moved to Preliminary Replanning for 2026-27.
- When this is undertaken, Ericsson recommends aligning licence emissions requirements with 3GPP 36/38 series wide area base station standards below 2.3GHz and above 2400 MHz. A spectrum licence condition update to align with 3GPP emissions standards would also support reducing power consumption and carbon emissions by MNOs and the National Broadband Network (**nbn**).

1800 MHz and 2 GHz Outside Spectrum Licenced Areas

- We are eagerly awaiting the outcomes paper and expecting alignment with 3GPP standards in these areas rather than following licence requirements in spectrum licences for these bands.

1.9 GHz

- With respect to the changes proposed in the 1.9GHz band, Ericsson's supports the formalising of arrangements for rail services but without making changes to 1800 MHz and 2 GHz spectrum licences to accommodate this.
- Further, Ericsson recommends any review of the 1.9GHz band should ensure:
 - no additional restrictions are placed on 1800 MHz base station transmitters.
 - base Station receivers in the 2 GHz band are protected from interference which can be caused by transmitters in the 1.9 GHz band, including both the unwanted emissions and blocking effects.

3.4 – 4.0 GHz band

- Ericsson strongly recommends the **ACMA** review the spurious emissions domain in licences for spectrum licence holders and align this within place area wide licence conditions by changing the upper edge to 4040 MHz. This is supported by **AMTA**, other vendors and existing spectrum licence holders.
- This was highlighted in Ericsson's 2024 response to the Draft FYSO (2024-25).¹³ However, the matter remains unresolved and there is no reference to it in the **Draft FYSO (2025-26)**. We recommend this be considered as a high priority.

Optimising established planning frameworks

Review of spectrum licence technical frameworks

- We support the review and appreciate the **ACMA** for their work to change licencing conditions to match the latest technologies. We reiterate Ericsson's view that **TLG's** are a vital opportunity for the **ACMA** to usher in the use of cutting-edge technology and facilitate its deployment by industry, in turn developing competitive edges with its international competitors.

¹³ Ericsson 2024 Submission to the ACMA Draft FYSO 2024-25.



- Industry is still awaiting the 2.5GHz band **TLG** (due to start Q2 2025) to modernise the licence requirements for Advanced Antenna System (**AAS**) radios. Ericsson looks forward to this work commencing as a matter of priority, and that a streamlined defined process, with target dates for consultation and decision, are agreed with industry.

Compliance Priorities

- We urge the **ACMA** to continue to focus on the use of illegal telecommunications equipment.
- We note that illegal mobile phone repeaters are widely available in Australia, despite their non-compliance with local regulation. As the **ACMA** is aware, these can cause interference to mobile base stations by amplifying noise, frustrating the quality of services available to end-users with compliant equipment.

International Engagement and Standards/Future Use of the Upper 6 GHz band

- Ericsson notes the **ACMA**'s commitment to engaging globally on licensing trends and issues (p. 9 of Draft FYSO), and we commend the Australia's Government's engagement in critical international radio fora through the **ACMA**. This is essential to ensuring Australia is able to position itself to strategically optimise its alignment with emerging global trends and standards. In turn, alignment with international standards allows domestic **MNOs**, and in turn their millions of customers, to benefit from economies of scale in radio equipment production, simplicity, efficiency and improved safety of installation. Therefore, we implore the **ACMA** to follow international standards in full and not establish Australian variants (bespoke requirement) of international decisions or standards.
- For that reason, Ericsson is requesting that with respect to the **ACMA**'s decision on the use of the upper 6 GHz band, the use of n104 3GPP radio equipment within the band, subject to **IMT** being allocated, is supported