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AMTA Submission

Australian Communications & Media Authority

Draft Five-Year Spectrum Outlook

2021-26



About AMTA

The Australian Mobile Telecommunications Association (AMTA) is the peak industry body representing Australia's mobile telecommunications industry. Its mission is to promote an environmentally, socially and economically responsible, successful and sustainable mobile telecommunications industry in Australia, with members including the mobile network operators and service providers, handset manufacturers, network equipment suppliers, retail outlets and other suppliers to the industry. For more details about AMTA, see <http://www.amta.org.au>.



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Introduction

AMTA welcomes the opportunity to provide comments on the draft Five Year Spectrum Outlook (FYSO) for 2021-26, recognising in particular, that this will be the first FYSO to be determined as a work program under the auspices of the new legislative framework established by the *Radiocommunications Legislation Amendment (Reform and Modernisation) Act 2020* (the Modernisation Act), and noting with appreciation, the ACMA's well established practice of publishing a FYSO and detailed work program. We have provided commentary in relation to Parts 1 and 2 of the FYSO below.

Part 1: The year of 5G

Investment in 5G drives productivity and economic growth

In this 'year of 5G' substantial private investment by Mobile Network Operators (MNOs) will continue to be the main enabler of mobile connectivity and the digitalisation of Australian businesses and the economy. As the MNOs continue to deploy 5G networks and adoption of 5G applications increases across industries and businesses, we see great value and opportunity for the Australian economy to be derived from mobile connectivity in the post-pandemic recovery.

Deloitte Access Economics estimates that the productivity impact of mobile will be equivalent to \$2 500 for every Australian by 2023. This amounts to a total of \$65 billion of additional GDP by 2023, or 3.1% increase in GDP which is more than the 2.8% contribution of the agricultural sector in 2018.¹

The same research found that the mobile industry continues to make a significant contribution to Australia's economy and has an enabling impact on other industries, with an estimated contribution from mobile of \$22.9 billion of value added to GDP in 2017-18. This figure includes \$8.2 billion contributed directly from mobile industry activities as well as \$14.7 billion supported through indirect activity in related sectors and across the economy. The mobile industry also supported approximately 116,100 full time equivalent employees. For every full-time employee in the mobile industry there are 3.7 full time roles supported in other sectors.²

Similarly, PwC predicts that the impact of 5G on Australia's GDP will amount to US\$20bn by 2030 with a total global impact of US\$1.3tn.³ Looking at industries, PwC forecast the following impacts by 2030 from 5G:

- Healthcare by US\$9bn
- Industrial manufacturing by \$2bn

¹ Deloitte Access Economics, [Mobile Nation 2019- The 5G Future](#), 2019

² Ibid

³ [The global economic impact of 5G](#). Powering your tomorrow. PwC 2021 p7 and p5

- Smart utilities \$4bn
- Consumer and media \$4bn
- Financial services \$2bn

PwC observes:

“These numbers quantify impact, but perhaps, more important, our study findings reflect the value of 5G. The new levels of connectivity and collaboration that 5G enables will amplify and deepen the insight that organisations can gain from connected technologies. Companies will be able to see, attempt and achieve more, opening up new opportunities for growth as they rethink and reconfigure the way they do business in the post-pandemic world. 5G will be a key part of their new operating environment and technology toolkit.”⁴

And:

“With 5G, enterprises can take a fresh look at how they operate, reconsidering product offerings, go-to-market approaches, and even the industries and geographies in which they manoeuvre. Collaboration and partnerships will be key: as we highlighted in Making 5G pay, 5G opens the way to a wide array of business and revenue models powered by collaborative relationships between telecoms and partners in other sectors. Again, a positive and willing attitude from policy-makers will be vital.”⁵

Demand for mobile broadband is unrelenting

AMTA notes that demand for mobile data continues to be strong despite the economic and social impacts of the global pandemic. This aligns with Ericsson’s most recent global Mobility Report⁶ that found, despite uncertainties caused by the COVID-19 pandemic, the pace of introducing new 5G functionality increased in 2020 in both the network and device domains.

Ericsson reported that by the end of 2020:

- Mobile network data traffic grew 50 percent between Q3 2019 and Q3 2020.
- more than 100 operators had announced commercial 5G service launches and the first 5G standalone networks were launched.
- 200 service providers had launched FWA services, with an estimated 60 million FWA connections and FWA data traffic representing an estimated 15 percent of global mobile network data traffic.⁷

⁴ [The global economic impact of 5G](#). Powering your tomorrow. PwC 2021 p6

⁵ [The global economic impact of 5G](#). Powering your tomorrow. PwC 2021 p19

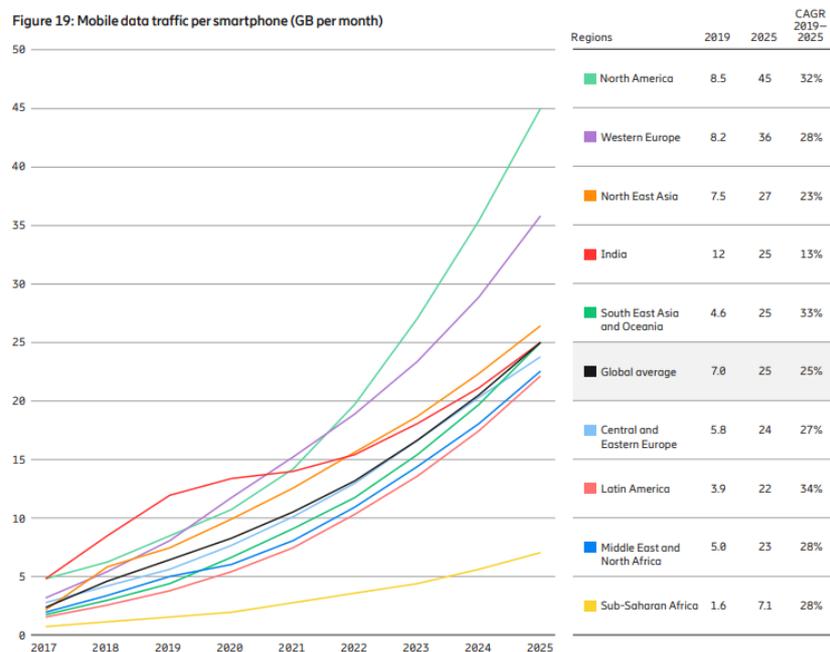
⁶ [Ericsson Mobility Report, Nov 2020](#)

⁷ Ibid

By 2026, Ericsson forecast:

- 5G networks will carry more than half of the world’s mobile data traffic.
- In South East Asia and Oceania, 5G subscriptions will account for more than 30 percent of all mobile subscriptions, compared with 40 percent of all mobile subscriptions worldwide.
- FWA connections will reach more than 180 million and account for a quarter of all mobile network data traffic globally. (Out of these, 5G FWA connections are expected to grow to more than 70 million by 2026, representing around 40 percent of total FWA connections.)
- Over the long term, traffic growth will be driven by both the rising number of smartphone subscriptions and an increasing average data volume per subscription, fueled primarily by more viewing of video content.
- Video traffic currently accounts for 66 percent of all mobile data traffic and is forecast to account for 77 percent of all mobile data traffic by 2026.⁸

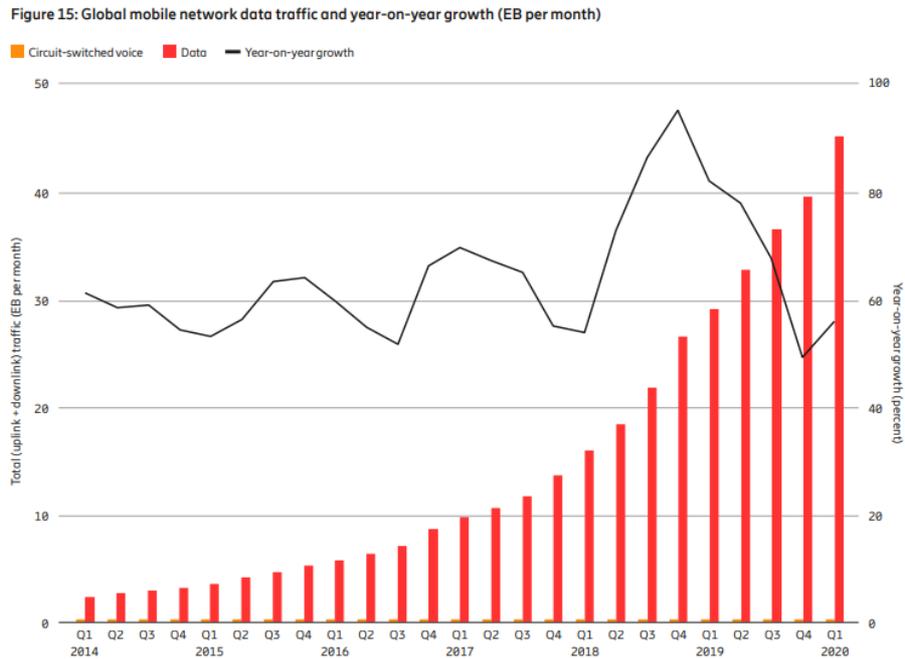
While the take up of 5G in some markets can reflect consumers upgrading from 3G/4G, it is notable that Ericsson also forecast a 33% CAGR in mobile data traffic per smartphone for Australia and our region:



This is a huge increase in the demand for data usage in our region that reflects the established and continuing trend of growth in global network data traffic, illustrated in the graph below, which we

⁸ Ibid

submit indicates the need for more spectrum to be considered for allocation to IMT, both globally and domestically.



AMTA agrees with the ACMA’s assessment that “over the next 5 years, data growth will inform continued investment in 5G networks and complementary technologies are likely to spur spectrum demand” and that “Growing demand for data capacity remains a key environmental factor driving demand for new spectrum or changes to existing spectrum management arrangements.”⁹

Finally, we support the ACMA’s conclusion that “...further spectrum will be needed to support the growth in broadband applications and mobile data in the short and medium term”¹⁰. We would extend this conclusion to note that it is critical for the ACMA to also maintain its longer-term perspective and continue to look for consider potential future bands for IMT, through close consultation with MNOs and in alignment with global developments, particularly the outcomes of WRC-2023.

⁹ FYSO at pages 5 and 7.

¹⁰ FYSO at page 9.

Determining the highest value use of spectrum

The Modernisation Act has introduced an increased level of regulatory discretion for the ACMA in terms of both its roles in spectrum management activities as well as in its ability to determine the appropriate spectrum licensing arrangements for different spectrum bands. While we welcome this increased flexibility and its potential to lead to increased efficiency in how spectrum is managed, we are cautious about the need to match this with increased transparency around decision-making so that discretion is proportionately balanced with commensurate accountability.

In particular, we suggest that the ACMA could be more transparent with regard to how it determines the highest value use of any spectrum band. While we understand that such a calculation will always involve both qualitative and quantitative analysis (including factors that are difficult to quantify such as community interest, public safety/national interest and public policy considerations); we do believe that the ACMA should provide more information to stakeholders about how it determines highest value use. This would, in turn, enable the spectrum community to better understand at a more granular level, exactly what evidence we need to provide to the ACMA in terms of demonstrating demand for additional spectrum as well as justification for one use over another competing use for the same spectrum.

For example, we note in the recent ACMA 3700-4200 MHz outcomes paper there has been a disconnect between the ACMA's preliminary decision and AMTA's contributions to the demand quanta. AMTA also maintains reservations with the ACMA's proposal to use AWLs for LA WBB deployment for 3800-4000 MHz.

To summarise, AMTA disagrees with the ACMA's conclusion that 100 MHz of contiguous spectrum for each WA WBB operator is sufficient for this band and our submission¹¹ outlined evidence that supported the case for an allocation of at least 200 MHz mid-band spectrum per operator, by the middle of this decade, noting that in order to make contiguous allocations, a restack is required.

We therefore welcome further ACMA guidance and clarity on the types of information being sought from industry to ensure the information is relevant for informing the ACMA's decision making processes.

¹¹ AMTA submission to [IFC 22/2020](#), Planning Options for the 3700-4200 MHz band, 16 Sept 2020.

Part 2: The 2021-22 work program

AMTA notes the considerable number of activities in the work program and the corollary effect this has in terms of resource management for both the ACMA and for industry stakeholders. We appreciate the ACMA's efforts to balance progress of the work program activities with the need to ensure effective engagement with stakeholders via consultations and collaborative processes, including Technical Liaison Groups (TLGs). We note that challenge of resourcing is shared equally by the ACMA and stakeholders. We strongly support the need for the ACMA to be adequately resourced in order to effectively and efficiently implement the commitments contained in the work program.

We have outlined our views below on industry priorities for the forward work program, acknowledging that there is also significant work to be progressed by the end of 2022 with regard to the technical optimisation of bands. While 2021 is the 'year of 5G', we note that this likely makes 2022 the 'year of harmonisation' due to the technical work required to harmonise the bands for 5G.

Industry priorities

AMTA supports the detailed work program, and we have outlined below industry's relative priorities in relation to making further spectrum available for 5G.

AMTA also notes the ongoing work to optimise the efficient configuration of the existing 850 MHz and 900 MHz bands, including the 1 MHz downshift. Our members are currently working together to identify a workable technical framework in relation to the boundary at 890 MHz to ensure that this band is optimised for future use. Additionally, we acknowledge the work underway in relation to the 26 GHz and 28 GHz band in terms of administrative allocations.

Given these current activities and priorities, AMTA members have the following priorities in terms of forward allocation workplan:

1. AMTA sees the need to make more mid-band spectrum available as the first priority for industry and we see the 3700-4200 MHz as the highest priority in terms of its potential to make more mid-band spectrum available for 5G. Our position in relation to this band was outlined in our submission responding to the ACMA's planning options paper.

While we appreciate the ACMA's decision to recommend a re-allocation of the bottom 100 MHz (3700-3800 MHz) for spectrum licensing, we remain concerned there will be insufficient mid-band spectrum for IMT to satisfy forecast demand in the second half of this decade (2025-2030). We have outlined in Part 1 of our submission the substantial contribution IMT currently makes, and will continue to make to Australia's GDP and economic prosperity. We appreciate the ACMA's role in ensuring highest value use for spectrum is satisfied and the obligation placed on the ACMA to ensure the wide range of use cases presenting themselves seeking spectrum are comprehensively reviewed against

economic and public policy objectives. We look forward to the opportunity to demonstrate to the ACMA why AMTA considers the highest value use of this band is realised by increasing the allocation of mid-band spectrum to IMT when the ACMA consults on its implementation planning decision during 2022.

AMTA notes that the ACMA is monitoring international developments in the 4.4 - 5.0 GHz band. This band, standardized by 3GPP as band n79, is becoming increasingly popular for mobile broadband (5G). Although the market is at an early stage, an increasing number of countries are considering this spectrum for IMT. Sub-bands in the 4400-5000 MHz range have coprimarily mobile allocation. At WRC-19 over 40 countries identified some or all of the spectrum in this range for IMT. A few countries have assigned spectrum in this range already. Specifically, in ITU Region 3; China, Hong Kong SAR, and Japan have assigned spectrum; in Region 1 South Africa has assigned spectrum in this range.

We also note the opportunities for additional mid-band spectrum in the 6 GHz band and our views on this band will be outlined in our submission in response to the ACMA's current consultation of RLAN use in the 5 GHz and 6 GHz bands.

2. AMTA notes that the 600 MHz band is likely the most promising source of further low-band spectrum for 5G. AMTA recognises that the Government's broadcasting reform agenda is still in its early stages with the release of the Media Reform Green Paper in November 2020. However, we believe the ACMA can undertake further work in parallel to the policy reform process, to consider various options in relation to future use of this spectrum should segments of this band be freed up as an outcome of broadcasting policy reforms.
3. We note that the 1800 MHz is a key band for 4G/5G services, and we support the ACMA's plan to release a discussion paper in Q4 2021, which may consider reallocating this band in remote areas, potentially completing national spectrum licensing of this band.
4. AMTA would then consider further investigation of additional mmWave spectrum, such as the 40 GHz band, for 5G and any new bands to be industry's fourth priority, with the preferred timeframe for such work to commence being 2024.

Technical Liaison Groups – working together effectively

AMTA members anticipate that, following the auction of 900 MHz spectrum, 2022 – ‘the year of harmonisation’ – will require industry and the ACMA to focus on optimisation work in relation to several bands via further TLGs.

AMTA members agree on the following priorities for the TLG work program in 2022:

1. 1.8 GHz
2. 2.1 GHz
3. 700 MHz optimisation
4. 2.6 GHz

AMTA also notes that the ACMA work program in relation to the review of spectrum licence technical frameworks is substantial and that it is not always easy to predict how straightforward the consultation process around the review of a technical framework will be.

AMTA does have some concerns regarding how the consultation processes around some of the TLGs have progressed in 2020 and into 2021.

In particular, AMTA notes that TLGs necessarily include a broad range of stakeholders, all with varying concerns at stake in the outcome of the technical framework. However, despite varying levels of risk between stakeholders, the contributions/or lack of contributions from any particular stakeholder hold no more or less weight than any other.

AMTA suggests that for TLGs to work effectively, TLG stakeholders must be reasonably compelled to provide evidence and substantiation of claims made in any TLG as the TLG process can only be successful when all stakeholders participate within a co-operative, collaborative forum and no single participant is able to unnecessarily or unreasonably delay or deter a fair and equitable outcome for all parties.

Specifically, we suggest that the TLG process should be punctuated with appropriately timed and scoped, ACMA-facilitated discussions to ensure that all participants, from multiple industries and spectrum use cases, have the opportunity to understand the ACMA’s intent and objectives for any given TLG as well as the views of other participants. For example, one way to achieve this would be to have a general discussion one week after the commencement of a TLG to identify major issues, complemented by issue-specific discussions if enough participants feel that to be necessary.

Licensing and licensing systems

AMTA notes the work being undertaken in relation to licensing activities for 2021-22, partly as a result of the implementation of the Modernisation Act. We will continue to engage with the appropriate ACMA teams in relation to most of the project priorities outlined in the table at page 52 of the FYSO. We have particular interest in the review of prohibition declarations and exemption determinations, as well as, drone regulation, the RNSS repeater trials and the ongoing trial of mobile phone jammers in NSW prisons.

Conclusion

The FYSO is an extremely useful tool for the spectrum community to understand and engage with the ACMA's work plan. AMTA members use the FYSO as a reference throughout the year and note that the opportunity to provide commentary on the draft FYSO is extremely useful and valuable as we believe it results in a final FYSO that better reflects the needs of all stakeholders. We do note, however, that the timeframe for providing commentary on the draft FYSO is often short, and in the case of this year, the consultation overlapped with Easter and school holidays making it more difficult for industry members to allocate sufficient resources to the task. We suggest that the consultation timeframe could be adjusted to enable improved engagement by all stakeholders. AMTA does find the 6-month and annual progress reports very useful.

Finally, we recognise the ACMA staff for their technical expertise and dedication to stakeholder engagement and we appreciate the efforts of the ACMA in planning for and progressing spectrum bands for 5G and looks forward to continued engagement across the work program.

Contact:

For any questions in relation to this submission please contact Lisa Brown, Public Policy Manager, AMTA at lisa.brown@amta.org.au or (02) 8920 3555 or Juan Pablo Casetta (Open Spectrum), AMTA Spectrum Consultant at juanpablo@openspec.com.au.

Australian Mobile
Telecommunications Association

PO Box 115
Dickson ACT 2602

www.amta.org.au