

AMTA Submission to the ACMA:

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IFC 12/2018 Five Year Spectrum Outlook 2018 -22



**Australian Mobile
Telecommunications
Association**

Introduction

The Australian Mobile Telecommunications Association (AMTA) welcomes the opportunity to provide feedback to the ACMA regarding the Five-Year Spectrum Outlook 2018-22 (FYSO).

Spectrum is required for 5G

5G is the next generation of mobile technology and is anticipated to enable a fully and seamlessly connected society and economy. 5G will be an evolution that builds on 4G/LTE mobile networks. It will deliver substantial improvements in the speed, latency and reliability of mobile networks in order to meet the continually increasing demand for mobile services including new capabilities that will be enabled by this next generation of services.

5G promises to be a comprehensive advance in mobile technology, delivering more than just IoT and faster speeds, it will mean a world where everything and everyone is connected to a fast, responsive and reliable network. 5G will mean instantaneous sharing of information and data; connected vehicles and machines; services and applications that are not yet imagined.

AMTA notes that the Government has recognised the need to make spectrum available in a timely manner to enable innovation and productivity across industry sectors with a particular focus on enabling the early deployment of 5G mobile networks in Australia.¹

We strongly believe this is needed to ensure ongoing demand for all types of services can be met and Australia remains at the forefront of rolling out the next generation of mobile technologies to enable transformative social and economic benefits across industries such as transport and logistics, health, education and the automotive industry.²

¹ Department of Communications and the Arts, [5G-Enabling the future economy](#), Directions paper, Oct 2017.

² AMTA Mobile Minute – [‘5G A connected future for Australia’](#) June 2017

The mobile industry is already preparing for 5G and conducting trials³. A recent report by Deloitte Access Economics estimated that annual network spend by mobile network providers in Australia could be worth \$5.7 billion in FY 2017-18.⁴

Economic and social benefits of mobile broadband and 5G

Mobile broadband continues to play a key role in stimulating Australia's economic growth and productivity. It is a driving force in connecting people and businesses, stimulating innovation and technological progress, and transforming industries in both densely populated and remote regions. Future development of mobile technologies, such as 5G, the Internet of Things (IoT) and Machine to Machine (M2M) applications will re-shape the Australian economy and drive productivity improvements.

Research by Deloitte Access Economics⁵ found that mobile telecommunications created significant benefits in terms of productivity and workforce participation. Specifically, the research showed that Australia's economy was \$42.9 billion (2.6% of GDP) bigger in 2015 than it would otherwise have been because of the benefits generated by mobile technology take-up with an increase in:

- long term productivity of \$34 billion or 2% of GDP; and
- workforce participation of \$8.9 billion, or 0.6% of GDP.⁶

The research also found that 65 000 full-time equivalent jobs were supported by the increased GDP attributable to workforce participation (equivalent to 1% of total employment in the Australian economy).⁷

In another recently released report on 5G,⁸ Deloitte Access Economics found that 5G will add to these economic benefits:

"Mobile is an integral part of how Australian businesses and society function. 5G will continue this trajectory and with the digital economy to grow to \$139 billion by 2020, it is important to take action to harness the potential of 5G."

In April 2018 research completed by the Bureau of Communications Research concluded '5G could improve productivity across the economy and increase gross domestic product per capita by up to \$2,000 by 2030'.⁹

Further indication of what the global path to 5G will entail is provided by Ericsson's Mobility Report (June 2018) which takes a closer look at the trends that will drive the mobile industry over the next five years, with major milestones including the first commercial launches of 5G networks and large-

³ [Telstra 5G trial](#); [Vodafone Hutchison Australia 5G trial](#); [Optus 5G trial](#); Optus [4.5 G trial](#).

⁴ Deloitte Access Economics, [5G-enabling businesses and economic growth](#), 2017.

⁵ Deloitte Access Economics, [Mobile Nation: Driving workforce participation and productivity](#), 2016.

⁶ Ibid

⁷ Ibid

⁸ Deloitte Access Economics, [5G-enabling businesses and economic growth](#), 2017

⁹ <https://www.communications.gov.au/publications/impacts-5g-productivity-and-economic-growth>

scale deployments of cellular IoT. The Ericsson Mobility Report (June 2018) forecast that by the end of 2023 there will be 1 billion 5G subscriptions globally.¹⁰

It is clear that the global demand for wireless services continues to grow and the evolution of 5G and IoT services will place even greater pressure on the capability of industry to deploy networks to meet growing demand without timely and sufficient spectrum allocations.

Responses to Questions included in FYSO

1. What further improvements could be made to the FYSO to make it easier for stakeholders to engage with the ACMA on its work program?

AMTA notes the improvements made to the FYSO by the ACMA to provide a more holistic view of the work program and planning processes. We note that the FYSO no longer contains a separate work plan for mobile broadband; but acknowledge that with mobile broadband remaining the fundamental driver of changes in spectrum use and therefore re-planning, a holistic and neutral plan that includes all use cases is an appropriate and pragmatic approach to adopt.

The forward allocation work program is useful in setting out indicative timing and sequencing regarding planning for particular spectrum bands. This goes some way to providing improved certainty for investors.

AMTA suggests that the ACMA should also provide a timetable of planned consultations so that stakeholders can plan their internal resources so that they can participate in the consultations processes. While it may be impossible to avoid multiple simultaneous consultation processes, it would be helpful for stakeholders if the ACMA could plan to avoid this where possible to enable stakeholders to participate fully in the consultation process.

With regard to facilitating engagement with the ACMA, the consultative format of FYSO is useful, but if processing of feedback and subsequent updates is not timely, this facilitation is less effective. Also, where stakeholders have divergent views, the FYSO is not the only tool for facilitating engagement. AMTA notes that forums such as the 'Spectrum Tune-Up' sessions can be a more efficient mechanism to ensure stakeholder views are aired simultaneously, and where there is divergence, to facilitate discussion on issues and concerns that can produce options for solutions that can be then be explored and resolved more efficiently. We suggest that ACMA's work program planning could benefit from greater use of a forum approach to either reach consensus among stakeholders or to identify where concerns lie.

¹⁰ [Ericsson Mobility Report, June 2018](#)

2. Are there other technology developments or sources of spectrum demand the ACMA should be aware of in considering spectrum management over the next five years?

AMTA believes that 5G mobile technology will be the key driver of demand for spectrum over the next five years, however, we also recognise that the ACMA is aware of and across the need to plan for meeting the demand for 5G, as well as other technologies and uses of spectrum.

3. Do you have any feedback on the ACMA's plans for monitoring, initial investigation, preliminary replanning or re-farming of bands?

As noted in response to question two, AMTA believes that 5G mobile technology will be the key driver of demand for spectrum over the next five years and preparing the way for release of spectrum for 5G service should be the ACMA's highest priority.

26 GHz band

AMTA observes that progress on planning options for 26GHz have slowed. AMTA supports the ACMA making provisions for potential licensees to evaluate high bandwidth mmWave bands in dense urban areas where they are likely to be deployed. For example, the provision of scientific licences based on administrative pricing not based on populations and bandwidth.

890–915 MHz and 935–960 MHz

AMTA members have differing views on the proposed ACMA approach to the reconfiguration of the 890-915/935-960 MHz band and will make their own individual submissions. AMTA has raised concerns with the ACMA regarding the issue of interference in this band from ISM devices that remain common in this band, despite being illegal.¹¹ This is primarily due to inconsistencies with the USA's spectrum plan and the ability of consumers to purchase devices online from the USA. This is a problem that can be managed but probably never be adequately resolved.

1.5 GHz

AMTA supports the progression of the 1.5 GHz band to the preliminary planning stage. AMTA has previously stated a preference for a SDL configuration in its response to IFC 2016/25; noting that would align with harmonised arrangements in Europe for SDL in the band 1452-1492 MHz. However, since then, technical assessments are underway to review the use of the band for Supplementary Uplink (SUL), and so at this stage it is AMTA does not have a specific preference for to lock in either SDL or SUL. That said, these simplex configurations are preferred to full duplex arrangements, on the basis that:

- contiguous spectrum is maximised—i.e. no mid-band gap as with FDD;
- it reduces challenges with network self-interference—i.e. associated with synchronisation issues with TDD and duplex filter issues of FDD;
- the benefits of larger propagation distances achievable with “mid band” spectrum are less likely to be compromised with an efficient band arrangement;

¹¹ AMTA submission to ACMA's consultation 890-915/935-960 MHz reconfiguring the band: way forward, 22 Dec 2017.

- it would allow a staged release of spectrum facilitating earlier MBB deployments where incumbency issues vary across parts of the band and/or geographic areas.

Other bands

AMTA also supports the ACMA:

- adding an item to the work plan for re-assignment of the bottom 2MHz of the 2300 MHz band to mobile so that that 5 x 20 MHz channels can be deployed.
- providing an update on their position on the status of the 1900 – 1920 MHz spectrum that were not renewed and have remained dormant as an outcome of the recent licence re-issue process.

4. Do you have any feedback on optimising established planning frameworks?

AMTA welcomes the introduction of this categorisation of spectrum planning activities which outlines the activities planned to be undertaken in the next year.

We note that the ACMA has mentioned defragmentation of the global 3.5 GHz band in the FYSO but have not made it an item in the work plan itself. AMTA supports prioritisation of defragmentation of the 3.4-3.6 GHz bands following the conclusion of the 3.6 GHz auction process. We believe defragmentation of the band will deliver significant efficiency gains.

5. Do you have any comments about the ACMA approach to the forward allocations, or the specific allocation scenarios?

AMTA members will make their own submissions in response to the forward allocation scenarios.

6. Do you have any feedback on the ACMA's approach to Spectrum Review Implementation?

AMTA notes that the legislative and regulatory reforms stemming from the Government's Spectrum Review are still very much a work in progress. While the intentions behind the recommendations of the Review seem clear; how many of these recommendations will be implemented remains to be seen.

AMTA therefore believes that there is scope for the ACMA to consider how the recommendations and objectives of the Review could be implemented. In particular, we believe that the fundamental property rights associated with spectrum licences should be further considered and revisited in consultation with stakeholders. There is potential for the management of spectrum to be improved, consistent with the objectives of the Spectrum Review, and there is scope for the ACMA's planning processes to play a greater role in making spectrum management and allocation more efficient and flexible. In consultations at previous stages of the Spectrum Review process, AMTA has advocated for a licensing framework which will facilitate greater use of market mechanisms for allocation and reallocation of licences and encourage a secondary trading market.

The foundation for greater market-based activity is a licensing framework that delivers a set of simple but well-defined access rights. This is not the case with the set of spectrum, apparatus and class licences that are used today.

AMTA supports the proposed approach for the new licensing framework to establish a single licence category, provided it promotes greater transferability of licences between different uses than the existing framework and the access rights of existing licensees are not compromised. We also support the proposal for the new licensing framework to facilitate and encourage secondary market activity by allowing assignment, sharing, aggregation and subdivision by licensees.

AMTA also supports a generic licensing mechanism which clearly records subordinate uses and can be used to accommodate incumbents in licence transfers, including the initial allocation of encumbered spectrum. We suggest that this could be achieved by requiring parameter- based licensing to include a pro-forma arrangement for recording such uses. More specifically, this could be implemented with a special form of parameter- based licence that is issued by the lessor and linked to the lessor's licence.

7. Do you have any comments about the ACMA's planned activities for licensing and licensing systems, pricing, compliance and enforcement, and international engagement?

IoT will inevitably lead to more devices – many of which will be mass market imported devices – with a much greater risk of interference issues. AMTA believes the ACMA has a vital role to play in the management of interference, particularly around compliance and enforcement and must be appropriately resourced in order to be effective.

AMTA believes that the ACMA needs to be across the spectrum management issues within industry to be able to set effective spectrum policies so there is still a need for ACMA to have some role in spectrum management and monitoring. With new technology there is a greater need to consider co-existence among different industries; there is a need for ACMA to invest in increasing its skills bases so that it can work with industry to support the development of co-existence arrangements with different spectrum users.

Conclusion

AMTA recognises and appreciates the efforts of the ACMA in planning for and progressing spectrum bands for 5G and looks forward to continued engagement in the planning and re-farming processes.

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