30/09/2021



Australian Mobile Telecommunications Association

AMTA Submission

Regional Telecommunications Independent Review Committee

Regional Telecommunications Review 2021



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 <u>http://www.amta.org.au</u>.

Contents

Introduction4
Mobile communications in regional communities4
Remote work and education5
Agribusiness5
Healthcare in regional communities5
Adequacy6
Mobile and changing demand6
Covid-1910
Indigenous Australia10
Opportunity11
Regional Development
Emerging technologies - 5G and beyond14
Maximising Outcomes
Awareness15
Education15
Public information
Contact:

Introduction

AMTA welcomes the opportunity to participate in the Committee's 2021 Review and respond to the Issues Paper.

As AMTA's 5G Readiness Report observes, "For State, Regional and local governments ... 5G will soon become a differentiator to attract businesses and residents. It is no surprise then that many of these governments are seeking to create a regulatory environment for deployment that is conducive to investment."¹

In the wider context of the COVID-19 pandemic which has seen an increase in Australians moving to regional areas, 5G is fast becoming the differentiator that will attract people and investment to regional areas, creating sustainable communities, scale and employment. AMTA is committed to engaging with all levels of Government and regional communities so that Australians can realise the economic, social and environmental advances that can be enabled via the continued deployment and upgrade of mobile networks.

Our submission explores the benefits mobile technology, including 5G, can deliver to regional communities, and highlights the tangible actions those communities and local governments can take to accelerate the introduction of 5G. We have also responded to some of the specific questions included in the Issues Paper below.

Mobile communications in regional communities

Never before has mobile technology played such a pivotal role in the social and working lives of Australians. AMTA notes that demand for mobile data continues to be strong and this is partly due to the economic and social impact of the global pandemic which has not slowed the deployment of 5G and has driven further demand for broadband services.² In fact, Mobile has underpinned the ability to work from home and stay in touch with loved ones using video-based communication during COVID-19, provided better data for agriculture, transport or smart communities through the Internet of Things (IoT), and delivered better health and education services to regional communities. This will only continue to grow as 5G expands and enhances all these aspects of our lives, as the following examples illustrate.

¹<u>AMTA State & Territory 5G Infrastructure Readiness Assessment</u>, First edition, March 2021, p.23.

² IEEE Innovation at Work, <u>As Pandemic Increases Demand for 5G, Network Operators Plan to Avoid Delays</u>, June 2020

Remote work and education

5G's bigger bandwidth, lower latency and faster speed will remove remaining impediments to working, collaborating, studying and attending classes remotely. Whether working from home, in the field, whilst travelling or in the office, 5G will allow for virtual meetings and the collection, retrieval and sharing of data rich material with ease. The contribution of 5G to remote work and education will have a significant impact on the livelihood and competitiveness of Australia's regions and closing the digital divide.³

Agribusiness

Agriculture is one of Australia's largest and most important industries for future sustainability. Mobile carriers are investing in the development and trials of 5G applications that will potentially create benefits for the agricultural sector including the following:

- <u>Vodafone is investing in precision agriculture</u>, implementing the SCADAfarm system.
- <u>Optus is investing expanded network coverage to support 'farm to table' harvesting</u> <u>connections</u>.
- <u>Telstra is developing and testing a hyper-local weather network for Australia's farmers</u> to support improved management decisions on crop production, labour and the supply chain.

Healthcare in regional communities

Similarly, there is great potential for 5G to revolutionise the way healthcare is delivered to regional communities. For example, PwC reports that 5G will align with the practice of '4P' medicine in a post-COVID world, that is it will be – predictive (through the use of wearables and AI), preventative (using tracing technology), personalised (real-time remote monitoring) and participatory (as patients become more engaged with their health through the use of these 5G enabled tools).⁴

³ AMTA State & Territory 5G Infrastructure Readiness Assessment, First edition, March 2021, p.23.

⁴ PwC Report 5G Healthcare, <u>Wireless wellness: How 5G will create the new post-COVID healthcare ecosystem</u>, Sept 2020

Adequacy

Mobile and changing demand

1. What telecommunications services are required in regional Australia to meet current and future needs? Are there any things regional communities and businesses need to do, but can't, on their existing services?

AMTA believes that 5G is essential for bridging the digital divide between Australia's major cities and regions and therefore, is an essential component in meeting the future communications needs of regional Australians. 5G is already playing a significant role in improving productivity and lifestyle in our urban areas, and it is essential the same opportunity is afforded to those living and working in our regional and remote communities. As we have outlined above, healthcare, education, smart farming and smart communities are all examples where regional communities will benefit from moving to the next generation of mobile communication, 5G.

Closure of 3G networks

As with earlier generations of mobile services such as the Analogue Mobile Phone Service (AMPS) and Global Standard Mobiles (GSM, also known as 2G), 3G networks will inevitably be switched off and the spectrum used will be re-farmed. It is likely that this will only occur as the 4G footprint either matches or extends the current 3G footprint, noting that some mobile network operators are yet to release timelines for this.

As noted in the Issues Paper, regional communities will need to be supported through the transition from 3G mobile networks as mobile network operators switch off these networks in order to re-farm the spectrum used to deliver those services. AMTA notes that regional communities are often keen adopters of new technology, and the number of 3G-only devices (i.e., not capable of 4G or 5G) and the quantity of 3G traffic has been in decline for some years now as the majority of users are migrating away from legacy 3G networks.

Such transitions are a characteristic of the mobile telecommunications industry globally due to the scarcity of spectrum resources and the continuing development of advanced technologies as well as strong and ongoing growth in customer demand. New mobile technologies offer end users improved experiences and applications and they also make more efficient use of finite spectrum and energy resources. Mobile network closures are not new in Australia, with three different generations of mobile network having been closed by each of the mobile operators in just over two decades.⁵ Experience gained in closing networks provides industry with learnings on how to support customers through network transitions and how to ensure customers retain coverage and

⁵ The three network types are: 1) the Analogue Mobile Phone Service (AMPS); 2) Code Division Multiple Access (CDMA) in regional parts of Australia; and 3) Global Standard Mobile (GSM, also known as 2G).

services. AMTA recognises that some customers, who are more vulnerable for various reasons, may require more support and assistance than others as 3G networks are shut off and we are committed to working with the mobile network operators to ensure customers are provided with timely information and support, ensuing services remain accessible and the overall quality of service high.

2. What changes in demand, barriers or challenges need to be addressed when it comes to telecommunications services in regional, rural and remote Australia?

To assist in bridging the digital divide, 5G needs to be both timely and affordable, and it is in the context of delivering timely, affordable services that network operators encounter barriers and challenges. Delays caused in obtaining planning approvals, or identifying a new site location when a proposed site is rejected turns into delays for regional communities getting access to 5G. Mobile network operators are sympathetic to the visual amenity requirements often associated with regional towns where there are heritage or other local planning considerations, and we do not seek to ignore these important community requirements. At the same time, the turnaround time for acquisition, planning and design of a tower facility can be up to two years, in some cases even more where a mobile operator identifies and invests time planning a prospective site, to then have it rejected in the public consultation phase. It is a lengthy process that adds to the costs and delays of deploying infrastructure in regional communities.

Edition 1 of the AMTA State & Territory 5G Infrastructure Readiness Assessment⁶ was published by AMTA in March 2021, and this publication documents those barriers and challenges when the mobile network carriers are seeking to secure approval and land tenure to deploy mobile network infrastructure, including in regional, rural and remote Australia. In addition to the reforms to Carrier Powers and Immunities at a Federal level, the AMTA Readiness Assessment identifies several unnecessary regulatory barriers that must be navigated within the eight State & Territory and over 500 local Council planning and development approval systems in Australia, in order to deploy telecommunications infrastructure. Opportunities to reform State, Territory and Council approval systems based upon 'best practice' are discussed later in this submission.

For 5G to deliver tangible benefits, it also needs to be affordable for people living in and running businesses in regional communities. Mobile network operators continue to invest billions in the necessary infrastructure and radiofrequency spectrum to deploy networks. Wherever network operators incur increased costs, those costs are ultimately passed on to, and borne by the consumer.

⁶ AMTA State & Territory 5G Infrastructure Readiness Assessment, First edition, March 2021

3. How have the Government's policies and programs affected telecommunications service outcomes in regional, rural and remote Australia? How can these be improved?

The continued roll out of 4G and 5G mobile services is needed to meet the demand for telecommunications services in regional Australia and to ensure that the benefits of a digital economy⁷ are accessible to all Australians in line with the Government's vision to be a leading digital economy by 2030.

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.⁸

The Minister for Communications, Urban Infrastructure, Cities and the Arts designated 2021 as the 'Year of 5G'⁹ and industry acknowledges with appreciation the Government's policy priority to support the role and deployment of 5G networks as a key contributor to a digital led COVID recovery. 5G is the innovation platform that will grow the mobile industry's capacity as a key contributor to Australia's future global competitiveness.

Allocating sufficient spectrum for mobile technologies, including 5G, will ensure that the highest value use of spectrum is achieved which will result in optimal economic and social benefits for regional communities

It is therefore critical for Australia's economy that Government ensures a pipeline of spectrum for 5G to meet forecast demand for mobile broadband.

AMTA therefore supports the Government's proposal to free up to 84 MHz of spectrum within the 600 MHz band, creating a public interest 'digital dividend' with an auction in 2025. The 600 MHz band is low band spectrum which, due to its propagation properties, is suited to providing the coverage layer needed given Australia's vast land mass and low population density, especially in regional/remote areas. We believe that making more low-band spectrum available by mid-decade will ensure that regional Australia is able to share in the significant economic benefits of 5G. As the GSMA notes, low-band spectrum is important for bridging the digital divide between urban and regional areas by creating greater equality of broadband connectivity.¹⁰

AMTA also notes that there are improvements that could be implemented at a Commonwealth level to ensure a consistent and streamlined regulatory and planning framework to support

⁷ Australia's vision to be a leading digital economy and society by 2030 | Australia's Digital Economy (pmc.gov.au)

⁸ <u>Mobile Nation – the 5G Future</u>, Deloitte Access Economics, April 2019

⁹ Minister Fletcher, <u>Media Release</u> – 2021 will be the 'year of 5G' - Nov 2020

¹⁰ GSMA <u>5G Spectrum GSMA Public Policy Position</u> March 2021

deployment of the necessary infrastructure in regional areas and we have commented on this in the section on Opportunity below.

Service Reliability

4. How do service reliability issues impact on regional communities and businesses? How do outages, including in natural disasters, impact on communities and businesses?

Australia has consistently ranked first in an index that includes 165 countries (representing 99% of global population) for its mobile connectivity.¹¹ Mobile network operators are committed to delivering networks that are robust, reliable and resilient. It should be noted that mobile networks will always be reliant on access to mains power to operate and ensure connectivity is maintained and that there is a limit to how temporary power (via back-up battery and diesel-fueled generators) can be delivered to mobile base stations safely when power is cut off due to a natural disaster or for any other reason. It is an ongoing challenge to ensure that back-up power sources can be maintained when conditions may limit access, for example during bushfire, and if power is not restored within a reasonable timeframe, even if telco staff can access a base station to conduct repairs and deliver fuel for back-up generators the reliance on reliable power remains in order to maintain network connectivity.

5. How might such impacts be addressed to ensure greater reliability? How can the network resilience be addressed in regional areas?

Following the devastating impact of the bushfires of 2019-20, AMTA and Communications Alliance made a joint submission¹² to the Royal Commission into National Natural Disaster Arrangements (also called the "Bushfire Royal Commission") in April 2020. The joint submissions included a number of recommendations to address network resilience and improve reliability. These included:

- improving coordination between mobile network operators and emergency service organisations;
- improving mains power resilience;
- the designation of telecommunications as an essential service;
- vegetation clearing; and

¹¹ GSMA Mobile Connectivity Index, <u>The State of Mobile Internet Connectivity Report</u>, July 2019

¹² Communications Alliance / AMTA Submission to Royal Commission into National Natural Disaster Arrangements.

• access to emergency fuel for backup generators.

Since then, the mobile network operators have been working co-operatively with each other and State based emergency services agencies under the auspices of Comms Alliance to build a framework for sharing information about network infrastructure during emergencies as well as to improve resiliency of networks to events such as bushfires and floods. Further information on the establishment of information sharing frameworks and the representation of that data in "digital twins" can be found in the Communications Alliance submission.

Covid-19

6. How did the use of digital services change for regional consumers and businesses during the response to the COVID-19 pandemic? What insights for future service delivery does this provide?

As noted earlier in this submission, the demand for mobile data continues to be strong and this is partly due to the economic and social impact of the global pandemic which has not slowed the deployment of 5G and has driven further demand for broadband services.¹³

While demand for mobile broadband in Australia's regions increased as a result of the COVID-19 pandemic as people were increasingly working and studying from home, mobile networks had sufficient capacity to absorb the increased traffic without negative impact on customer experience.

For example, the Open Signal report shows that in Australia, average monthly user consumption increased 45% over two years, from 7.4 GByte/user/month in Q1 2019 to 10.7 GByte/user/month in Q1 2021.¹⁴

Indigenous Australia

7. What can be done to improve the access and affordability of telecommunications services in regional, rural and remote Indigenous communities?

AMTA members will respond individually to this question in their own submissions.

¹³ IEEE Innovation at Work, <u>As Pandemic Increases Demand for 5G, Network Operators Plan to Avoid Delays</u>, June 2020 ¹⁴ <u>Open Signal report Quantifying the Impact of 5G and COVID-19 on Mobile Data Consumption</u>, June 2021, p.10.

Opportunity

Regional Development

8. How can investment in telecommunications infrastructure work with other programs and policies to encourage economic development in regional Australia?

Regional connectivity is critical to encouraging economic development in regional Australia. AMTA members have actively participated in the Government's Mobile Blackspots program, aimed at providing a more equitable service for all Australians, regardless of their location. However, the ability for mobile operators to deploy network infrastructure in a consistent and streamlined manner is critical to improving mobile access in regional areas. We believe that much can be done to facilitate this at a Commonwealth level through reforms to Carrier Powers and Immunities as outlined below.

Most recently, Infrastructure Australia recognized some of these challenges in its 2021 Plan,¹⁵ in which it identified telecommunications as an essential service. In particular, it highlighted that the cost of deploying new telecommunications infrastructure needs to be sustainable, particularly as this relates to site rental for new base stations and for spectrum licences.

Carrier Powers and Immunities

The quality and choice of mobile telecommunications available in regional and remote Australia has much to do with the economic feasibility and ongoing sustainability of investment in network infrastructure in those areas. The dual challenges of vast areas and sparse populations make this an especially difficult issue to resolve.

Regulatory barriers that add costs and delay to infrastructure deployment in the regions are particularly impactful. Mobile network operators have been working with the federal Government on a suite of reforms to the Carrier Powers and Immunities under the Commonwealth's *Telecommunications Act (1997)* which facilitates the deployment of network infrastructure by providing abbreviated or exempt planning pathways for deployments which are likely to have minimal impact on community amenity. Such infrastructure may include new types of radiocommunications antennas, tower extensions, small cells and associated ancillary equipment such as solar cell arrays to provide sustainable energy supplies to the equipment.

The ability to deploy this equipment with minimal planning delays and overheads encourages mobile network operators to make the initial investment in enhanced mobile networks in regions

¹⁵ Infrastructure Australia 2021 Plan, Sept 2021

which are economically challenging and allows their ongoing operations in those regions to be more sustainable.

AMTA expects a decision on the current reform package to these Carrier Powers and Immunities to be made in the near future with the amended legislation likely to come into effect by the end of 2021.

State & Territory Planning Reform

In addition to Powers & Immunities reforms, AMTA is advocating for reform of planning and tenure regulations framed by the various State and Territory Governments. AMTA's recommendations for State and Territory governments found in its 'Readiness Assessment' are grounded in best regulatory practice and have been guided by the Development Assessment Forum 'Leading Practice Model for Development Assessment' endorsed by the Council of Australian Governments; (COAG) Business Advisory Forum.

The Readiness Assessment identifies 'Best Practice' elements from the Planning framework of the States and Territories, then identifies several 'Reform Opportunities' in each State and Territory, and finally makes 21 'Recommendations' to improve 5G infrastructure regulatory 'readiness' across the States and Territories.

- 5G infrastructure that meets specified performance criteria in a State or Territory Code, Policy or Planning Scheme should be exempt from the need for a DA;
- When it comes to carriers securing land tenure for 5G infrastructure, the States, Territories and local government should treat telecommunications infrastructure like other utilities and not charge rentals that make it uneconomic to deploy new towers on Crown land or government owned land in regional, rural and remote Australia;
- Certainty in DA processes, timeframes, fees, and application of science-based safety policies are also all critical.

9. What role could innovation, including new models, alternative investors or new ways of doing business, play to encourage investment in regional telecommunications infrastructure? What are the barriers?

AMTA notes that the funding provided through the Government's 5G Innovation Initiative is encouraging innovation and investment in regional telecommunications, for example, TPG Telecom's trial of 5G technology to count sheep is outlined in the box below:

CASE STUDY - COUNTING SHEEP WITH 5G

Problem statement – Livestock counting is a critical component of livestock management. Errors in counting can lead to substantial costs. In addition, manual counting and checking takes up significant time and labour costs and can lead to livestock trading disputes. It's very time consuming and difficult to get accurate numbers as livestock often move around or won't cooperate as they are being herded into holding pens.

Current solution – Livestock including sheep are manually counted at livestock exchanges and ports, with the potential for errors and inconsistencies.

Proposed solution and scope – Using 4K cameras with high resolution and 5G, livestock counting can be made more accurate and robust, especially in times of poor weather conditions or livestock congestion. Processing is to be done at a local edge computing node to reduce delay, while data is stored and analysed in the cloud and fed back to the user to be viewed on a tablet or mobile device.

5G is necessary because it enables the robustness in different conditions, and can enable 99.99%+ accuracy through 4K streaming

Impact and benefits – Minimising counting error, especially during unfavourable conditions, will directly contribute tens of millions of dollars to the livestock industry each year, with the added benefits of saving millions of hours of manual labour every year, reduced work stress and avoidance of livestock trading disputes.

Trial details – the trial will be conducted over 12 months at the Bendigo Livestock Exchange by TPG Telecom in partnership with Nokia, AWS and UTS.

Emerging technologies - 5G and beyond

10.To what extent will new technologies enable significant change to the delivery of telecommunications services in regional Australia over the next 5-10 years? Are there any barriers to accessing these technologies?

Australia's major mobile network providers, Optus, Telstra and Vodafone (part of TPG Telecom) are all deploying 5G networks and are at various stages of those deployment plans.

As noted earlier in our submission, 5G is essential to bridging the digital divide between Australia's major cities and regional and remote communities.

5G will revolutionise how regional communities connect and communicate with each other and the world.

5G will deliver substantial improvements in the speed, latency and capacity of mobile networks and has the potential to transform industries and sectors including agriculture, transport and logistics, manufacturing, health, education and emergency services. It will change the way both Government and enterprise deliver goods and services as we transition to smarter cities and regional communities where everything that can be connected is connected.

With Enhanced mobile broadband (eMBB), 5G will provide substantially faster data speeds as well as greater capacity for networks. It will also enable ultra-reliable low latency communications (URLLC) for mission critical applications. This has the potential to open up a new world where remote medical care, procedures and treatment are all possible. And Massive machine type communication (MMTC) with 5G will enable a truly connected world, meeting the growing demand for data and enabling innovations that will build on the Internet of Things (IoT) to connect billions of devices without human intervention at a never-before-seen scale. This has the potential to revolutionise modern industrial processes and applications, including agriculture, manufacturing, transport and business communications.

The 5G ecosystem will also make use of the characteristic strengths of satellite services as part of the service delivery matrix, including in areas such as coverage extension (including for IoT), remote-area backhaul, content caching, multi-casting and additional resilience.

The prime benefits of 5G, compared to 4G, will be significantly faster speeds in data access, downloading and streaming content. 5G devices will have increased computing power and make use of lower latency, meaning that devices will enjoy virtually instantaneous connections to the network, as well as greater connectivity when on the move due to the use of antenna beam steering.

11.How can Government better support the rapid rollout of and investment in new telecommunications solutions in regional areas?

The Government has also recently announced 5G innovation funding grants for project and we have outlined one of the trials that is being funded by this program in response to question 9 above as an example of how Government is supporting

Please see above response to questions 1, 2 and 3 around the need to make radiofrequency spectrum, specifically the in the 600 MHz band, available in a timely manner to ensure a coverage layer for 5G network deployment in regional areas.

Please see above response to question 8 where we have outlined the need for reforms to the Carriers Powers and Immunities framework and State and Territory development approval systems to ensure deployment of infrastructure is not unnecessarily impeded or delayed.

Maximising Outcomes

12. How can different levels of Government, the telecommunications industry and regional communities better co-ordinate their efforts to improve telecommunications in regional Australia?

Please see responses to questions 8, 9 and 11 above.

13. What changes to Government investment programs are required to ensure they continue to be effective in delivering improved telecommunications?

AMTA members will respond individually to this question in their own submissions.

Awareness

Education

14. How can regional consumers be better supported to identify, choose and use the best connectivity options for their circumstances, as well as to understand and use their consumer rights?

AMTA notes that the Government has funded the Regional Tech Hub, an initiative by the National Farmers Federation and AMTA has participated in the Regional Tech Hub Stakeholder Reference Group. We believe that the Hub provides an excellent resource for regional consumers who are

seeking information on how to choose the best service to meet their needs, noting the particular requirements that regional consumers have.

Public information

15. To what extent is public information on connectivity options, including predictive coverage data and speeds, sufficient to help regional customers make informed decisions? What other information is needed?

In 2018 AMTA's mobile network operator members, Optus, Telstra and Vodafone (now part of TPG Telecom) implemented several changes to improve the comparability of coverage map information across networks for customers. The network operators agreed to use the following terminology to describe the following three levels of mobile coverage to customers as shown in the table below.

Levels of coverage	Explanation
Level 1	This is the type of coverage a customer can expect when using a device indoors with a quality of reception predicted for that location and factoring in typical
INDOOR	building penetration losses of the area. Typically building penetration losses that will apply will vary depending on the urban density of the location i.e., dense urban areas have higher losses than suburban. Building penetration losses can
	also vary considerably based on building materials used e.g., brick, tin, timber as well as size and finishing of windows. Metal tinted windows, for example, will increase losses.
Level 2	This is the type of coverage and quality of reception a customer can expect
OUTDOOR	when using a device outdoors with typical handheld use, based on an elevated upright standing, head height position.
	Factors that will impact on predicted coverage will include local environment
	e.g., local clutter, vegetation, topography of the area, as well as personal
	variables such as how the device is held relative to the head and the direction facing.
Level 3	This is the type of coverage expected when a device is augmented using an
EXTERNAL ANTENNA	external antenna or other coverage extension device that utilises an external antenna. The predicted quality of coverage will be based on a typical small omni-directional external antenna that can be readily vehicle mounted, at a height consistent with top of vehicle. Note that larger higher gain antennas and increasing antenna height can increase range of coverage.

These three levels can be applied to various types of coverage e.g., 3G/4G/5G and this can be shown on coverage maps. Coverage maps may also indicate coverage based on the customer's device type.

AMTA members also agreed to provide comparable and generic information to customers in relation to mobile coverage and how it works. This includes information about network guarantees, consumer rights under the Australian Consumer Law and available options for improving coverage.

16. What other matters should the Committee consider in its review and why are they important?

AMTA appreciates and recognises the valuable contribution made by the Regional Telecommunications Review every three years, however, we suggest that that consideration be given to holding the Review every five years rather than three, in the interests of efficient use of industry and community resources.

Contact:

AMTA looks forward to further engagement in the Committee's review process and would be happy to meet with the Committee in relation to this submission.

To arrange a meeting or for any questions in relation to our submission, please contact Lisa Brown, Public Policy Manager at Lisa.Brown@amta.org.au or at 02 8920 3555.

Australian Mobile Telecommunications Association

Suite 5.04, L5, 50 Berry St North Sydney NSW 2060

PO Box 1507 North Sydney NSW 2059

www.amta.org.au