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Mark McGregor
Economics Advisory Section, Australian Communications and Media Authority

Online submission

Dear Mr McGregor

Submission to ‘Approach to expiring spectrum licences’ consultation

I am pleased to provide comment to the Australian Communications and Media Authority (ACMA) on the ‘Approach to expiring spectrum licences’ – consultation paper. This is a joint submission led by the NSW Telco Authority with input from the Department of Regional NSW and consideration of comments from NSW emergency services organisations (ESOs).

The NSW Telco Authority has led this submission in line with its responsibility under section 5(c) of the *Government Telecommunications Act 2018* to ‘manage and administer applications on behalf of government sector agencies to the Australian Communications and Media Authority for, or in relation to, spectrum licences under the *Radiocommunications Act 1992*.’

Overall, spectrum and the future approach to managing expiring licences is considered to be a critical issue and offers a significant opportunity to drive outcomes that will deliver improved public safety and consumer outcomes.

While the attached document contains detailed response to the questions asked in the consultation paper, I would like to particularly draw your attention to some of the key proposals contained in this response:

- The public interest criteria should be adjusted to have a stronger focus on public safety in line with the objects of the *Radiocommunications Act 1992*. This will drive investment into underserved communities and support necessary efforts to promote public safety
- The uptake of digital communication in emergency operations has meant greater need for spectrum. International best practice for Public Safety Mobile Broadband (PSMB) solutions feature dedicated spectrum to support public safety activities. While the PSMB solution likely will rely on commercial spectrum, in unconnected areas where commercial investment is unattractive, the solution may require government intervention to augment coverage
- Given the complexity of issues raised in this submission, we request increased engagement with the ACMA and States and Territories
- Closer monitoring of spectrum uses to assess efficiency and effectiveness may provide a case to redeploy spectrum. There are opportunities to introduce spectrum licence conditions or fee rebates to motivate regional connectivity

Should you wish to discuss this submission, please contact [REDACTED]

Yours sincerely

[REDACTED]

[REDACTED]

03/08/23

Attachment 1: Detailed feedback to 'Approach to expiring spectrum licences' consultation

1. What are your views on the proposed public interest criteria? Are there other criteria we should consider?

Over 36 per cent of the NSW land mass has no mobile coverage, and around 26 per cent has one mobile provider. There needs to be greater emphasis on spectrum licenses to create equitable access for all citizens of NSW and especially in regional areas and for First Nations people where the commercial market has failed. Regulating spectrum licences must encourage efficiency, innovation and investment in regional areas as well as contributing to meeting the Closing the Gap targets where possible.

ACMA should consider removing reference to 'productive' and 'dynamic' efficiency from criterion 1 to ensure there is limited overlap in the criteria, or provide clear delineations within its descriptions, given:

- The first criterion focuses on 'facilitating efficiency', (including through 'dynamic' and 'productive' efficiency)
- The second criterion assesses whether spectrum is put to 'efficient use' (through investment and innovation) and encourages 'productive' and 'dynamic' efficiency.

In addition, we strongly recommend that public safety is positioned as the primary criterion in relation to public interest. The impact of natural disasters on our communities over recent years has demonstrated the importance of public safety communications to keep the people and places of Australia safe. Accordingly, ESOs require adequate spectrum to support their operations.

The current mission critical Land Mobile Radio network (LMR) used by the ESOs in NSW allows state-wide, cross organisational mission critical voice and data communications at low bit rates (e.g. short messages, status messages), based on the TIA standard P25. This is critical technology and is relied upon heavily by first responders and those with sanctioned roles in public safety and emergency management. P25 equipment in NSW will reach end of life in 2026 but various P25 components will be required to live on until such a time as Public Safety Mobile Broadband (PSMB) can be relied upon as the primary communication system.

Already, devices and services, such as video communication, drones and robot-controlled devices, are critical components in public safety communications. Uplifting the communication toolkit from mission critical voice communications to mission critical broadband voice and data communication will see an expansion in operational response capabilities including real time intelligence and evidence gathering, life-saving applications, incident control centre command and direction, and geolocation support. This capability expansion will also see a safer working environment for first responders and faster, more effectual and safer response for members of the public. To ensure these advancements are available to first responders to a mission critical level, government may be required to step in if the commercial market fails to provide the necessary enablers and services.

As the ACMA is aware, Australia is pursuing the development of a PSMB. Dedicated spectrum is the international best-practice standard for PSMB, with various PSMB mature or maturing countries allocating sufficient, deployable spectrum in the public interest under different capability models. Contemporary international benchmarking confirms that countries with mature or maturing PSMB capabilities have applied a quantum greater than 5 + 5 MHz for PSMB, whether this be as dedicated spectrum, commercial spectrum or a combination. For example, the United States, Canada, South Korea and Qatar have allocated 10 + 10 MHz of dedicated spectrum for PSMB.

In May 2022, Germany released a report ([Study to determine the broadband frequency spectrum demand of the German public safety organisations in mobile broadband networks](#)) that identified "a

bandwidth of at least 60 MHz has been determined to fulfil the future requirements of mission critical broadband applications”. The study identified as essential “the opening (of) the frequency band 470 to 694 MHz to mobile communications and assigning a bandwidth of at least 60 MHz to an autonomous, high-performance mission critical mobile broadband network.”

Despite substantial advocacy work by States and Territories, no feasible 3GPP spectrum has been allocated for dedicated public safety purposes in Australia. Without dedicated spectrum, there are potential limitations on the achievement of Priority and Pre-emption and Quality of Service requirements of the Australian PSMB High Level Requirements. Without dedicated spectrum, there is also only one viable PSMB spectrum option available for Australia, which requires access to commercial spectrum through a commercial PSMB delivery model.

The *Public Safety Mobile Broadband Strategic Review – Final Report* discussed the spectrum impasse in Australia and recognised the States and Territories expressed concern “that by not holding a valuable spectrum asset, commercial leverage when negotiating to secure suitable MNO services is limited.” States and Territories share the view that the Commonwealth is in a unique position to ensure that any PSMB solution is fairly and sustainably priced and the advantage this position brings should be used to secure public safety outcomes.

The option to access spectrum via commercial entities should only be as an interim PSMB capability spectrum solution while longer-term options remain under consideration as technologies evolve and may become viable and the spectrum planning landscape continues to change. This expiring spectrum licence consultation is the opportunity to recalibrate spectrum holdings to enable the needs of the Australian community’s safety to be met. It is noted that Australia’s spectrum law allows third party use and commercial trading of spectrum or other access arrangements. Given that certain spectrum allocations may be underused by commercial entities, there is an opportunity as part of the expiring spectrum licence approach to identify underuse and encourage redeployment via regulatory or commercial means for dedicated public safety use.

Returning to ACMA’s questions relating to the suitability of the public interest criteria, this submission strongly recommends public safety is the primary criterion for consideration and is weighted more heavily than other criteria in its importance. The effect of loss of connectivity and reduced capability for emergency services to respond to situations is well documented. The ACMA’s argument that high-value spectrum should not remain underutilised by preserving it for rare contingencies such as worst-case disaster responses grossly undervalues the adverse effects of these disasters on the Australian community.

Natural disasters not only cost lives and personal property but add huge fiscal pressure to government and the community. As expressed in the 2022 Flood Inquiry Full Report¹, the 2022 February-March events across NSW and South-East Queensland alone cost over \$3.35 billion and costs are likely to continue to increase with climate change. The financial costs to the Australian people are greater than the costs of recovery and rebuilding communities. Fiscal pressures have a domino effect and spread to affect many industries, communities and families. For example, following the 2022 floods, house prices increased by 24.8% and rents by 12% in regional areas².

The costs to communities extend beyond the financial costs and can impact the mental and physical health of those affected. Floods cause significant damage, leaving properties wrecked and communities torn apart. The cost to replace property can be in the billions, and the social cost of adverse mental and physical health effects, as well as disruption to livelihoods and education, equally great.³

¹ 2022 Flood Inquiry, Volume Two: Full Report

² Ibid

³ Ibid p237

Investment in appropriate spectrum for an Australian PSMB can have a significant ongoing impact on the reduction of costs to communities and to governments at all jurisdictional levels. Providing our ESOs with the right tools to communicate allows faster and more efficient responses to emergencies and natural disasters.

It is recognised that the commercial market enhances connectivity, which has a clear community safety benefit. However, the risk of prioritising competition in the commercial market above community safety means that investment is less likely to occur where the return on investment is less attractive. Rural and remote communities do not have the purchasing power to attract commercial investment so remain vulnerable to digital exclusion. These are the conditions – where the market fails – where government is designed to step in. Based on the above arguments, we submit that the ACMA place more weight on the public benefit and need and ensure that public safety is considered over and above commercial opportunity.

Because of its importance in saving lives, protecting property and reducing recovery costs, we argue that there should be a standalone criterion for public safety. While criterion 4 considers public safety as an aspect of public benefit, the government need for spectrum to undertake its role in keeping the public safe is diluted by not being a criterion for consideration on its own. The objects of the *Radiocommunications Act 1992* clearly stipulate government use of spectrum for defence, national security, law enforcement or provision of emergency services public safety, and yet this consideration is valued less than efficiency, investment and innovation, and competition.

In summary, in this section we present that:

- Renewed spectrum licences can be geared to support regional connectivity
- That public safety should be positioned as the primary criterion in relation to public interest
- To support public safety, the Commonwealth should provide adequate spectrum for PSMB.

2. What are your views on the proposed 4-stage approach to undertaking the ESL process?

Given the complexity of management of spectrum allocation, we appreciate the extensive timeframe for this exercise. The NSW Telco Authority has strong interest in engaging with the ACMA in each stage of the process, with a view to securing suitable 3GPP spectrum for national public safety and emergency response use.

It is requested that the ACMA establish a regular engagement with state and territory interested parties to gain a better understanding of the connectivity and communication needs, and challenges faced by ESOs in increasingly complex and dangerous environments across Australia.

3. Are there any band-specific issues that we should consider as part of this ESL process?

While there are a range of PSMB models progressing internationally, international best practice involves dedicated spectrum. Without this, the Commonwealth Government must pursue commercial arrangements to prioritise ESO use of commercially available spectrum with Mobile Network Operators (MNOs) or develop a strong regulatory response to see the same outcome achieved. This must be achieved in alignment with other requirements including ensuring quality of service, pre-emption, availability of the service anywhere, anytime and at a cost acceptable to states and territories.

If this is not achieved, the PSMB will not succeed. Until this outcome has been realised, the NSW Telco Authority will continue to agitate for dedicated spectrum through the newly formed National PSMB Taskforce. This aligns with the findings of the Final Report to the NSW Bushfire Inquiry, which found:

That, in order to ensure emergency responses agencies can communicate across state and territory borders, the Commonwealth Government allocate 10 + 10 MHz as a dedicated spectrum for Public Safety Mobile Broadband (PSMB) at no costs to states and territories.

Frequencies below 1 GHz have outstanding characteristics in terms of in-building penetration and indoor coverage, as required by ESOs for their everyday work. They are also suitable for cost-efficient mobile radio communications in rural areas due to the pre-existing common radio network infrastructure of the ESOs in Australia. Secure, high-coverage, highly available and future-proof mission critical mobile broadband communications are an elementary part of ensuring public safety and saving lives.

Following the sale of Band 26 to commercial carriers, the PSMB has been allocated an inadequate amount (5 + 5 MHz) of spectrum in Band 27. As the ACMA is aware, there is no existing equipment ecosystem to support the deployment of Band 27, making the band unusable for the PSMB now and for the foreseeable future. Development of suitable devices for this band is unlikely as the return on investment does not hold up to commercial justification.

Irrespective of the non-existent ecosystem, the allocation of 5 + 5 MHz has been found to be insufficient for PSMB needs. During large scale events where the pressure on ESOs is the greatest and the risk to loss of life is highest, a larger allocation is needed to ensure communications are maintained. This is the very definition of 'mission critical' – that the communication is 1% proof – that is, designed to withstand the most severe events, such as the 1 in a 1000-year flood or fire.

Bands 28 and 5 are considered optimal ranges for the PSMB as they are within the globally harmonised frequency range for broadband Public Protection and Disaster Relief (PPDR).⁴ With existing applicable devices and equipment, 10 + 10 MHz of Band 28 or Band 5 spectrum would be very valuable for the provision of emergency management communications via the PSMB to support our ESOs to keep our people and places safe. These bands are currently allocated to Telstra, TPG and Optus, and it is appreciated these entities will be driven to preserve their allocations to grow their commercial opportunities.

Analysing the use of these bands to identify if spectrum is being used efficiently and effectively in accordance with the criteria established under the *Radiocommunications Act 1992* is strongly supported. This is specifically to maximise the overall public benefit and making adequate provision of spectrum for use by agencies involved in law enforcement or the provision of emergency services.

Additionally, the inclusion of a 'use it or lose it' clause as a licence condition could be explored to allow smaller mobile network operators to use underutilised licenced spectrum where the primary licence holder has no plans to utilise the spectrum band in the near future. This would allow greater use of spectrum band and promote competition by allowing smaller mobile networks service regional areas.

To better promote the long-term interests of end-users, allow increased competition and potentially improved coverage in underserved areas, the ACMA should consider including conditions on renewed licences that require mobile roaming in specified areas. Around 26 per cent NSW land mass has only one carrier's network available, with a different carrier's network available at another location in the same region. This patchwork of non-complementary coverage affects road corridors and people moving across regional areas. Having access to mobile roaming would result in better outcomes for regional communities as it would not require multiple subscriptions to different carriers in the same region which is financially and practically burdensome.

In summary, in this section we present that:

⁴ Resolution 646 adopted by ITU WRC-2015.

- Spectrum in bands 28 or 5 should be reallocated to PSMB following expiry of the licences
- Conditions should be added to renewed licences to ensure more efficient use of spectrum
- Conditions should be added to renewed licences to promote coverage in regional areas

4. Are there any other matters that we should consider in connection with the ESL process?

As indicated above, the NSW Telco Authority would like to establish an interjurisdictional consultation comprising State and Territory interested parties with the ACMA to identify opportunities for underused spectrum for PSMB use.

It is also important to ensure that the public interest criteria for renewing spectrum licenses aligns with the conditions contained within spectrum licences won through future auction processes. That is, those spectrum allocations through auction should meet the same public interest criteria as those in the renewal process to ensure the public interest is upheld in both circumstances.

The renewal process should consider information sharing and cross-carrier roaming occurring automatically when there is a natural disaster declaration. As noted in the Australian Competition and Consumer Commission's Regional Mobile Infrastructure Inquiry, Report on Preliminary Findings, temporary mobile roaming during natural disasters is technically feasible.

Carriers already have agreements to enable triple-zero calls (only) in recognition of the public interest in providing this critical service. Emergency mobile roaming would constitute a further tool for supporting public safety communications and information access to support calls, other than a triple-zero emergency call. The role that family and community members have in protecting themselves and each other during emergencies, often as the closest available responder, would likely greatly benefit from emergency roaming, as recognised by the NSW Bushfire Inquiry.

5. What are your views on the proposed approaches to valuing the spectrum and payment arrangements?

It is understood that the ACMA has a need to balance commercial and public interests, and it is also noted that in enhancing the commercial market's access to spectrum, there is a public safety benefit as more consumers get better services. The commercial value of spectrum is also very well understood, as is the desire to cost this valued resource appropriately.

Spectrum fees should also be decided in a manner that is consistent to and aligns with the proposed public interest criteria. One approach to spectrum fees to ensure alignment with the long-term public interest could be to provide a spectrum fee rebate for mobile networks in regional areas to incentivise licence holders to build networks where there is limited access to reliable mobile coverage.

Consultation on the approach to valuation for the renewal of licences should be as early as possible. In the context of valuing, renewing and auctioning licences, the ACMA should consider the principles outlined in the Commonwealth Procurement Rules.

However, should a solely commercial approach be taken to spectrum allocation in the bands suitable for PSMB, the Australian community will lose out with the most adverse impacts being felt by Australia's most vulnerable. Without spectrum allocated for PSMB use, there will remain vast tracts of Australia without coverage for emergency services, as currently the commercial network does not cover these areas. Spectrum allocation for specific use cases to augment commercial coverage will be necessary so that ESOs can conduct life and property saving activities in under-serviced areas.

Due to the importance of public safety to Australian people, we believe that the Commonwealth should allocate spectrum for public safety purposes without charge for a uniformed, interoperable PSMB in every state and territory.

6. What are your views on the proposed approach to examining use under existing spectrum licences?

As raised previously, public safety and government use should be given the highest priority in relation to 'use' and public interest criteria.

Already at present, the NSW ESOs use various commercial and independent broadband networks and services for mission critical and non-mission critical communications in addition to the P25 system. Some examples include fibre-optic networks, mobile and satellite radio, and WiFi for drone control, database queries, image and video transfer, applications for alerting forces, coordinating missions and for documentation and evaluation.

These commercial solutions do not fulfil the public safety organisations' requirements for mission critical communications in relation to security, network coverage and availability. Furthermore, they provide only limited cross-organisational and inter-jurisdictional communication, which is critical during joint missions.

Continuous, secure, and independent communication amongst ESOs in a form that is resistant to manipulation by third parties is critical. Frequently, ESOs are engaged in complex, large scale, inter-organisational and inter-jurisdictional missions, such as responses to natural disasters, terrorist incidents, and major events. Such responses necessitate rigorous security and availability requirements (information security, integrity, redundancy) that surpass the capabilities of existing commercial networks. In short, ESOs require communications infrastructure that is conceived and operates as an independent and autonomously run network with sufficient bandwidth for the required radio communications.

As mentioned above, in order to maximise use of spectrum, if spectrum owners are not using spectrum in particular geographical areas, it should be made available after a set timeframe, unless the spectrum owner can demonstrate imminent use. Also, following an examination of service coverage, if coverage provided is poor, spectrum owners should be given a choice to either meet set coverage targets (set by the ACMA based on public demand) or sell the spectrum to other providers with appropriate plans for addressing set coverage gaps. This approach would encourage operators to address poor rural and remote coverage. Mobile Network Operators could either use their own funds or seek funding from other sources, such as the mobile black spot program. If the unused spectrum were to be auctioned, a relative part of the cost of the spectrum could be reimbursed to the previous owner.

Providing governance over coverage data to ensure a standardised approach to data collection would be beneficial to consumers, regulators and agencies seeking to overcome coverage gaps through funding rounds and other initiatives. The ACMA could consider including the provision of coverage and usage data as a requirement of spectrum licences, with levels of detail prescribed. Additionally, accurate mapping of signal strengths could be made publicly available to support telecommunications funding and consumer decisions.

In summary, in this section we reiterate that:

- Emergency service communication systems require high levels of security and operation to ensure they are fit for purpose. Such features surpass existing commercial networks

- Spectrum owners need to demonstrate efficient and effective use or meet set targets for coverage to retain their licence
- Licence conditions should be used to ensure provision of better data and more efficient use of spectrum