

Our reference: BN-02332-2024

Sean McQueen
Australian Communications and Media Authority
Online submission

Dear Mr McQueen

Submission to Expiring spectrum licences: stage two

I am pleased to provide comment to the Australian Communications and Media Authority (ACMA) on the 'Expiring spectrum licences: stage two. Information gathering, and views on uses of frequency bands and alternative licence conditions' – consultation paper.

The NSW Telco Authority has led this NSW Government 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 ACMA for, or in relation to, spectrum licences under the *Radiocommunications Act 1992*.' Contributions to this submission have been provided by Transport for NSW and the Department of Regional NSW.

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

Please find our detailed response to the consultation at Attachment 1 below.

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

Yours sincerely

[REDACTED]

[REDACTED]

29/04/24

Attachment 1: Detailed feedback to expiring spectrum licences: stage two

Resilience and temporary disaster responses

The NSW Government supports alternative licence conditions that would increase resilience and temporary disaster response. Multiple mechanisms that can function concurrently could be used to achieve this goal, with licence conditions either directly requiring such mechanisms, or by otherwise encouraging their use.

- The introduction of a **use-it-or-share/lose-it** condition, where licence holders are required to share spectrum holdings if they are not using or plan to use holdings thoroughly, could be explored to allow smaller mobile network operators to use underutilised licenced spectrum. This would allow greater use of spectrum band and promote competition by allowing smaller mobile networks service regional areas and, in doing so, would build resilience in less served areas.
- By requiring **domestic roaming** between compatible technologies, increased resilience of service can be delivered where an outage may affect a single carrier, or individual towers. Making this a licence condition additionally serves as a commercial incentive for licence holders to increase their footprint where they lack existing coverage. Having an established domestic roaming capability that is always available provides greater resilience than a framework to establish emergency roaming on request.
- **Manual roaming** can be provided using methods such as Restricted Local Operator Services (RLOS)¹ in 3GPP technologies, where end users can manually elect to join third party networks that may not be operated by their service provider. Such a service could be used as a mechanism in use-it-or-share/lose-it conditions which would help enable disaster responses by facilitating the local population joining a temporary network whilst the service they subscribe to is suspended. Notably, this model is only possible where there are multiple service providers operating in the area.
- **Neutral hosting arrangements** enable providers to service an area using the equipment of a third party, the neutral host. This can assist commercial providers to meet roll out obligations by covering licenced areas where they have limited capacity to provide the infrastructure, whilst allowing third parties to provide services where they would otherwise be inhibited.

In addition to the proposed conditions above, the NSW Government contends that Band 5 spectrum in the 850 MHz range is well placed to support public safety and emergency management activities, as has been previously iterated to the ACMA. If this band were allocated for public safety use rather than being re-licensed to the market, it could be leveraged during commercial negotiations to secure better value for money for Public Safety Mobile Broadband (PSMB) to the Commonwealth, states and territories. Using prime spectrum holdings to incentivise a competitive market response for PSMB was the model used in the United States. This saw Congress allocating high value spectrum resources for public safety broadband communications, which was leveraged to negotiate advantageous terms and conditions with potential network partners and vendors in building the FirstNet network. This approach could be replicated in Australia by the Commonwealth Government and is a timely consideration given the PSMB program is soon to approach the market for PSMB costs.

¹ RLOS is described in ETSI TS 123 401 and is used to meet the requirements of the FCC in networks where domestic roaming arrangements haven't been established. It requires the user to accept connecting to the third party network.
<https://www.fcc.gov/wireless/bureau-divisions/competition-infrastructure-policy-division/roaming-mobile-wireless>

Examining use of spectrum via coverage maps

The ACMA is proposing to use coverage maps as a proxy for spectrum utilisation from the major operators and notes several of the limitations involved in doing so. The NSW Government is not supportive of this direction as the coverage maps currently produced by the operators use different models with varying data and inputs, resulting in each operator's prediction model generating significant differences.

We recommend that if the ACMA wishes to follow this approach, these commercially sensitive variables are set by the ACMA, including requirements to use base geodata of a certain resolution and vintage².

It is not uncommon for Public Telecommunications System (PTS) registrations to be performed without azimuth details and at the maximum possible output power, whilst coverage predictions are performed on more precise operational information. As the opportunity for secondary users to access spectrum in any kind of sharing arrangement is more likely to be based upon registration details instead of a coverage map, the NSW Government is concerned about decisions being made on one set of data (coverage maps), and implementation being held to another (registration details). The gap between these two data sets should also be of interest to the ACMA to elucidate the difference between the claimed usage of the spectrum (registrations) and the actual usage (serviceability). This would directly show the efficiency of the spectrum in terms of geospatial area.

Any rollout obligations and impacts to the ability for secondary users to share the spectrum will therefore need to consider this geospatial efficiency metric, with significant discrepancies impacting the ability to serve the public interest – and perhaps triggering the use-it-or-share/lose-it conditions.

Frequency band use

The NSW Government broadly agrees with the continued use of the identified bands for wireless broadband use and asserts that the 1800 MHz licences currently used for rail should be reallocated for that purpose at a minimum.

The ACMA should note that the 1800 MHz band is vital for critical communications for transport operations. In simple terms, if the spectrum was not reallocated to Transport for NSW, and to other transport agencies across Australia, there would be a huge risk to rail operations and to public safety because government transport agencies would not have sufficient time to procure alternative solutions through standard government processes.

The long-term affordable re-allocation of the 1800 MHz spectrum band is critical for the continued safe and efficient operation of rail services in Australia, as well as achieving national interoperability, productivity and decarbonisation objectives. The failure to renew all or part of the spectrum will have a whole of operations impact on passenger and freight services within NSW metro area.

In addition to the above regarding 1800 MHz, Transport for NSW is aligned in its approach to 1900 MHz spectrum with other state transport agencies as they seek to gain this additional spectrum to enable interoperability of the Future Rail Mobile Communication System (FRMCS) across Australia.

The Australian Rail Association (ARA) in its submission to the ACMA on the *Replanning of the 1880 – 1920 MHz Band: Options Paper Consultation* advocated for preservation of existing allocations and

² Geoscience Australia makes ~30 m resolution terrain data available freely, which would be an improvement upon some of the existing coverage maps based on 100 m resolution data.

the 1900 MHz band to be made available for rail purposes in line with the EU's allocation. The rationale included:

- The Global System for Mobile Communications – Railway (GSM-R) is unlikely to be supported beyond 2030.
- Compared to GSM-R, the FRMCS offers a higher quality of service and is more cost effective. The system is also planned to deliver more in terms of applications such as Automatic Train Operation (ATO) or the Connected Driver Advisory System (C-DAS).
- To enable the parallel operation of GSM-R and FRMCS during an approximately 10-year migration phase, and to benefit from new railway critical applications during and beyond migration, access to a sufficient harmonised spectrum for railway mobile radio is essential.

The NSW Government supports the allocation of spectrum within the 1900 MHz band along with the existing 1800 MHz allocation to Australian rail agencies to enable implementation of the FRMCS and the improved capability capacity that it will bring.

Alternative licence conditions

The NSW Government is supportive of rollout obligations as it would likely discourage 'spectrum squatting' and encourage infrastructure sharing at a minimum. We propose a 'use-it-or-share/lose-it' clause in licences, where the ACMA would permit other service providers to use the incumbent's spectrum if specified service levels are not met within a specified timeframe.

This sentiment is echoed in Recommendation 1 of the inquiry into co-investment in multi-carrier regional mobile infrastructure, entitled 'Connecting the country: Mission critical':

Recommendation 1

2.50 The Committee recommends the Australian Government review the implications of the current framework for the allocation, management, and use of spectrum for the provision of regional telecommunications services, giving consideration to issues such as non-use and area-wide licensing. The review should identify policy or regulatory changes to support increased coverage and competition in regional, remote and First Nations Australian communities.

In addition, we propose facilitating infrastructure sharing via a hybrid spectrum/apparatus licence approach. We would like to further see encouragement for licensees to meet any rollout obligations by engaging with third parties to facilitate neutral hosting arrangements or via manual roaming as mentioned in the resilience and temporary disaster section.

Neutral hosting by third parties would be preferential to authorising separate services on the same spectrum where multiple networks could experience overloading. Using a neutral host model to enable providers to service areas where they have limited capacity (or intention) to provide infrastructure can improve coverage of the incumbent licence holder, thereby increasing efficient use of the spectrum and can work towards meeting any roll out obligations.

Recommendation 2 of the inquiry into co-investment in multi-carrier regional mobile infrastructure, entitled 'Connecting the country: Mission critical' supports using licence conditions to mandate open access and active sharing:

Recommendation 2

2.137 The Committee recommends the Australian Government review current licensing arrangements to consider the merits of including licence conditions on mobile network owners and other spectrum licensees of terms and conditions that mandate open access and active sharing solutions in defined circumstances and or geographic locations.

In summary, roll out obligations imposed via licence conditions can lead to more efficient use of spectrum and increased coverage in areas that are poorly served. While spectrum sharing is a viable option, the conditions establishing it would need to include clauses to manage network overloading during times of increased use, such as natural disasters. Infrastructure sharing models including active equipment sharing present as a more sustainable option to increase coverage and competition.

Enforcement of alternative licence conditions

Whilst the ACMA can only cancel the entire spectrum licence, a condition requiring the licence holder to geographically fragment their licence to areas served or face cancellation could be implemented. This would serve as one step in a graduated approach. The unused fragment could then be sold, traded or surrendered via existing licensing mechanisms to other operators, either directly by the licence holder or by returning the licence to the ACMA. The obligations of that spectrum licence should persist through to the new licence holder. Fragmenting spectrum licences can directly increase efficient use of the spectrum to focus service provider use on the licenced area, rather than a broader area where some locations within the licence may be under served.

Smaller and cheaper spectrum licences

The NSW Government is supportive of smaller and cheaper spectrum licences. Operators that wish to acquire 'national' licences could do so by buying multiple smaller areas. We strongly recommend standardisation of the geographic areas between spectrum licences and aligning the expiry dates of licences by staggering any future renewals to one or a couple of aligned dates. This will allow for the ACMA to more easily refresh or revisit any allocations that may not be functioning in the public interest.

The main purpose for having multi-decade spectrum licences is to facilitate investment in infrastructure. However, as the incumbent licence holders have divested themselves of infrastructure, a shorter time period for spectrum licensing is likely to lead to increased competition in under-served areas as smaller carriers are more likely to be able to acquire spectrum and plan business cases for more typical business venture periods.