



Submission in response to
ACMA Consultation

**Review of the 850 MHz and
1800 MHz Spectrum
Licence Technical
Frameworks**

Public Version

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COMMENTS ON REVIEW OF THE 850 MHz AND 1800 MHz SPECTRUM LICENCE TECHNICAL FRAMEWORKS

Optus welcomes the opportunity to provide feedback to the Australian Communication and Media Authority's (**ACMA**) consultation paper: *Review of the 850 MHz and 1800 MHz spectrum licence technical frameworks*.

Optus supports regulatory settings that:

- promote efficient use of spectrum,
- provide long-term investment certainty,
- align with international standards and equipment ecosystems, and
- maintain appropriate protection for incumbent and adjacent services.

The Australian Mobile Telecommunications Association (**AMTA**) has provided a submission in response to this consultation. We support the positions set out in the AMTA submission and provide further, Optus specific responses to the questions posed by the ACMA in the following section.

OPTUS RESPONSES TO CONSULTATION QUESTIONS

Q1. Do you agree that the existing section 145 determinations and advisory guidelines for the 850 MHz and 1800 MHz band can remain unchanged to support the renewed spectrum licences?

Optus agrees with ACMA's view that the existing section 145 determinations and Radiocommunications Advisory Guidelines (**RAGs**) for the 850 MHz and 1800 MHz bands can remain materially unchanged for the renewed spectrum licences.

These instruments were recently reviewed and updated, are well understood by industry, and continue to provide a robust and predictable interference management framework. Retaining them with only minor modification supports regulatory stability and avoids unnecessary compliance burden at a time when licensees are planning for long-term renewals and major network investments.

Q2. Do you think that the proposed condition to support the operation of wideband amplifiers would facilitate scenarios envisioned by licensees? In which frequency bands do licensees intend to operate wideband amplifiers? Should these arrangements also be included in the technical framework for AWL and/or PTS apparatus licences?

We strongly support the introduction of licence conditions to explicitly enable the operation of wideband amplifiers. We support the position on wideband amplifiers set out in the AMTA submission to provide further flexibility and clarity.

Wideband amplifiers are increasingly integral to modern 4G and 5G radio access network deployments, enabling:

- reduced site complexity,

- lower capital and operating costs,
- more efficient use of infrastructure, and
- improved flexibility across multiple contiguous and non-contiguous bands.

We anticipate deploying wideband amplifiers across multiple spectrum-licensed bands, including (but not limited to) 1800 MHz, 2 GHz, and 2.5 GHz MHz bands.

Equivalent arrangements should be extended to Area-Wide Licences (**AWL**), and Public Telecommunications Service (**PTS**) apparatus licences where wideband amplifiers are used across mixed licence types. A consistent technical framework across spectrum and apparatus licences is critical to enable practical deployment and avoid artificial regulatory constraints that do not reflect real-world equipment behaviour.

Q3. Do you agree with the proposed changes to incorporate the frequency downshift in renewed 850 MHz band licences?

Optus agrees with the proposed changes to incorporate the 1 MHz frequency downshift in renewed 850 MHz band licences.

Q4. What are your views on the proposed removal of rail-specific conditions from renewed 1800 MHz band spectrum licences?

Rail-specific conditions should be removed from renewed 1800 MHz spectrum licences.

Given ACMA's preferred policy position that rail services transition to apparatus licensing arrangements post-expiry, it is appropriate that renewed spectrum licences for wireless broadband are:

- technology-neutral,
- streamlined, and
- free from legacy conditions that no longer apply to their intended use.

Removing rail-specific provisions improves clarity, reduces regulatory complexity, and better reflects contemporary mobile broadband deployment models.

Q5. What are your views on the proposed options for unwanted emissions for transmitters in the upper 1800 MHz frequency segment?

Optus supports ACMA's **Option 2: adoption of 3GPP Category B Option 1 limits in all spectrum licensed areas**, subject to appropriate implementation safeguards.

Adoption of ACMA's Option 2 would materially improve access to the global equipment ecosystem for the 1800 MHz band, enabling greater vendor choice, lower equipment costs, more efficient network deployments and hence improved public mobile experience. These benefits are particularly important as mobile networks continue to evolve to support advanced 4G and 5G services over the medium to long term.

Optus acknowledges the concerns raised by rail authorities regarding potential interference impacts on their GSM-R networks under a relaxed unwanted emission regime. We note, however, that these concerns are specific to GSM-R networks which has an end of support in 2035, and that state rail authorities are in the process of transitioning, or will have transitioned, away from GSM-R within this time. The Australasian Railway Association (**ARA**) provided the status and configuration in their ACMA - Expiring Spectrum Licenses –

Stage 3 Review of the preliminary views 25 June 2025 submission. Table 2: current and planned spectrum use in Australian railways from this paper is reproduced below:

State	Spectrum Band	Current systems and uses	New system and uses	Migration Status	Comments
QLD	1800 MHz / 1900 MHz (Sunshine Coast)	GSM-R supporting ETCS Level 2 and ATO, in 1800 MHz (CRR Tunnel and Inner City)	GSM-R to support ETCS Level 2/ATO in 1800 MHz (Gold Coast) FRMCS to support ETCS Level 2/ATO in 1900 MHz (Sunshine Coast)	In delivery	Completion of all projects required prior to Brisbane Olympic Games, 2032.
NSW	1800 MHz	GSM-R, supporting voice, data and ETCS Level 2	GSM-R replacement (FRMCS), to support voice, data and ETCS Level 2	In planning	Must complete transition before GSM-R support ends, also to remove equipment from high risk vendors.
VIC	1800 MHz	GSM-R, supporting voice and data	GSM-R replacement (FRMCS), to support voice, data and ETCS Level 2	In planning	Must complete transition before GSM-R support ends in 2035.
SA	1800 MHz		FRMCS, to support voice, data, Live streaming CCTV from on-board, train control to field digital authorities and ETCS Level 2	In planning	Planned to use 1800 MHz, in line with other jurisdictions
WA	1800 MHz		4G LTE, to support CBTC deployment (Perth METRONET)	In delivery	Significant sunk costs in 1800 MHz system.

Since there are no GSM-R services across SA and WA metro areas, there should be no requirement to maintain stricter emission limits in these regions. Potential interference risk is limited to rail sites in the Brisbane, Sydney and Melbourne, where it is reasonable to define protection requirements.

Rail services can continue to be protected via robust safeguards which manage interference risks on a case-by-case basis. In Optus' view, RALI MS34 can be updated to reference 3GPP Cat B Option 2 for these specific cases. 3GPP Cat B Option 2 was developed specifically to protect adjacent legacy systems such as rail by managing potential interference with stricter unwanted emission limits. Using RALI MS34 as the mechanism to specify location specific unwanted emission limits is a similar arrangement to the radio altimeter protection requirements in the 3.7 GHz band. RALI MS34 has the flexibility to reference individual cities for their requirements and be altered as rail migrates fully to Future Railway Mobile Communications System (**FRMCS**). Optus believes this is a more proportionate and flexible approach than maintaining band-wide emission limits that are materially more restrictive than global standards.

Rail services operating in the 1800 MHz band are also expected to transition to apparatus licensing arrangements following expiry of spectrum licences in 2028. In this context, maintaining spectrum-licence technical settings that are optimised for long-term wireless broadband operation is appropriate. Aligning unwanted emission limits with 3GPP standards provides regulatory certainty and avoids embedding transitional protections into the renewed spectrum-licence framework that may no longer be justified over the life of the renewed licences till 2044.

While we recognise that further assessment of impacts on adjacent band services (including cordless communications devices and aeronautical mobile systems) may be required, these

assessments can be progressed in parallel with adoption of the ACMA's Option 2, rather than deferring alignment with international standards indefinitely.

The ACMA's Option 2: adoption of 3GPP Category B Option 1 limits in all spectrum-licensed areas represents the most technology-neutral, future-facing approach, delivering net public interest benefits through improved spectrum efficiency, reduced deployment costs, and enhanced service outcomes for consumers and businesses.

Q6. Can you provide any analysis or other evidence on coexistence with adjacent band services that would support consideration of Option 3?

As outlined in our response to Q5, rail service protection under the ACMA's Option 2 can be appropriately supported via changes to RALI MS34, rather than by adopting the ACMA's Option 3.

Q7. What are your views on the proposed high-level licensing and technical arrangements for rail services in the 1800 MHz band, which are intended to apply after the expiry of spectrum licences?

The ACMA's proposed high-level approach to transitioning rail services in the 1800 MHz band to apparatus licensing arrangements is broadly reasonable.

In particular, we support:

- use of PTS (PMTS-B) licences for rail base stations,
- use of class licensing for mobile devices,
- alignment with existing RALI MS34 coordination principles, and
- retention of exclusive access for rail authorities within defined frequencies and geographic areas in the short-to-medium term.

It should be noted, however, that:

- licence duration limits should retain sufficient flexibility to avoid inefficient spectrum use,
- transition arrangements should be clearly defined to minimise uncertainty for adjacent spectrum licensees, and
- long-term decisions on optimal use of these frequencies should be made as early as practicable to support broader planning certainty.

Q8. What are your views on the potential effect that the proposed changes to the 850 MHz and 1800 MHz band technical frameworks may have on other services?

The proposed changes are unlikely to have material adverse impacts on other services, provided the ACMA's existing coordination and protection frameworks remain in place.

Q9. What are your views on the issues not being considered by this consultation?

Optus acknowledges ACMA's decision not to address certain issues in this consultation, including:

- boundary-registration constraints at spectrum/apparatus interfaces, and

- increases to exemption-from-registration thresholds.

While these issues are complex, we consider they remain significant to efficient network deployment, particularly at regional and remote boundaries. As such, the ACMA should continue progressing these matters in related and future reviews.

Q10. Do you have further information on the use cases and coexistence of PC 1 devices with other services that can assist in the future consideration of this issue?

Optus notes growing interest in PC-1 devices to support:

- fixed wireless access scenarios,
- enterprise and private network use cases, and
- improved uplink performance.

However, the ACMA's concerns regarding coexistence risks, especially for uncoordinated higher-power mobile devices are valid. We support a cautious, evidence-based approach and would welcome further consultation supported by:

- propagation modelling,
- realistic deployment assumptions, and
- assessment of cumulative interference impacts.