

The logo for Optus, consisting of the word "OPTUS" in a bold, teal, sans-serif font.

Submission in response to  
ACMA Public Consultation

**Review of the 1800 MHz  
band spectrum licence  
technical framework**

Public Version

November 2021

# Review of the 1800 MHz band spectrum licence technical framework

## Optus response to Consultation Paper (November 2021)

### Executive Summary

Optus welcomes the opportunity to provide comment on the Australian Communications and Media Authority (ACMA) Public Consultation Paper: *Review of the 1800 MHz band spectrum licence technical framework Consultation paper*.

In developing a technical framework for application across spectrum licences, we consider that ensuring the suitability of this spectrum for 5G deployment should be the key focus. Technical frameworks should, as much as is practicable, be aligned and applied consistently.

Optus supports, wherever possible, the harmonisation of licences and technical frameworks across the bands. This simplifies and encourages the rapid deployment, adoption and efficient use of spectrum and technology resources.

In summary,

- We support the proposed changes to the 1800 MHz band licence conditions.
- Optus will not agree to spectrum licence changes that afford additional protections to accommodate outdated equipment and technology. The ACMA licencing framework needs to encourage better engineering design and promote the adoption of newer technologies by licensees.
- Interference management is a common and important theme throughout TLGs. As a spectrum holder Optus accepts the interference management responsibilities placed on licensees to ensure efficient use of the bands. This and other spectrum licence frameworks are designed to manage interference between licensees in different parts of the band or in different geographical locations, and not provide a zero-interference environment.
- Considering or making changes to SLTFs which have the potential to impact large live networks to address isolated issues on legacy network technologies or spectrum use cases is not considered an effective or appropriate interference mitigation technique, particularly when the onus for such mitigations is placed only on a licensee operating one side of the geographical or spectrum boundary. The management of interference is a shared obligation.

Optus welcomes further commentary and analysis from the ACMA on the technical parameters, analysis and identification of any constraints in subsequent rounds of this TLG. We are keen to see the results the ACMA's current investigations and analysis to enable greater debate and discussion between TLG members.

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### Conditions in the spectrum licence

1. While all aspects of the proposed changes to conditions of spectrum licences in the 1800 MHz band (1800 MHz spectrum licences) are open for comment, the ACMA would like to draw attention to the proposed frequency range that out-of-band emission limits would apply for transmitters operating in the lower 1800 MHz band (1710-1785 MHz). Comment is sought on whether the frequency range should be: (a) +/- 45 MHz either side of the lower 1800 MHz band or (b) +/- (licensed bandwidth + 5 MHz) measured from the lower and upper frequency limits of the licence in a defined area? Other proposals could also be considered.

Optus expresses a very strong preference for following 3GPP standards.

### Impact on Incumbent services

2. Comment is sought on the effect the proposed changes to the 1800 MHz technical framework may have on incumbent services in the 1800 MHz band and adjacent bands.

Optus has no comment on this question beyond that contained in the AMTA submission.

### Proposed Changes

3. Comment is sought on the changes proposed to the:
  - > 1800 MHz band spectrum licence conditions
  - > s.145(4) determination for the 1800 MHz band

In general, Optus supports the proposed changes. However, we note that the agreed TLG position on the In-Band Unwanted Emission limits for AAS devices operating in the Upper 1800 Band has not been applied correctly in the 200kHz band from licence edge. The TLG proposed keeping the existing EIRP limits for non-AAS devices and proposed adopting new TRP limits for AAS devices which were directly translated from the existing licence conditions. For  $0\text{MHz} < \text{Freq\_offset} < 200\text{kHz}$ , the TRP threshold should be  $+15.5 \text{ dBm}/(30\text{kHz})$ .

Our preferred option for the in-band emission limits for devices operating in the upper 1800 MHz band is option 1, which is the adoption of the Category B limits for non-AAS and AAS devices as defined in TS 138 104, Table 6.6.4.2.2.1 and section 9.7.4.2, respectively. However, the option where non-AAS transmitters use the existing unwanted emission limits and AAS transmitters the use of existing limits to translate to TRP (6 dB conversion factor) is supported.

The TLG reached this compromise as the Rail Licensees had interference issues into their mobile terminals operating on their GSM-R network in locations which were close to MNO base stations and were in GSM-R areas of low network signal strength. Optus believes that there are extremely efficient and cost-effective mitigations available which do not require changes to the licence technical framework. These mitigations are based on managing the interference and not placing the onus for eliminating the interference onto one party.

Both Rail Licensees and MNOs have similar requirements of providing coverage along rail corridors. Therefore, any solutions which limit MNO coverage in the rail corridors are not looked upon favourably

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by the MNOs. As the interference only occurs during areas of low GSM-R signal strength and high MNO signal strength, coordinated and cooperative deployments where Rail and MNOs are co-sited will directly address the issue.

4. In relation to the draft amendments proposed to the s.145(4) determination (separate attachment in key documents section of this consultation), should additional measures be included to also grandfather device registrations when minor modifications are made? If so, what minor modifications should be permitted? For example, what should happen to changes that results in the same or lower horizontal radiated power for the purposes of device boundary calculations? Alternatively, what should happen to changes that result in the same or smaller device boundary as originally calculated when registering a device?

No additional measures need to be included to allow for minor modifications of grandfathered registrations.

Optus considers the adoption of higher resolution DEM (with corresponding parameters) whilst maintaining the same LOP for non AAS will not produce a significant (if any) increase in DBC failures. If an existing site (non AAS) is modified and then fails the DBC, then there are 2 options available

- Down tilt the antenna and deliver additional protection
- Register under Guard Space if the AP is satisfied that the Spectrum Boundary conditions can be met using additional information.