

AUSTRALIAN TELECOMMUNICATIONS ALLIANCE

SATELLITE SERVICES WORKING GROUP

SUBMISSION

To: Australian Communications and Media Authority

Re: ACMA's 520 MHz to 5 GHz band pricing review

Consultation paper - June 2026

21 August 2026



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1. AUSTRALIAN TELECOMMUNICATIONS ALLIANCE

The Australian Telecommunications Alliance (ATA) is the peak body of the Australian telecommunications industry. We are the trusted voice at the intersection of industry, government, regulators, and consumers. Through collaboration and leadership, we shape initiatives that grow the Australian telecommunications industry, enhance connectivity for all Australians, and foster the highest standards of business behaviour. For more details, visit www.austelco.org.au.

For questions on this submission, please contact Mike Johns, m.johns@austelco.org.au.

2. INTRODUCTION

- 2.1.1 The Australian Telecommunications Alliance (ATA) Satellite Services Working Group (SSWG) welcomes the opportunity to provide this submission in response to the Australian Communications and Media Authority's (ACMA's) *520 MHz to 5 GHz band pricing review Consultation paper - June 2026* (subsequently called the 'Consultation paper').
- 2.1.2 The SSWG supported the ACMA's decision as a result of the Spectrum Pricing Review (SPR)¹ to reduce the taxes on Space and Earth station licences in the frequency ranges of 5 to 8.5 GHz by 25%, 8.5 to 17.3 GHz by 50% and 17.3 to 31.3 GHz by 90% to bring the tax levels closer to those of similar countries. However, at that time, ACMA made no tax changes to the satellite bands below 5 GHz but proposed a further review of price settings in the 2.69 GHz to 5 GHz band in 2024-25, which resulted in no tax changes, but proposed a further review of licence pricing in the 520 MHz to 5 GHz band, which is the subject of the paper being responded to here.
- 2.1.3 The ATA's SSWG provided a response to the 2.69 GHz to 5 GHz band pricing review², and this present response will include many of the points raised then as they are still valid in consideration of the wider frequency range.
- 2.1.4 The 960 MHz to 5 GHz band is of particular importance to the members of the SSWG for space services:

- **L-band** satellite communications operate in the 1-2 GHz frequency range.

The main space services in L-band provided by or of interest to SSWG members are:

- *Mobile Satellite Services (MSS)*: Which provide global voice and data networks and applications via SSWG satellite operators, for example the Broadband Global Area Network (BGAN), Internet of Things (IoT) and unmanned aerial vehicle (UAV). Some SSWG members operate Australia wide, non-GSO, MSS service links in this band in both the E to-s and s-to-E directions. A rapidly growing and important application in L-band is NTN (Non-Terrestrial Network). NTN provides wireless connectivity directly to standard, ground-based devices. Standardised by the 3rd Generation Partnership Project (3GPP) from Release 17 onwards, it bridges terrestrial cellular networks with orbital assets (such as LEO, MEO, and GEO satellites) to deliver uninterrupted global coverage.
- *Critical Emergency Response*: Delivering foundational voice and narrow-band data layers to emergency services operating in disaster zones where terrestrial grids are destroyed.
- *Maritime and Aviation Safety (AMSS and MMSS)*: Iridium L-band satellite terminals provide reliable primary or backup links for ships via the global maritime distress and safety system (GMDSS). Similarly, L-band satellite terminals provide aeronautical safety services to both Australian commercial airlines, government and private aircraft

¹ [ACMA's 'Response to implementation of the Spectrum Pricing Review Consultation follow-up and consideration of submissions DECEMBER 2020](#).

² [Radiocommunications pricing consultation paper - 2.69 GHz to 5 GHz band pricing review, and proposed 2026 updates to apparatus licence taxes 1 December 2025](#)

as well as 'EPIRB like' safety systems for light aircraft, boats and bushwalkers (i.e. Garmin INREACH).

- *GNSS / GPS*: Global navigation satellite systems transmit precise timing and positioning data across various L-band sub-frequencies (e.g., L1, L2, L5).
- *Environmental and Weather Tracking*: Polar-orbiting weather satellites (like NOAA and METOP series) transmit high-resolution imagery and telemetry data down to ground stations via L-band frequencies.
- **S-band** satellite communications operate in the 2-4 GHz frequency range between the lower-frequency L-band and the higher-frequency C-band. ITU-R and 3GPP have harmonised and standardized 1980-2010/2025 MHz paired with 2170 – 2200 MHz (3GPP band n256 as per 3GPP release 17 specifications). Furthermore WRC-27 agenda item 1.14 seeks to further harmonize 1980 – 2025 MHz globally and make additional spectrum available for MSS use.

The main space services in S-band provided by or of interest to SSWG members are:

- *MSS service links*: Some SSWG members operate Australia wide, non-GSO, MSS service links in this band in the s-to-E direction
- *Direct-to-device: Direct-to-device (D2D)* is a leading example of the NTN category. Multiple satellite providers use the band for direct connectivity from LEO and MEO satellite constellations to mobile phones in spectrum currently used for terrestrial IMT applications, and furthermore, some satellite providers are using or are intending to use 3GPP band n256 for direct connection to mobile phones in this band. This service is of growing strategic and public interest for regional and remote connectivity, emergency, disaster resilience and public safety in Australia.
- *Space Operations*: Some SSWG members use S-band for TT&C links to manage geostationary and non-geostationary satellite constellations.
- **C-band (downlink)** satellite communications operate in certain areas of Australia with Earth Receive apparatus licences in certain sub-bands of the 3.6-4.2 GHz frequency range.

The main space services in C-band downlink operated by SSWG members are:

- *Remote & Regional Links*: C-band is heavily used by commercial operators and teleports (such as in Sydney, Adelaide and Perth) to deliver high-reliability data links to Australia's remote areas, offshore oil and gas sites, and maritime sectors because it resists heavy rain disruptions.
- *Feeder Links & Control*: SSWG operators use C-band for feeder downlinks and TT&C links to manage geostationary satellite constellations.

3. RESPONSES TO THE CONSULTATION

- 3.1.1 The SSWG would like to provide the following responses to the questions posed in the Consultation Paper. The issues relevant to satellite services raised by ACMA are reproduced under the corresponding heading in italics, followed by the SSWG response.
- 3.1.2 The SSWG understands that the list of prescriptive questions on issues enables the ACMA to more easily compare and collate responses but would hope that the ACMA also considers the points raised in this paper that might fall outside of the scope of these questions.
- 3.1.3 The SSWG provides responses focussed on issues relevant to satellite services. It notes that the consultation paper makes little reference to space or satellite services other than their high demand in the 960 MHz to 2.69 GHz band and therefore encourages the ACMA to consider this response as an important input to their review. The issues raised in a number of questions do not give rise to any specific satellite-service concerns and therefore the SSWG does not provide a response, as indicated primarily from 3.2 onwards.

3.2 CONGESTION PRICING MODEL

Issue for comment 1: Do you consider the target congestion range is appropriately defined? If you consider a different target more appropriate, please present evidence and your reasoning to support your view.

- 3.2.1 As discussed in the consultation paper, congestion in a frequency band is an important criterion to inform on pricing changes. However, as is also identified in the paper, congestion of use cases within a frequency band can be significantly different to the congestion measured at the macro level.
- 3.2.2 The supplementary analysis of congestion within uses cases as described for a point-to-point studio to transmitter links (STLs) on page 17 of the paper is a case in point. Figure 6 (960 MHz – 2.69 GHz) identifies that the Fixed Earth service type reports an occupation bandwidth of 141 MHz and for Earth Receive 213 MHz. The paper does not identify what are the planned allocations bandwidths for these service types possibly because of the complexity of extracting this data from the 10 or more categories of ITU space services in this band. There are no details in the paper that would indicate whether satellite service types are more or less congested than the assessed macro congestion levels. The SSWG's point is that within the bands 520-960 MHz, 960-2690 MHz and 2.69-5 GHz frequency band ranges the macro congestion values do not necessarily reflect congestion values for satellite services. It could be suggested that ACMA has identified this by setting space system licence tax rates historically different to fixed point-to-point (P2P), fixed point-to-multipoint (P2MP), television outside broadcast (TVOB) station licences. What the annual taxes for space systems are and should be is considered under the pricing issue in response to Question 2.

Issue for comment 2: Do you consider the congestion pricing formula is appropriately defined? If you consider a different formula more appropriate, please present evidence and your reasoning to support your view.

- 3.2.3 While the congestion pricing formula may be useful to determine pricing changes from the existing price levels at a macro level, as was identified in the comments to Question 1, the macro congestion values do not necessarily reflect congestion values for satellite services. Of greater importance is that the existing annual licence taxes for satellite services (Division 8A: Space system licences, Apparatus licence fee schedule, Table 23) in the 960 MHz to 5 GHz band range are set historically artificially high.
- 3.2.4 The SSWG provides the following reasons for significantly reducing the baseline annual tax on Space system licences below 5 GHz in addition to ACMA's proposed band-wide tax reductions as supported by the congestion pricing formula and congestion analysis:

- **International comparison of satellite earth station licensing fees:** For earth stations, Plum Consulting conducted an international comparison of licensing fees for the ACMA in 2016³. Figure 1 below compares Plum's findings with the 2020 Australia earth licence fees by population density area and for C-, Ku- and Ka-band. It is evident that Australia had significantly higher fees than all of the other countries surveyed. One of the main reasons provided by ACMA for reducing the licence tax for Space Systems operating above 5 GHz was to align these prices with other jurisdictions⁴. While ACMA's first tranche of pricing reforms addressed the Ku and Ka-band fees, and to some extent the C-band uplink (5000 to 8500 MHz) fees, the high fees for the bands below 5 GHz should now be addressed. Comparing licensing fees for space services across countries can be notoriously difficult, due to differences in licensing regimes. However, it should be noted that in many European countries, there are no licence fees based on the ECC Decision (12)01 for L-band.

As noted in the SSWG's submission to the ACMA *'Implementation of the Spectrum Pricing Review - Proposed guidelines and focus areas for change'* (30 June 2020)⁵, "companies in the new 'space race' are building their new satellite networks and systems and planning their ground facilities right now. While Australia enjoys some natural advantages as a location for such space infrastructure, the ACMA's very high apparatus licence fees relative to its international peers remain a significant deterrent for both the deployment of gateways and for user terminals in Australia. As Australia aims for a 'globally competitive' space sector, we believe it will have to consider substantial reductions in fees for space services."

³ IFC 19-2016, Review of Taxation Arrangements for Satellite Services: Consultation Paper (Aug. 2016).

⁴ See Appendix A: ACMA's 'Response to implementation of the Spectrum Pricing Review Consultation follow-up and consideration of submissions DECEMBER 2020'. <https://www.acma.gov.au/consultations/2020-12/response-implementation-spectrum-pricing-review-consultation-392020>.

⁵ [CA SSWG submission to the ACMA's Implementation of the Spectrum Pricing Review - Proposed guidelines and focus areas for change, 30 June 2020](#)

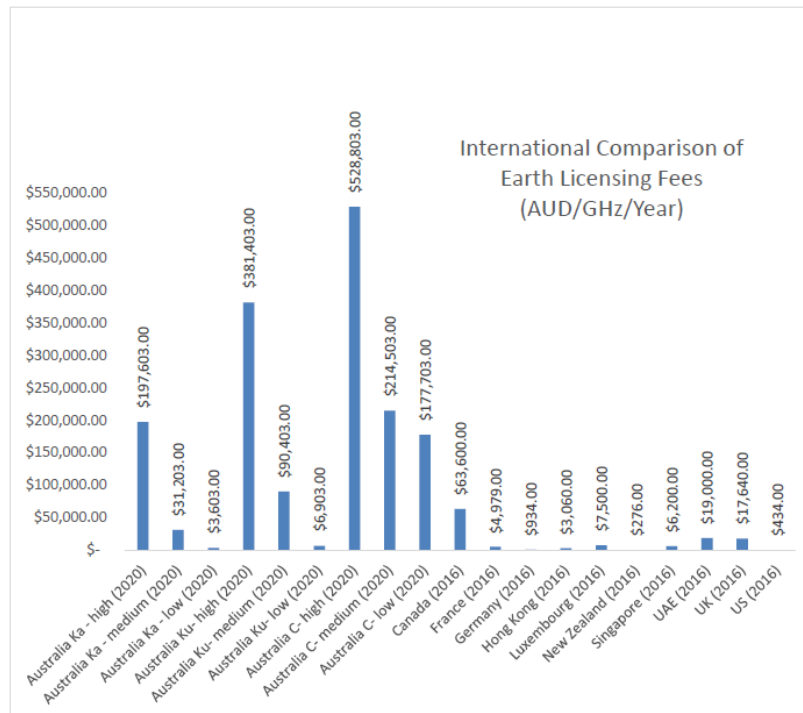


Figure 1 International comparison of earth licensing fees⁶

- Consistency of pricing for space services across the frequency bands:** In the SSWG's submission to the ACMA on the '*Radiocommunications pricing consultation paper - 2.69 GHz to 5 GHz band pricing review, and proposed 2026 updates to apparatus licence taxes (1 December 2025)*'⁷ the disparity in the tax rates for space system licences in the 960 MHz to 5 GHz bands was highlighted where the tax rates are significantly higher than the adjacent bands especially in the Australia-wide, low density and remote density geographic areas. Much of this disparity was as a result of ACMA reducing the tax rates for apparatus licences above 5 GHz while keeping the fees for licences below 5 GHz unchanged.
- Non-exclusive use of Spectrum:** A further discount is warranted on account of the 'non-exclusivity' of satellite spectrum use. Unlike many terrestrial services, which often involve exclusive licences, apparatus licences for many space services, e.g. in the FSS, MSS and BSS, are generally not exclusive. For example, a grant of space licence for a space station at one geostationary orbital location does not preclude the grant of a second licence for the same spectrum to another space station at an adjacent orbital location. Co-frequency, co-coverage geostationary satellites can operate as close as (on average) two degrees apart, and with 120 degrees of geostationary arc visible from Australia, as many as 60 such space stations could conceivably be licensed to serve Australia before there is spectrum congestion. This suggests that the base price for space apparatus licence fees should be significantly

⁶ See Attachment E to ACMA, IFC 19-2016, Review of Taxation Arrangements for Satellite Services: Consultation Paper (Aug. 2016).

⁷ <https://www.austelco.org.au/wp-content/uploads/2025/12/ATA-submission---ACMA-269-GHz-to-5-GHz-band-pricing-review.pdf>

discounted further on account of this ‘reusability’ of satellite spectrum. No single space or earth licensee should pay as if it was licensing spectrum for its sole use, to the exclusion of all other space or earth licensees.

- **Restrictions on use due to sharing requirements:** Bands shared by different types of services typically attract lower fees for any of the services in the band due to the constraints imposed by sharing. This should be taken into account by an appropriate discount factor in the apparatus licensing fees in shared bands. The discount factor could be a fixed number for all services in the band, to reflect the mutual constraints imposed by sharing (e.g., in bands where earth stations and fixed services are licensed and coordinated on a first-come-first served basis). Also, it should be noted that some applications such as feeder links and TT&C do not communicate with end users but only to the satellite which should attract further discounts.

It should be noted that for all geographic locations (Australia-wide, High, Medium and Remote densities) in the 960 MHz to 5 GHz band range (and 5-8.5 GHz range outside the scope of this paper), the space system licence tax is 2.3 times higher than P2P (Table 7 in the Fee schedule) and P2MP (Table 9) licences and 1.9 times higher than TVOB licences. Noting the sharing requirements between satellite earth stations and P2P and P2MP systems, the SSWG would propose that at a minimum, space system licence tax should be set at the same rates as P2P (Table 7) and P2MP (Table 9) licences in the 960 MHz to 5 GHz band range, and for the same reasons, be considered in the 5-8.5 GHz range.

3.3 CONGESTION ANALYSIS METHODOLOGY

Issue for comment 3: Do you have any feedback on how we have defined the key metrics and the scope of the analysis?

3.3.1 The SSWG has no specific comments in relation to this issue.

Issue for comment 4: Is our approach to unitising congestion conservative enough? Is it too conservative? Are there aspects of the measurement that should be included that aren't?

3.3.2 The SSWG has no specific comments in relation to this issue.

Issue for comment 5: Does the supplementary analysis appropriately incorporate broader pricing considerations beyond the primary congestion analysis?

3.3.3 The SSWG has no specific comments in relation to this issue.

3.4 PRIMARY ANALYSIS – CONGESTION IN KEY LOCATIONS

Issue for comment 6: Do our measurements of congestion correlate with your experiences of accessing spectrum in the selected bands and areas?

3.4.1 The SSWG has no specific comments in relation to this issue.

3.5 SUPPLEMENTARY ANALYSIS – CONGESTION WITHIN USE CASES

Issue for comment 7: Have you experienced spectrum denial when applying for point to point (900 MHz STL) licences? Are there other areas/bands/use cases where you have experienced denial to help us validate our analysis?

3.5.1 The SSWG has no specific comments in relation to this issue.

Issue for comment 8: Is there an economic justification for STLs to be taxed differently compared to other point-to-point licences (especially in the 845 MHz to 849 MHz range)? Can you provide reason why we may want to continue taxing STLs at a lower rate of tax than other fixed services?

3.5.2 The SSWG has no specific comments in relation to this issue.

Issue for comment 9: Do you have any other feedback on the congestion analysis?

3.5.3 The SSWG has no specific comments in relation to this issue.

3.6 PROPOSED PRICING REFORMS

Issue for comment 10: Given the congestion analysis presented in the previous section, do you consider the proposed price changes appropriate?

3.6.1 The SSWG has no specific comments in relation to this issue.

3.7 AUSTRALIA-WIDE DENSITY AREA – POTENTIAL PRICING APPROACH

Issue for comment 11: Is our local revenue benchmark approach a reasonable way to estimate opportunity cost and set Australia-wide prices? Do you have any other feedback on the potential Australia-wide pricing approach?

3.7.1 Due to their orbital altitudes, antenna beamwidth and pointing characteristics of satellites, their ground coverage area typically exceeds other forms of radiocommunications. Thus, the consideration of changes to Australia-wide density apparatus licensing arrangements is of particular interest to the satellite community. The SSWG therefore will be very keen to participate in ACMA's future proposals to consider pricing of Australia-wide density apparatus licences.

3.8 NEXT STEPS

Issue for comment 12: Do you have any views on the proposed approach to implementation, monitoring and future review of pricing in the 520 MHz to 5 GHz band? In particular, is the proposed monitoring period appropriate, and are there additional indicators the ACMA should consider?

3.8.1 The SSWG has no specific comments in relation to this issue.

Issue for comment 13: Do you have any other feedback on the pricing models and the reforms we are proposing?

3.8.2 The SSWG would like to thank ACMA for producing on the whole very readable and useful diagrams to improve the visualisation of the proposals in the paper but would encourage ACMA to improve the clarity of the multi-line charts such as are in Appendices B and C.

Ends

