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Viasat's response to the Draft Five-Year Spectrum Outlook 2026-31 and 2026-27 work program

Viasat Inc. (as "**Viasat**"), together with its subsidiaries, Viasat Australia Pty Ltd, and Inmarsat Leasing (Two) Limited, and Inmarsat Solutions BV (as "**Inmarsat**"), welcomes the opportunity to comment on the Australian Communications and Media Authority ("**ACMA"**) draft Five Year Spectrum Outlook ("**FYSO"**) 2026-31 and 2026-27 work program (the "**Consultation Paper**"). Viasat is pleased to provide comments, particularly on the Q/V bands, 1.5 GHz band, 2 GHz MSS band, higher-power 6 GHz band RLANs and the Spectrum Pricing Review in the 520 MHz to 5 GHz frequency band.

Viasat looks forward to engaging with the ACMA in more detail on these bands and other issues in the coming months, as the ACMA initiates consultations.

General comments

Viasat launched ViaSat-3 F3 (VS-3 F3) in April 2026 as part of its multi-orbit strategy.[1] This latest-generation Ultra High Throughput satellite (1 Tbps) will further expand Viasat's Ka-band satellite network in the Asia-Pacific region, with gateways located in Australia. Viasat is also planning additional Ka-band satellites, Global Xpress (**GX**) 8, and an additional L-band satellite, Inmarsat-8 (**I-8**), and is exploring the use of existing gateway sites for communication with these satellites. These satellites are planned to be launched in the 2027 – 2028 timeframe and will enable the provisioning of enhanced satellite broadband services to Australian citizens and businesses, supporting connectivity across land, sea and air.

The L-band satellite data service caters for 'highly portable' needs for remote areas of Australia. It is also used for disaster recovery and support operations where Defence, Federal, State and Local

[1] ViaSat-3 F3 launch: https://www.viasat.com/news/latest-news/corporate/2026/viasat-confirms-successful-launch-and-initial-signal-acquisition/

Government's assist remote and regional communities. L-band satellite terminals continue to be used onboard Australian and foreign registered vessels, bringing constant all-weather data connectivity at sea, and for the Global Maritime Distress and Safety System ("**GMDSS**") providing Safety Of Life At Sea ("**SOLAS**") services. Similarly, L-band satellite terminals are also used onboard aircraft, for safety communications and clearances with Air Traffic Control. In addition, these terminals support real-time information relating to flight progress, up-to-date weather information and information on engine and aircraft performance for operational purposes. Viasat provides L-band aeronautical safety services to Australian commercial airlines such as Qantas, Virgin Australia, and Jetstar, as well as the majority of international flights on major airlines landing in and departing from Australia. In addition, numerous government and private/corporate aircraft use the L-band aeronautical safety service, such as the Royal Flying Doctor Service of Australia, LifeFlight (Australia), and the Royal Australian Air Force.

Viasat's Government Global Xpress (**2GX**) service also provides government customers with a global, on-demand network with multi-megabit communication capabilities for use on land, at sea, and in the air. 2GX also supports the New South Wales Fire and Emergency Services and State Emergency Services in Australia using the L-band and Ka-band networks. For these applications, Viasat has provided thousands of L-band terminals over recent years and expects the rising demand to continue into the future. Viasat likewise expects an increased uptake of Ka-band terminals as network capacity increases. Similar programs take place in other parts of Australia such as Queensland, South Australia, Western Australia, Tasmania and the Northern Territory, for emergency communication during natural disasters.

In August 2025, Viasat was awarded a second contract by Geoscience Australia (**GA**) and Toitū Te Whenua Land Information New Zealand (LINZ) to deliver additional L-band satellite services for the region's world-class Southern Positioning Augmentation Network (SouthPAN)[2].

Considering the above, Viasat is of the view that the ACMA's sole focus on Low Earth Orbit (**LEO**) satellite offerings in its Draft Outlook does not fully reflect the investment trends of Australian stakeholders (government and commercial), which include GSO and Multi-Orbit systems. Furthermore, Viasat maintains that the Geostationary Orbit (**GSO**) satellite infrastructure continues to play a critical role for national resilience: providing high-capacity, reliable, and cost-effective broadband, particularly when integrated into a multi-orbit strategy.

Issue of concern No 1: MSS Services and Interference Protection

Mobile Satellite Service (**MSS**) interference protection criteria have been established by the ITU to prevent harmful interference, primarily by protecting the signal-to-noise ratio of satellite receivers. Therefore, direct connectivity between MSS and International Mobile Telecommunications (**IMT**) user equipment (DC-MSS-IMT) must prioritise the protection of the incumbent MSS infrastructure (in-band and adjacent), and DC-MSS-IMT systems must not impose new constraints on existing satellite systems or reduce established ITU MSS interference protection criteria[3].

[2] SouthPAN is a collaborative satellite-based augmentation system developed jointly by Australia and New Zealand and provides precise positioning and navigation services to support a number of sectors, including aviation, maritime, agriculture, surveying and emergency response.

[3] Protection criteria for GSO/NGSO MSS systems involve balancing single-entry and aggregate interference to protect

DC-MSS-IMT systems operating in the L-band and S-band must not cause harmful interference to, or claim protection from, existing MSS satellite services in co-channel or adjacent frequency bands.

Issue of concern No 2: Specific comments on the bands covered by the draft FYSO 2026-31 and 2026–27 annual work program

Q/V bands (40 GHz (37–43.5 GHz), 46 GHz (45.5–47 GHz) and 47 GHz (47.2–48.2 GHz))

Viasat thanks ACMA for implementing an interim licensing process[4] for satellite gateways in the following Q/V-bands, addressing ongoing requirements to use these frequencies for satellite gateways communicating with the planned Viasat GX-8 satellite.

- 40 GHz (37 – 43.5 GHz (space-to-Earth)).
- 47 GHz (47.2 – 48.2 GHz (Earth-to-space)).

As indicated in previous FYSO consultations[5], the GX-8 satellite is planned to cover the Asia Pacific region with full coverage of Australia, and will operate its feeder links in the Q-band (37.5– 43.5 GHz) and V- band (47.2 – 50.2 GHz and 50.4 – 52.4 GHz) in addition to Ka-band (17.7 – 20.2 GHz and 27.5 – 30.0 GHz) for user links.

Viasat plans to use existing earth station sites at Mingenew/Dongara, WA, Merredin, WA, and Alice Springs, NT for gateway earth station operations in these bands, with Perth/Landsdale, WA remaining our preferred gateway earth station site for our planned GX-8 satellite. Given the significant investment and operational requirements, Viasat seeks long-term regulatory certainty for Q/V-band and therefore urges the ACMA to treat gateway earth stations operating in the frequency bands 37.5 – 43.5 GHz and 47.2 – 48.2 GHz as incumbents for replanning purposes, rather than subjecting them to a two-year short-term, non-renewable licensing arrangement.

The frequency bands 37 – 43.5 GHz and 47.2 - 48.2 GHz are covered under the ACMA Spectrum Embargo 49, which supports the development of earth stations and provides interference protection within the Mingenew Earth Station Protection Zone (**ESPZ**). In light of the long-term investment and operational requirements associated with earth stations, Viasat urges the ACMA to extend equivalent protection to the planned Merredin and Alice Springs earth stations operating in these frequency bands.

While Viasat has firm plans to use these Q/V bands in Australia for satellite feeder links, uptake of the 26 GHz mmWave bands for 5G mobile services has been limited, despite deployments in major cities since 2021. Major mobile handset manufacturers have shown little interest in releasing mmWave-capable devices in the Australian market, citing limited coverage and potential cost

incumbent services, using metrics like equivalent power-flux density (EPFD), C/N degradation and I/N limits.

4 ACMA Spectrum Embargo 80, Attachment 2.

5 Draft FYSO 2023-28, FYSO 2024-29 and FYSO 2025-30. Satellite name change from GX-7 to GX-8.

increases as reasons for their lack of enthusiasm[6]. In light of this, it is unlikely that the even higher frequency Q/V bands will attract demand for mobile services in the foreseeable future.

Recommendation:

Noting that the ACMA does not intend to undertake a full review of these frequency bands, but is open to considering amendments to the interim arrangements currently recorded in Embargo 80 to provide greater certainty for gateway earth stations, Viasat recommends that the protection currently applied at Mingenew, WA, be extended to earth stations at Merredin, WA and Alice Springs, NT.

Viasat also recommends that the ACMA commence work to establish appropriate long-term arrangements for operation of gateway earth stations in geographic areas outside of the 26 GHz band spectrum re-allocation declaration and inside those areas (*e.g.*, Landsdale/Perth, WA), as outlined in the Embargo 80[7].

The technical conditions should be developed in coordination with other primary services, including existing point-to-point fixed link services in the frequency band 37.5 – 39.5 GHz, as well as potential future International Mobile Telecommunication (**IMT**) services identified in the Q/V bands.

1.5 GHz (1427–1535 MHz)

Viasat understands that the ACMA intends to consult on options for use of the frequency range 1427 – 1535 MHz in Q3 2026, following the 2023 decision to permit MSS operations in the frequency bands 1518 – 1525 MHz and 1668 – 1675 MHz. Consistent with Viasat's previous submission[8], we do not support permitting terrestrial IMT or other high-power terrestrial operations in the 1518 – 1535 MHz frequency band, as this range overlaps with Australia's extended and standard MSS allocations (1518 – 1525 MHz and 1525 – 1544 MHz, respectively).

ITU adopted a new IMT identification in the 1427 – 1518 MHz band. Resolution 223 **(WRC-15)** recognised the importance of Mobile Satellite Service (MSS) operations in the extended L-band, noting the need to ensure the continued operations of the (**MSS**) in the frequency band 1518 – 1525 MHz. Viasat's global L-band satellite network relies on the frequency bands 1626.5 – 1660.5 MHz and 1668 – 1675 MHz (Earth-to-space) / 1518 – 1559 MHz (space-to-Earth) to provide a range of services, including critical safety and day-to-day functions, to users across Australia.

The viability of Viasat's existing and future MSS offerings is contingent on continued, reliable access to the L-band. Preserving the use of the 1518–1525 MHz band for MSS is therefore essential to support the growing speed and capacity requirements of new applications from military uses and other key sectors, including transportation, energy, and agriculture.

As highlighted earlier, Viasat provides aeronautical safety services to both Australian commercial airlines, government aircraft, and private aircraft using the L-band satellite networks. Viasat L-band terminals are integrated into aircraft to deliver voice and data communications to the aircraft cockpit, aircraft systems,

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6 https://www.whistleout.com.au/MobilePhones/News/Is-mmWave-5G-dud-Australia (accessed 30 Mar 2026).

7 ACMA Spectrum Embargo 80, Attachment 2 references the spectrum areas covered in the Radiocommunications (Spectrum Re-allocation—26 GHz Band) Declaration 2019.

8 Viasat Australia Pty, *Viasat responses to the Five-Year Spectrum Outlook 2024-29 and 2024-25 work program*, (filed 6 May 2024).

and in some cases, communications to the passenger cabin. Critically, these terminals provide real-time safety information about routing clearances, flight progress, weather, and engine and aircraft performance. The terminals must be tested before leaving the gate and may be operated on the ground, at low altitudes and cruising altitudes. Both air traffic control and airline operational communications use Inmarsat's L-band satellite network for safer and cost-effective communications, improving the communications between aircraft and their airline operations centres and as mandated by the International Civil Aviation Organisation ("**ICAO**") for Aeronautical Mobile-Satellite (Route) Service ("**AMS(R)S**").

Inmarsat also provides GMDSS to Australian-registered vessels and foreign vessels within Australian waters using Inmarsat's global L-band network. Inmarsat-C and Inmarsat Fleet Safety terminals are approved by the International Maritime Organisation ("**IMO**") for meeting GMDSS requirements and, consequently, are mandatory carriage on many vessels, including foreign- flagged vessels which operate in Australian ports and waters. Inmarsat also provides other communications services to the maritime industry in Australia, including merchant, offshore, and fishing sectors, using Inmarsat-C and FleetBroadband ("**FBB**") terminals, operating on Inmarsat-4 and Inmarsat-6-F1 satellites. There are currently a number of terminals active on Australian-registered vessels. Moreover, Australia is a major maritime service provider, through the Australian Maritime Safety Authority, for broadcasting IMO GMDSS Maritime Safety Information ("**MSI**") via the Inmarsat Enhanced Group Calling ("**EGC**") system, warning all mariners of dangers to navigation and piracy within their certified NAVAREA and METAREA.[9]

Commercial and safety services operating in the 1518–1535 MHz frequency band for land, air, and sea operations, including GMDSS and AMS(R)S, would experience service disruptions and degraded signals if terrestrial services were permitted to operate in the band.

In addition to these uses, Viasat's land-based terminals have enabled real-time, secure, on-the-go communications to government and industry users across Australia. These services are especially important for customers who operate in rural, unserved, or underserved areas without traditional terrestrial network infrastructure. Moreover, Viasat is actively deploying new L-band MSS offerings, including non-terrestrial network direct-to-mobile (**DTM**), narrowband internet of things (NB-**IoT**), and unmanned aerial vehicle (**UAV)** services to bring additional on-the-go connectivity to industrial and mass-consumer devices across the country.

Recommendation:

Inmarsat holds apparatus licences for Australia-wide operation in Australia's extended and standard MSS bands, including the frequency band 1518 – 1535 MHz, and any review of the broader frequency range 1427 – 1535 MHz for terrestrial services would impact to our existing and future services in Australia. Therefore, to preserve the extended L-band for existing and future MSS operations, Viasat respectfully urges the ACMA to refrain from using the 1518–1535 MHz frequency band for terrestrial mobile services. Furthermore, the use of the 1492–1518 MHz frequency band by terrestrial services introduces issues regarding adjacent-band compatibility with respect to MSS operations. IMT operations in the 1449 – 1518 MHz band will cause harmful interference to L-band MSS terminals operating in the adjacent 1518 – 1559 MHz band and will require carefully planned compatibility measures, including, but not limited to, a guard band below 1518 MHz.

[9] https://www.amsa.gov.au/safety-navigation/navigation-systems/maritime-safety-information

2 GHz (1920–1980 MHz and 2110–2170 MHz) outside of spectrum-licensed areas

As detailed in the section below, Viasat plans to use the 1980–2010 MHz (Earth-to-space) paired with 2170 – 2200 MHz (space-to-Earth) to provide DC-MSS-IMT services and NB-IoT in addition to the current use of MSS spectrum in Australia. Viasat notes that the ACMA is planning to consult on revised planning options for the 2 GHz (1920 – 1980 MHz and 2110 – 2170 MHz) band in Q3 2026, and Viasat encourages the ACMA to take into account the management of potential out-of-band interference to the current and future MSS operations, i.e. MSS satellite receiver stations and Earth receiver stations in the adjacent bands.

2 GHz MSS (1980–2010 MHz and 2170–2200 MHz)

Viasat notes that the ACMA has decided to re-plan the 2 GHz for MSS, with:

- 2 × 25 MHz (1980 – 2005 MHz paired with 2170 – 2195 MHz) for Australia-wide Mobile-Satellite Services (MSS), with support for deployment of satellite direct-to-mobile (DTM) services and complementary ground component (CGC), including direct air-to-ground communications services (DA2GC).
- 2 × 5 MHz (2005 – 2010 MHz paired with 2195 – 2200 MHz) dedicated for satellite IoT and similar narrowband services to be used on a shared basis between operators.

Viasat supports the ACMA decision to proceed with licensing the 1980 – 2010 / 2170 – 2200 MHz bands (S-band) so that Viasat and other MSS operators can provide important and innovative MSS infrastructure for the provision of services to all Australians.

Viasat is collaborating with Space42 to use S-band (and L-band) in a multi-orbit infrastructure to offer MSS DTM services globally[10]. These MSS allocations (*i.e.*, 3GPP band class n256 comprising 1980 – 2010 and 2170 – 2200 MHz and 3GPP band class n255 comprising 1626.5 – 1660.5 and 1525 – 1559 MHz) are already included in the 3GPP NTN framework, and the eco-system is being created, so that no additional regulatory action is needed to access these existing MSS allocations. Today, these MSS DTM services are available in markets worldwide.

Viasat encourages the ACMA to further consider the allocation methods for S-band MSS spectrum. It is important that the ACMA consider licensing methods other than price-based allocation (*e.g.*, auctions). Auctions for satellite spectrum do not make economic or practical sense.

For economies of scale, it is vital for MSS operators seeking to deliver ubiquitous services at an affordable price point to obtain allocations in many administrations globally. The complexities associated with operating across multiple, disparate licensing regimes are costly for businesses, but auctions bring about another level of uncertainty, and thus cost, to the global licensing model. In

[10] https://www.viasat.com/news/latest-news/corporate/2025/space42-and-viasat-announce-partnership-to-explore-shared-global/.

situations where the government prioritises digital inclusivity, particularly for Australia's most remote and thus geographically disadvantaged people, auctioning spectrum may result in services becoming too expensive for these potential consumers, or worse, unavailable. Auctions may be economically efficient for terrestrial services where there is high demand for spectrum in highly populated areas, and operators have the flexibility to use different blocks. However, auctions are not suitable for use in sparsely populated parts of the country or when global allocations are needed.

Instead, the ACMA should adopt a licensing approach that ensures the licensee has the capabilities to build out its network, including economically. The first step is for the ACMA to consider a flexible approach to the S-band that would allow MSS providers to offer the services in Australia that they offer in other countries, to achieve economies of scale. A second step would be to adopt a reasonable licensing fee that accounts for the social value of serving unserved populations.

Viasat refers the ACMA to Viasat's response to the '*ACMA Consultation on Allocation Design and Technical Matters for the 2GHz MSS Band*' (dated 20 August 2025) for more information. Viasat is keen to work with the ACMA as it undertakes further consultation on allocation, licensing, and technical design matters during Q2 2026.

Recommendation:

Viasat encourages the ACMA not to adopt a price-based allocation via the auction method for licensing the use of the S-band MSS spectrum, as this is not suitable for sparsely populated parts of the country or for globally coordinated spectrum allocations at the ITU level.

In relation to space regulatory matters, Viasat recommends that, in order to participate in a spectrum replanning process, prospective licensees must have their ITU frequency assignments for the 2 GHz MSS band published by the ITU as being in conformity with the Radio Regulations and must not identify their use under No. **4.4** of the Radio Regulations.

Consideration of the higher-power 6 GHz band RLAN

Viasat notes ACMA's plan during 2026-27 to monitor international developments in Automated Frequency Coordination (**AFC**) technologies and other potential approaches that may facilitate spectrum-sharing between higher-power RLAN devices and other uses in the frequency range 5925 – 6585 MHz.

Viasat could support standard power RLAN with AFC operating outdoors in the lower 6 GHz band (5925 – 6425 MHz) with conditions, as per the recommendations in Section 3.4 of the '*ATA SSWG submission on AFC-assisted spectrum sharing in the 6 GHz band*'[11]. This would provide 500 MHz of RLAN bandwidth for this application. Noteworthy if the fact that this demarcation is consistent with Ofcom's recent decision[12] for RLANs in this frequency range.

[11] https://www.austelco.org.au/wp-content/uploads/2026/02/ATA-SSWG-Submission---ACMAs-consultation-on-AFC-assisted-spectrum-sharing-in-the-6-GHz-band.pdf.

[12] Ofcom's consultation: Expanding access to the 6 GHz band for commercial mobile and Wi-Fi services - Next steps for Wi-Fi.

Viasat proposes that RLAN operation in the frequency band 6425 – 6585 MHz remain limited to low- and very-low-power (**LPI/VLP**) use for both indoor and outdoor applications, in accordance with the current Low Interference Protection Device (**LIPD**) Class Licence 2025. This would support expanded access to RLAN channels, making them available to universities, hospitals, schools, conference centres, TAFE colleges, enterprise-level deployments, mines, remote communities, and large agricultural businesses. Subject to appropriate operational conditions to protect satellite services and effective compliance and enforcement by the ACMA to rectify interference should it occur, Viasat considers that RLAN operation on a No Interference / No Protection basis would also support the future development of satellite services in the band.

However, introduction of standard power RLAN for outdoor use in the 6425 – 6585 MHz frequency band, even with the use of AFC, poses a significant risk of harmful interference to existing MSS gateway earth stations which are used for L-band MSS, including existing safety-of-life services as well as NTN D2M and NB-IoT, and UAV.

As discussed above, Viasat plans to launch a new I-8 satellite in 2027 to provide crucial safety services and support advances in navigation, including throughout Australia. The I-8 satellite will provide an additional layer of resilience to complement the existing L-band satellite constellation in the Asia-Pacific region, including Australia.

Viasat notes that GSO satellite receivers, like those on the soon to be deployed I-8, have a field of view and receive signals from one-third of the Earth's surface. As a result, an AFC system designed for deployment solely within Australia may not adequately account for aggregate interference from large numbers of standard-power outdoor devices operating across the satellite's full field of view. Therefore, Viasat recommends that any authorization of RLAN AFC should prohibit the operation of standard-power RLANs for outdoor use in the 6425 – 6575 MHz frequency range.

Spectrum Pricing Review implementation - 520 MHz to 5 GHz

Viasat notes ACMA's plan to commence a consultation on the 520 MHz to 5 GHz band to review the spectrum pricing in Q2 2026. Viasat notes that the ACMA's apparatus licence taxes on Space and Earth station licences (both transmit and receive) in this frequency range are significantly higher than those in other jurisdictions.

Viasat reminds the ACMA of the research conducted by Plum Consulting in 2016 to compare international licensing fees[13]. ACMA subsequently reviewed taxation arrangements for satellite services and compared Plum's findings with the 2020 Australia earth licence fees by population density area and across three common FSS frequency bands (C, Ku, and Ka).[14] It was evident that Australia had significantly higher fees than all of the other countries surveyed. While the 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 bands below 5 GHz now need to be addressed. Viasat also refers the ACMA to the ATA SSWG's submission on Radiocommunications pricing

[13] Review of licence fees in the Australian 17.3-51.4 GHz band - Plum Consulting.

[14] *See* Attachment E to ACMA, IFC 19-2016, *Review of Taxation Arrangements for Satellite Services* Consultation Paper (Aug. 2016).

consultation paper – '*2.69 GHz to 5 GHz band pricing review, and proposed 2026 updates to apparatus licence taxes*'[15].

Viasat appreciates the opportunity to present these issues for ACMA's consideration in finalising their FYSO 2026-31 and Work Plan for 2026-27.

Sincerely,

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