To:
Manager, Spectrum Licensing Policy
Australian Communications and Media Authority
PO Box 13112 Law Courts
Melbourne VIC 8010

Comments of AST & Science, LLC on the Five-Year Spectrum Outlook (FYSO) 2026

Executive Summary

AST & Science, LLC (AST SpaceMobile) welcomes the opportunity to contribute to the development of the *Five-Year Spectrum Outlook 2026-31* (*FYSO*) in relation to the 2 GHz Mobile-Satellite Service (MSS) bands (1980-2010 MHz and 2170-2200 MHz). AST SpaceMobile is manufacturing, deploying, and operating a space-based mobile broadband network that is providing services directly to standard, unmodified mobile handsets. To date, AST SpaceMobile has agreements with over 50 MNOs to provide our services globally.

This capability is no longer conceptual. AST SpaceMobile has demonstrated, among other accomplishments the world's first two-way voice call from space to a standard smartphone, and 4G and 5G connectivity from space, including video streaming and more. These and other milestones demonstrate that broadband direct-to-device (D2D) services are, and will, drive near-term demand for spectrum in the 2 GHz bands.

The 2 GHz MSS spectrum represents a critical national resource that can deliver substantial public benefit, particularly through:

- improved connectivity in regional and remote Australia;
- enhanced resilience of communications infrastructure during disasters; and
- meaningful contributions to digital inclusion objectives, including *Closing the Gap – Target 17*.

To maximise these outcomes, AST SpaceMobile recommends that ACMA adopt a spectrum framework that is technology-neutral, competition-oriented, and focused on efficient use of spectrum.
AST SpaceMobile submits that:

1. **Spectrum allocation should support at least two MSS operators:**

   A multi-operator framework (for example, allocations of 2×10 MHz and 2×15 MHz) will:

   - promote competition and innovation;
   - provide MNOs with choice and flexibility; and
   - enhance resilience through infrastructure diversity.

A single-operator outcome would risk reduced competition, limited innovation, and increased dependency on a single provider.

2. **Allocation decisions should be based on merit and public interest**

   Ownership of international filing positions (such as the SIRION filing) should carry no weight in Australian allocation decisions. Spectrum should be assigned based on:

   - demonstrated technical capability;
   - readiness to deliver services; and
   - ability to generate measurable public benefit.

3. **Full use of the band should be enabled**

   The proposed reservation of 2 × 5 MHz for low-power, low-data-rate applications is not required to protect Television Outside Broadcast (TVOB) services and would result in inefficient use of spectrum. Coexistence can be achieved through targeted technical measures, including PFD limits, beamforming, geofencing, and coordination.

4. **Spectrum policy should support national connectivity objectives**

   Enabling MSS use in the 2 GHz bands will directly support:

   - universal service and connectivity outcomes;
   - improved access to essential services in remote areas; and
   - progress toward Closing the Gap digital inclusion targets.

Conclusion

AST submits that ACMA should adopt a framework that:

- enables two MSS operators;
- maximises usable bandwidth by avoiding overly conservative sharing assumptions; and
- allocates spectrum based on demonstrated capability and public interest outcomes.

This approach will ensure that the 2 GHz MSS bands deliver the greatest long-term benefit to Australia.

1. Introduction

AST SpaceMobile (AST SpaceMobile) is developing a non-geostationary satellite system (NGSO) operating in low Earth orbit (LEO) to provide direct-to-device (D2D) mobile broadband connectivity using standard, unmodified cellular handsets. The system is designed to interoperate with terrestrial mobile network operators (MNOs), enabling the extension of existing mobile services into areas where terrestrial coverage is unavailable or limited.

This submission relates to the use of the 2 GHz Mobile-Satellite Service (MSS) frequency bands, consistent with the allocations defined under the Radio Regulations of the International Telecommunication Union (ITU), including (but not limited to) the bands 1980–2010 MHz (Earth-to-space) and 2170–2200 MHz (space-to-Earth). AST's proposed system is designed to operate within these allocations in a manner that is compatible with existing MSS systems and coordinated with terrestrial mobile services where spectrum is shared or adjacent.

AST SpaceMobile's system architecture employs large-aperture phased array satellites with advanced beamforming capabilities to enable direct connectivity to user equipment compliant with 3GPP cellular standards. The system is intended to function as a complementary extension to terrestrial networks, operating in partnership with licensed Australian MNOs and utilising their assigned spectrum under appropriate commercial and regulatory arrangements.

The services to be provided include broadband, voice and other data connectivity, delivered directly to standard mobile devices without the need for specialised satellite terminals. These services are expected to support a range of applications, including:

- provision of coverage in rural and remote areas of Australia;
- continuity of service during natural disasters and network outages;
- maritime and aeronautical connectivity within Australia's jurisdiction; and
- support for emergency communications and public safety applications.

AST SpaceMobile recognises the importance of ensuring that its operations in the 2 GHz MSS bands do not cause harmful interference to incumbent services and are consistent with Australian spectrum management frameworks administered by the Australian Communications and Media Authority (ACMA). The system is designed to comply with applicable technical limits, coordination requirements, and international obligations, including those relating to interference management, power flux-density (PFD) constraints, and cross-border coordination.

In particular, AST SpaceMobile will:

- operate within the relevant MSS allocations and licensing conditions;
- coordinate with existing MSS operators and affected terrestrial licensees as required;
- implement appropriate interference mitigation techniques, including dynamic beam control and power management; and
- comply with applicable provisions of the ITU Radio Regulations and Australian regulatory instruments.

Through the deployment of its system, AST SpaceMobile aims to enhance connectivity outcomes across Australia, particularly in underserved and remote regions, while maintaining full compliance with national and international regulatory requirements.

2. Contribution to Australia's Universal Service and Connectivity Objectives

AST SpaceMobile's D2D satellite system will make a meaningful contribution to Australia's universal service objectives, including the provision of equitable, reliable, and resilient communications services to all Australians, regardless of geographic location.

Australia's telecommunications policy framework has long recognised the challenges associated with delivering ubiquitous coverage across a large landmass with highly dispersed populations. While terrestrial mobile networks provide extensive coverage, there remain significant geographic areas—particularly in remote and regional Australia, offshore maritime zones, and certain inland corridors—where coverage is intermittent or unavailable. AST SpaceMobile's system is specifically designed to address these coverage gaps by extending existing MNO services beyond the reach of terrestrial infrastructure.

2.1 Extension of Coverage to Underserved Areas

AST SpaceMobile's system will enable participating Australian MNOs to provide broadband, voice, SMS, and other data services in areas that are currently unserved or underserved. By leveraging existing spectrum holdings and standard mobile devices, the system removes the need for specialised user equipment, thereby lowering barriers to access and supporting broader service uptake.
This capability is particularly relevant to:

- remote communities and Indigenous populations;
- transport corridors (including highways, rail, and aviation routes);
- agricultural and mining operations; and
- Australia's extensive maritime zones.

2.2 Enhancement of Service Resilience and Emergency Communications

AST SpaceMobile's space-based architecture provides an additional, independent layer of communications capability that can operate when terrestrial networks are disrupted. This is of particular importance in the Australian context, where natural disasters such as bushfires, cyclones, and floods, can significantly impact ground-based infrastructure.
The system can support:

- continuity communications (voice, broadband and other data services) during network outages;
- improved access to emergency services in remote or disaster-affected areas; and
- enhanced situational awareness for emergency responders and government agencies.

These capabilities align with national resilience objectives and complement existing emergency communication frameworks.

2.3 Support for Universal Access and Affordability Objectives

AST SpaceMobile' s model of partnering with licensed MNOs enables services to be delivered as an extension of existing mobile offerings, rather than through standalone satellite subscriptions. This approach supports affordability and accessibility by allowing end users to access satellite coverage using standard mobile plans and devices, subject to commercial arrangements.

By integrating with terrestrial networks, AST contributes to a more seamless user experience and supports policy objectives aimed at reducing the digital divide between metropolitan and regional Australia.

2.4 Efficient Use of Spectrum and Infrastructure

AST's system is designed to operate within existing MSS allocations and in coordination with terrestrial services, ensuring efficient use of scarce spectrum resources. By complementing rather than duplicating terrestrial infrastructure, the system supports a layered network architecture that maximises overall coverage and service availability.

2.5 Alignment with National Policy Objectives

AST SpaceMobile's proposed operations are consistent with the objectives of the ACMA and broader Australian Government policy settings aimed at:

- promoting universal and equitable access to communications services;
- encouraging efficient spectrum use;
- fostering innovation and investment in telecommunications infrastructure; and
- improving the resilience and reliability of national communications networks.

3. Contribution to Closing the Gap – Target 17 (Digital Inclusion)

AST SpaceMobile recognises the objectives of the *National Agreement on Closing the Gap*, and particularly Target 17, which seeks to achieve parity in digital inclusion for Aboriginal and Torres Strait Islander people by 2026. AST submits that the timely allocation of MSS spectrum in the 2 GHz bands will facilitate a practical and scalable contribution to these objectives.

3.1 Spectrum Policy as an Enabler of Digital Inclusion

The *FYSO* framework recognises that spectrum planning decisions play a critical role in enabling public interest outcomes, including improved connectivity in regional and remote Australia. In this context, the 2 GHz MSS bands represent a key opportunity to support complementary, non-terrestrial solutions that can address persistent coverage gaps.

AST SpaceMobile's proposed system utilises these MSS allocations to extend mobile connectivity directly to standard devices, providing a spectrum-efficient mechanism to improve service availability without requiring extensive new terrestrial infrastructure. Recognition of this capability within the allocation framework supports a technology-neutral approach to achieving national connectivity objectives.

3.2 Extending Coverage to Remote and Very Remote Indigenous Communities

A significant proportion of Aboriginal and Torres Strait Islander populations reside in areas where terrestrial mobile coverage remains limited or unavailable. This is a primary driver of digital exclusion and a key challenge identified under Target 17.

AST SpaceMobile's LEO-based direct-to-device capability can:

- provide coverage across large geographic areas currently outside of terrestrial network reach;
- improve service availability in fringe coverage zones; and

- deliver voice, broadband other data services to very remote locations.

By leveraging existing MNO spectrum and devices, AST SpaceMobile enables rapid extension of coverage, directly supporting improved digital inclusion outcomes in underserved communities.

3.3 Supporting Access to Essential Services and Government Priorities

Improved connectivity is fundamental to enabling access to essential services, including healthcare, education, and government services. AST's system can support:

- telehealth and remote medical services in isolated communities;
- participation in online education and training;
- access to digital government platforms; and
- broader participation in the digital economy.

These outcomes align with both Target 17 and broader Australian Government priorities relating to regional connectivity and service equity.

3.4 Enhancing Resilience and Public Safety Outcomes

The *FYSO* process also considers the role of spectrum in supporting resilient communications infrastructure. Remote communities, including many Indigenous communities, are particularly vulnerable to disruptions caused by natural disasters.

AST SpaceMobile's satellite-based system provides:

- an independent communications layer that is not reliant on terrestrial infrastructure;
- continuity of voice and messaging services during outages; and
- improved access to emergency communications in remote areas.

This resilience capability enhances public safety outcomes and complements terrestrial network investments.

3.5 Efficient and Complementary Use of the 2 GHz MSS Bands

AST SpaceMobile's proposed use of the 2 GHz MSS spectrum is consistent with the objective of maximising the efficient use of spectrum resources. The system:

- operates within established MSS allocations;
- complements, rather than competes with, terrestrial IMT services; and
- enables reuse of spectrum through advanced beamforming and dynamic resource management.

By supporting both terrestrial and non-terrestrial use cases, the 2 GHz MSS bands can deliver greater overall public benefit.

3.6 Reducing Barriers to Digital Inclusion

AST SpaceMobile's space-based D2D mobile broadband services addresses key barriers to digital inclusion identified in policy frameworks, including affordability and accessibility. By enabling connectivity on standard mobile devices and through existing service providers, the system:

- eliminates the need for specialised user equipment;
- supports delivery through existing mobile service offerings; and
- reduces cost and complexity for end users in remote areas.

This approach supports higher levels of adoption and sustained use of digital services.

3.7 Contribution to Measurable Outcomes under Target 17

AST SpaceMobile submits that expanding mobile coverage is a foundational enabler of digital inclusion metrics, including access, affordability, and digital engagement. By increasing the geographic reach of mobile services, particularly in remote and very remote regions, AST SpaceMobile's system can contribute to measurable improvements in Target 17 outcomes.

In particular, the proposed capability supports:

- increased availability of reliable connectivity in Indigenous communities;
- reduced disparity between metropolitan and remote service levels; and
- improved participation in digital services and economic opportunities.

4. Operational Maturity and Readiness of Direct-to-Device MSS Systems

AST SpaceMobile submits that its system represents a mature and progressing implementation of D2D MSS, with demonstrated on-orbit capability and commercial integration with MNOs. This level of readiness distinguishes AST's approach from other emerging non-terrestrial network (NTN) systems that remain in testing or early validation phases.

4.1 Demonstrated Direct-to-Device Capability

AST SpaceMobile has successfully demonstrated direct connectivity between Low Earth Orbit (LEO) satellites and standard, unmodified mobile handsets using terrestrial cellular spectrum. Key milestones include:

- **April 2023:** Announcement of the world's first two-way voice call directly between a standard smartphone and a satellite,using the BlueWalker 3 test satellite.
- **June 2023:** Successful demonstration of 4G/LTE data connectivity from space to an unmodified handset.
- **September 2023:** Demonstration of the first 5G video call via satellite at a data rate of 21 Mbps, confirming compatibility with evolving cellular standards.
- **End of 2023–2024:** Ongoing validation of SMS, voice, and broadband data services across multiple partner MNO networks, including AT&T.

- **January 2025:** In partnership with Vodafone, AST completes the first satellite video call between standard mobile devices in Europe.
- **February 2025:** Full integration with commercial devices demonstrated throught voice and video calls with partners AT&T and Verizon via BlueBird 1-5.
- **April 2025:** Publicly broadcasted a live video call with Rakuten Mobile in Japan using unmodified smartphones.
- **June 2025:** First direct-to-device demonstration with Fairwinds Technologies to show tactical satellite communications feasibility for military defence applications
- **July 2025:** First VoLTE calls and SMS to unmodified smartphones with AT&T and Verizon core networks via BlueBird 1-5.
- **October 2025:** Successful demonstration of the first D2D broadband connections in Canada with strategic Partner Bell.

These demonstrations confirm the technical feasibility of AST's architecture using standard consumer devices, without the need for specialised satellite terminals.

4.2 On-Orbit Validation and Deployment Progression

AST SpaceMobile's development program has progressed through multiple on-orbit validation stages:

- **September 2022**: Launch of the BlueWalker 3 satellite, a large-aperture LEO test platform designed to validate direct-to-device communications.
- **2022–2024**: Continuous in-orbit testing of phased array performance, beamforming, and link budgets under operational conditions.
- **September 2024 (planned/ongoing)**: Launch and deployment of BlueBird 1-5 commercial satellites; marking the beginning of scaling operational service capability.
- **December 2025:** Launch of our first next generation satellite, BlueBird 6. Becomes the largest commercial communications satellite ever deployed in LEO with its 2,400 square foot phased array.
- **April 2026:** Launch of our second next generation satellite, BlueBird7.
- **Rest of 2026:** It is expected that an accelerated launch campaign of 45-60 BB2 satellites will commence throughout the rest of the year, with hopes of orbital launches occurring every one to two months on average.
- **End of 2027:** Expectations are that there will be over 90 satellites deployed and AST will have continuous global coverage and expanded capacity to support MSS and D2D services.

These milestones demonstrate that AST SpaceMobile's system has moved beyond theoretical or laboratory validation and into sustained real-world operation.

4.3 Integration with Licensed Mobile Network Operators

AST SpaceMobile has established commercial agreements with several global MNOs to support integration of satellite capability into existing cellular networks. These partnerships enable:

- use of licensed terrestrial spectrum under operator control;
- seamless roaming between terrestrial and satellite coverage; and
- delivery of services through existing mobile network infrastructure enabling full compliance with national security and other local requirements.

This model reflects a commercially mature approach aligned with existing regulatory frameworks.

4.4 Relevance to FYSO Spectrum Planning

From a spectrum planning perspective, AST SpaceMobile's demonstrated milestones indicate that D2D MSS services are no longer conceptual but are entering early commercial deployment phases. This has several implications for the *FYSO*:

- demand for MSS spectrum to support D2D services is immediate and growing;
- early regulatory certainty will enable timely deployment and maximise public benefit; and
- support for MSS use in the 2 GHz bands will facilitate near-term improvements in connectivity, particularly in regional and remote areas.

Therefore, the *FYSO* should recognise the advanced state of these systems and ensure that spectrum settings enable their deployment within Australia.

5. Acquisition of an ITU Filing Does Not Create an Entitlement to Australian 2 GHz MSS Spectrum

Acquisition by SpaceX/Starlink of assets associated with EchoStar's SIRION filing does not provide any basis for a claim that Australia should allocate the 2 GHz MSS spectrum to Starlink as a matter of right. Public reporting and EchoStar's own disclosures indicate that EchoStar entered into a transaction with SpaceX in September 2025 involving spectrum licences and associated foreign assets, and subsequent reporting linked the SIRION filing to that broader transaction. However, the existence or transfer of such an ITU-related asset is not determinative of domestic Australian spectrum licensing outcomes.

First, ACMA's own published position is explicit: an ITU filing does not confer a right to an Australian licence. ACMA states in its 2025 *Australian Satellite Filing Procedures* that "filing does not confer a right to licence," and further states that it does not consider a satellite filing to be an asset that can be traded. ACMA has reiterated the same position in its response to submissions on the review of satellite filing procedures, namely that obtaining a satellite filing does not confer a right to obtain a licence authorising use of radiofrequency spectrum in Australia. That is directly inconsistent with any argument that ownership or control of the SIRION filing should compel ACMA to allocate Australian spectrum to Starlink.

Second, Australian spectrum decisions are governed by the Radiocommunications Act 1992 and ACMA's public-interest spectrum management framework, not by private transactions in international filing positions. ACMA states that the object of the Act is to promote the long-term public interest derived from the use of spectrum, and that its decision-making is guided by criteria including efficiency, investment and innovation, and competition. Likewise, the *FYSO* is described by ACMA as the mechanism through which it sets priorities and work programs for spectrum management over the coming years. The relevant question for ACMA is therefore not who has purchased a filing, but which licensing settings will deliver the best public-interest outcome for Australia.

Third, ACMA's current 2 GHz MSS work program is directed to allocation design, technical parameters, licensing approach and related matters for the Australian bands 1980–2005 MHz and 2170–2195 MHz, with allocation timing and framework to be determined through ACMA's own consultation and *FYSO* processes. That process is inherently a domestic planning exercise. It is not structured as a mechanism for simply recognising whichever party happens to control an ITU filing of potential relevance. ACMA has also stated that it is working toward an allocation commencing in late 2026, again underscoring that the allocation outcome will be determined by Australian regulatory design rather than by foreign transactional history.

Fourth, at most, an ITU filing may be relevant as one prerequisite within the broader international coordination framework. ACMA's materials make clear that a filing, whether through Australia or another administration, is only part of the regulatory picture and does not by itself authorise operation in Australia. Domestic licensing, technical compatibility, interference management, and satisfaction of Australian allocation conditions remain separate requirements. Accordingly, even if Starlink now controls rights associated with the SIRION filing, that fact alone does not establish that Starlink is the highest-value, most efficient, or most appropriate assignee of Australian 2 GHz MSS spectrum.

Fifth, any claim that the SIRION acquisition should secure preferential treatment would risk undermining the integrity of ACMA's allocation framework. If accepted, such an approach would elevate a private offshore transaction over Australia's statutory spectrum objectives, competitive neutrality, and transparent consultation processes. That would be contrary to ACMA's stated role in managing spectrum in the long-term public interest and in setting technical and licensing rules through domestic regulatory instruments. The more appropriate approach is for ACMA to assess all applicants and proposed uses on their merits, including technical readiness, service capability, interference management, competition effects, regional and remote coverage benefits, and contribution to Australian public policy objectives.

Finally, AST submits that operational readiness and demonstrated service capability are more relevant indicators of public benefit than ownership of a filing position. As set out above, AST has already demonstrated D2D voice, SMS, and data connectivity using standard handsets, whereas Starlink's direct-to-cell capability has more recently been framed around staged deployment and early service introduction following its spectrum transaction with EchoStar. In the context of *FYSO* and the 2 GHz MSS allocation, ACMA should therefore prefer a framework that enables allocation based on demonstrated ability to deliver services efficiently and in the public interest, rather than any asserted entitlement flowing from control of the SIRION filing.

For the reasons set out above, ownership or control of the SIRION ITU filing confers no entitlement, priority, or preferential status in relation to the allocation of Australian 2 GHz MSS spectrum. Spectrum allocation decisions under the *Radiocommunications Act 1992* must be determined solely by the ACMA in accordance with its statutory obligations and the long-term public interest. This necessarily includes consideration of efficient spectrum use, competition, technical compatibility, and the ability of applicants to deliver services that meet Australia's connectivity objectives.

Accepting that control of an ITU filing—particularly one acquired through an offshore commercial transaction—should influence or determine domestic allocation outcomes would be inconsistent with:

- ACMA's established position that ITU filings do not confer licensing rights;
- the integrity of Australia's transparent, consultative spectrum management framework; and
- the principle of competitive neutrality between prospective applicants.

Therefore, no weight should be given to the acquisition of the SIRION filing in determining access to the 2 GHz MSS bands. Any such consideration would risk distorting the allocation process and undermining confidence in Australia's spectrum regulatory regime.

Instead, ACMA should adopt an approach that:

- assesses all proponents on a technology-neutral and merit-based basis;
- prioritises systems that demonstrate proven capability and near-term service delivery; and
- ensures that spectrum is assigned to those operators best positioned to deliver measurable public benefit, including improved connectivity outcomes in regional, remote, and Indigenous communities.

On this basis, allocation decisions should be grounded in demonstrable performance, readiness, and public interest outcomes—not in the ownership of international filing positions.

6. Competition Considerations and the Need to Avoid Market Concentration

The allocation of the 2 GHz MSS bands should promote effective competition and avoid outcomes that could result in excessive market concentration, including the emergence of a single-provider (monopoly) position in D2D satellite connectivity.

6.1 Importance of Competitive Market Structures

Consistent with the objectives of the *Radiocommunications Act 1992* and the spectrum management principles applied by the ACMA, spectrum allocation decisions should support:

- efficient use of spectrum;
- promotion of competition; and
- long-term public benefit.

A competitive market structure is critical to ensuring innovation, service quality, pricing discipline, and ongoing investment in network capability.

6.2 Risks of a Single-Provider Outcome

Allocation settings that result in a single operator controlling access to the 2 GHz MSS bands particularly in the emerging D2D segment would create a risk of:

- reduced competitive pressure on pricing and service quality;
- limited incentives for ongoing innovation and performance improvement;
- constrained choice for Australian MNOs and end users; and
- increased dependency on a single provider for critical communications capability.

These risks are particularly significant given the strategic importance of satellite-augmented mobile connectivity for regional, remote, and emergency communications.

6.3 Vertical Integration Considerations

Systems such as those associated with Starlink are vertically integrated across satellite infrastructure, launch capability, and service provision. While this model can deliver efficiencies, it also has the potential to:

- create barriers to entry for competing providers;
- limit opportunities for interoperable or wholesale access arrangements; and
- concentrate control over key elements of the communications value chain.

In this context, ensuring multiple providers have access to MSS spectrum can help mitigate risks associated with vertical integration and support a more open and competitive ecosystem.

6.4 Benefits of Multi-Operator Access

Enabling more than one MSS operator in the 2 GHz bands would:

- promote competition in service offerings and pricing;
- provide Australian MNOs with greater flexibility in selecting partners;
- enhance resilience through diversity of infrastructure; and
- encourage continued innovation in direct-to-device technologies.

A multi-operator environment is therefore more likely to deliver sustained public benefit than a single-provider model.

6.5 Implications for FYSO Spectrum Planning

In the context of the *FYSO*, ACMA should adopt allocation and licensing settings that:

- support competitive entry by two MSS providers;
- avoid concentration of spectrum holdings that would foreclose competition; and
- ensure that spectrum is assigned in a manner that maximises long-term public interest outcomes.

7. Allocation of 2 × 5 MHz for Low-Power, Low-Data-Rate Applications

AST SpaceMobile notes the ACMA's preliminary position to reserve 2 × 5 MHz within the 2 GHz MSS bands for low-power, low-data-rate applications, with the stated objective of facilitating coexistence with incumbent TVOB services.

AST SpaceMobile acknowledges the importance of protecting incumbent TVOB operations from harmful interference. However, AST SpaceMobile respectfully disagrees with the proposed reservation of a fixed portion of spectrum for low-power use cases and considers that this approach is neither necessary nor consistent with efficient spectrum management principles.

7.1 Inefficient Use of Spectrum

The 2 GHz MSS bands are well suited to supporting high-capacity, D2D broadband services. Reserving 2 × 5 MHz exclusively for low-power, low-data-rate applications risks:

- underutilisation of spectrum capable of supporting significantly higher value services;

- constraining capacity available for emerging D2D mobile broadband systems; and
- reducing the overall public benefit derived from the band.

Given the increasing demand for mobile broadband connectivity, particularly in regional and remote Australia, maximising usable bandwidth is critical.

7.2 Coexistence with TVOB Services Can Be Managed Through Technical Measures

Coexistence between MSS systems and TVOB operations can be effectively achieved through established technical and operational mechanisms, without the need for a dedicated low-power spectrum reservation. These include:

- appropriate PFD and equivalent power flux-density (EPFD) limits;
- coordination procedures in areas of known TVOB activity (e.g. major events);
- geofencing of mobile terminals;
- satellite beamforming and spatial isolation of transmissions;
- dynamic power control and scheduling; and
- adherence to applicable ITU-R recommendations and domestic technical frameworks.

Modern NGSO systems are capable of highly directional transmissions with precise control over interference environments. These capabilities enable protection of TVOB receivers while maintaining efficient spectrum utilisation.

7.3 Nature of TVOB Operations

TVOB services are typically:

- geographically localised and intermittent (e.g. event-based deployments); and
- coordinated on a temporary basis for specific locations and time periods.

Given this operational profile, a static reservation of spectrum across the entire band and geographic area is disproportionate to the actual interference risk. Targeted coordination and technical controls provide a more proportionate and efficient solution.

7.4 Technology Neutrality and Flexibility

The proposed reservation of spectrum for a specific class of applications is not consistent with the principle of technology neutrality underpinning ACMA's spectrum management approach. Pre-allocating spectrum for low-power use:

- limits flexibility to accommodate higher-value or evolving use cases;
- constrains innovation in D2D broadband services; and
- creates an artificial segmentation of the band that may not reflect actual demand or technical capability.

A technology-neutral framework based on interference limits would better support efficient and flexible use of the spectrum.

7.5 Impact on Market Development and Competition

Reserving 2 × 5 MHz for low-power applications reduces the bandwidth available for high-capacity MSS systems, which may:

- affect the viability of broadband D2D services;
- constrain competitive entry and service differentiation; and
- reduce the overall economic and social value derived from the band.

Maximising contiguous bandwidth is particularly important for systems seeking to deliver meaningful data services to standard mobile devices.

7.6 Preferred Approach

The ACMA may recall that industry was generally opposed to allocating MSS spectrum by way of auction. Should the ACMA decide to proceed with the method AST considers that it is vital that spectrum should only be allocated to bona-fide MSS operators with proven capability to deliver the services that Australia, particularly regional Australia, needs.

AST SpaceMobile further submits that ACMA should:

- make the full 2 GHz MSS allocation available for flexible use;
- implement appropriate technical limits to protect TVOB receivers; and
- rely on coordination mechanisms for managing localised and temporary interference scenarios.

This approach would ensure both protection of incumbent services and maximisation of spectrum efficiency.

8. Conclusion

AST SpaceMobile appreciates the opportunity to contribute to the development of the *FYSO* and the future framework for the 2 GHz MSS bands.

The 2 GHz MSS spectrum represents a critical national resource capable of delivering significant public benefit through the enablement of D2D mobile connectivity. Realising this benefit requires a regulatory approach that is technology-neutral, competition-oriented, and focused on efficient spectrum use.

In this regard, AST SpaceMobile emphasises that:

- demonstrated, near-term deployable systems should be supported to maximise timely public benefit;
- spectrum allocation should be based on merit and public interest outcomes, rather than ownership of international filing positions;
- competitive market structures should be preserved to avoid concentration and ensure ongoing innovation and affordability; and
- coexistence with incumbent services, including TVOB, should be achieved through targeted technical measures, rather than broad and inefficient spectrum reservations.

AST SpaceMobile considers that adopting these principles will enable ACMA to maximise the value of the 2 GHz MSS bands for Australia, including improved connectivity in regional and remote areas, enhanced resilience of communications infrastructure, and meaningful contributions to national policy objectives, such as Closing the Gap.

AST SpaceMobile looks forward to continued engagement with the ACMA as this work progresses.

Respectfully submitted,

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