Via Electronic Mail
spectrumworkprogram@acma.gov.au

May 3, 2026

Spectrum Licensing Policy Section
Australian Communications and Media Authority
PO Box 13112 Law Courts
Melbourne VIC 8010

RE: Comments on Draft Five-Year Spectrum Outlook 2026 – 2031 and 2026 – 2027 Work Program

Amazon Leo[1] appreciates the opportunity to submit comments in response to the Australian Communications and Media Authority ("ACMA") Draft Five-Year Spectrum Outlook 2026 – 2031 and 2026 – 2027 Work Program ("Draft FYSO"). The Draft FYSO reflects a thoughtful and forward-looking approach to the evolving demands on spectrum, and Amazon Leo welcomes the opportunity to contribute to the ACMA's planning process.

Our comments below address several areas of the Draft FYSO that are of particular relevance to satellite-enabled connectivity in Australia, including Fixed-Satellite Service ("FSS") access to the 17.3-17.7 GHz band, mobility services and Earth stations in motion ("ESIM"), non-geostationary satellite orbit ("NGSO") FSS access to the Q/V-bands, and direct-to-device ("D2D") services in the 2 GHz Mobile-Satellite Service ("MSS") band. In each of these areas, Amazon Leo's recommendations are guided by a shared objective with the ACMA: ensuring that Australia's spectrum framework keeps pace with technological innovation and maximizes connectivity outcomes for all users in Australia, including those in regional and remote communities.

I. Background

Amazon Leo is deploying a global constellation of low-Earth orbit ("LEO") satellites to deliver affordable, high-speed broadband connectivity worldwide. Amazon Leo began launching its constellation of NGSO, FSS satellites in LEO ("Amazon Leo System") in April 2025.[2] Since committing to invest over 10 billion U.S. dollars in the Amazon Leo System, Amazon Leo has made significant strides toward further deployment, including the continued expansion of its terrestrial infrastructure and the unveiling of innovative customer terminals that will offer high performance in small form factors and at affordable price points. Amazon Leo has started shipping terminals to select enterprise customers

[1] Amazon Kuiper Australia Pty Ltd (d/b/a "Amazon Leo") is a wholly owned subsidiary of Amazon.com Services LLC (collectively, "Amazon"). On November 13, 2025, Amazon replaced the Project Kuiper code name with Amazon Leo, its permanent brand for its satellite broadband network.

[2] Amazon Leo has now successfully launched over 300 satellites, with additional launches planned in the coming weeks and months. *See Amazon Leo mission updates: Amazon Leo mission updates: 300+ satellites deployed following back-to-back Atlas V, Ariane 6 launches* (Apr. 30, 2026), https://www.aboutamazon.com/news/innovation-at-amazon/project-kuiper-satellite-rocket-launch-progress-updates.

for initial network testing as part of an enterprise preview, and plans to roll out service more widely as we launch more satellites and increase the coverage and capacity of the Amazon Leo System.

Amazon Leo is building on the momentum of its broadband constellation with a major expansion into D2D services. On April 14, Amazon and Globalstar, Inc. ("Globalstar") announced a definitive merger agreement under which Amazon will acquire Globalstar and combine Globalstar's spectrum holdings and established MSS capabilities with the scale, performance, and reach of Amazon Leo.[3] Beginning in 2028, Amazon Leo will deploy a next-generation D2D satellite system to deliver advanced voice, data, and messaging services directly to mobile phones and other devices. Globalstar's fleet—including new satellites with expanded capabilities—will operate alongside Amazon Leo's broadband and D2D constellations, forming a unified network spanning fixed and mobile satellite services. Amazon Leo intends to work closely with MNOs and additional partners to bring this vision to life and extend reliable, high-speed connectivity to customers no matter where they are in the world.

In addition, Amazon and Apple Inc. have signed an agreement for Amazon Leo to continue to support iPhone and Apple Watch models currently using Globalstar's existing and planned upcoming LEO satellite constellations, and to collaborate with Apple on future satellite services using Amazon Leo's expanded satellite network.[4]

II. Comments on the Draft FYSO

A. FSS Allocation in the 17.3 – 17.7 GHz Band

Amazon Leo encourages the support of ACMA to allocate the 17.3-17.7 GHz band under International Telecommunication Union ("ITU") World Radiocommunication Conference 2027 ("WRC-27") Agenda Item 1.4, taking into account a similar allocation of that frequency band to NGSO services in Region 2 under ITU World Radiocommunication Conference 2023 ("WRC-23") Agenda Item 1.19.

Contiguous downlink spectrum is essential for the delivery of high-quality satellite broadband services. Customers in ITU Regions 1 and 2 already benefit from expanded spectrum access in the 17.3-17.7 GHz band, and WRC-23 Agenda Item 1.4 invites the ITU Radiocommunication Sector to conduct studies on an FSS space-to-Earth allocation in this band for Region 3. The results of those studies will be considered at the ITU 2027 World Radiocommunication Conference ("WRC-27"), paving the way for a globally harmonized FSS space-to-Earth allocation in the 17.3-17.7 GHz band.

Amazon Leo respectfully requests that the ACMA support review, preliminary replanning, and implementation preparation for this allocation in advance of, or concurrent with, WRC-27. Proactive engagement on this front—including through the ACMA's international engagement activities and its participation in Asia-Pacific Telecommunity ("APT") preparatory processes—will position Australia to move swiftly once WRC-27 addresses the matter. Preparing for a 17.3-17.7 GHz band FSS space-to-Earth allocation will support more rapid and diverse deployment of satellite broadband offerings for customers in Australia, and ensure that Australians are not left behind as other regions move forward with expanded satellite spectrum access.

B. Mobility Services and Earth Stations in Motion

Amazon Leo appreciates the ACMA's effort to ratify and implement the Region 3 amendments to Australia's national radiofrequency allocation plan, including the recognition of ITU Resolution 123

[3] *See Amazon to acquire Globalstar and expand Amazon Leo satellite network* (Apr. 14, 2026), https://www.aboutamazon.com/news/company-news/amazon-globalstar-apple.

[4] *See id.*

(WRC-23) for aeronautical and maritime earth stations in motion ("A-ESIM" and "M-ESIM," respectively). These steps represent meaningful progress toward enabling satellite-based mobility services in Australia.

An important area for further progress is the ACMA's Interim Business Operating Procedure ("BOP") for NGSO ESIM operations, which expired in January 2025.[5] In the absence of an updated BOP, there is a growing risk of divergent interpretations of the applicable rules, which can complicate satellite coordination and create uncertainty for operators seeking to deploy ESIM terminals in Australia.

Amazon Leo therefore recommends that the ACMA prioritize the development of an updated BOP for NGSO ESIM operations in the Ka-band. Specifically, we encourage the ACMA to ensure that the revised BOP:

- **Incorporates ITU-R Resolution 123 (WRC-23):** The updated BOP should reflect the international framework established by Resolution 123 for A-ESIM and M-ESIM communicating with NGSO FSS systems, providing clear and consistent operational parameters for satellite operators.

- **Includes support for land-based ESIM ("L-ESIM"):** As demand for satellite-based connectivity on land vehicles, trains, and other mobile platforms continues to grow, the BOP should extend its scope to encompass L-ESIM operations in the same Ka-band frequencies. Studies conducted by the European Conference of Postal and Telecommunications Administrations ("CEPT") have concluded that L-ESIM do not raise additional interference concerns when operating in bands available for uncoordinated FSS earth stations.[6] L-ESIM are already permitted to operate under CEPT ECC Decision 15(04) and have been authorized in the United States by the Federal Communications Commission.[7]

An updated BOP would provide regulatory clarity, facilitate efficient satellite coordination, and ensure that customers in Australia can benefit from the full range of ESIM services—including aeronautical, maritime, and land-based applications—that are increasingly available in other jurisdictions around the world.

C. Preserving NGSO FSS Access in the Q/V-bands

Amazon Leo notes that the ACMA continues to monitor developments within the 40 GHz, 46 GHz, and 47 GHz frequency bands (37.3-43.5 GHz, 45.5-47 GHz, and 47.2-48.2 GHz) as part of its assessment of whether replanning to accommodate millimetre-wave ("mmWave") IMT (5G) operations may be warranted. We appreciate the ACMA's measured approach to this assessment and respectfully urge the ACMA to ensure that any future changes to these bands preserve access for NGSO FSS use.

---

[5] *See Business operating procedure, Interim arrangements for the submission and processing of applications for space and space receive apparatus licenses authorizing the use of earth stations in motion (ESIM) in the fixed-satellite service communication with non-geostationary space stations in the frequency ranges 17.7-18.6 GHz, 18.8-19.3 GHz, 19.7-20.2 GHz, 28.5-29.1 GHz and 29.5-30 GHz* (August 2022), https://www.acma.gov.au/sites/default/files/2022-08/Interim_BOP_NGSO_ESIM.pdf.

[6] *See* ECC Report 217 at 3, 6, 13 (approved Feb. 2015, amended Jan. 31, 2020), https://docdb.cept.org/download/1162.

[7] *See* ECC Decision 15(04) at 2 (approved July 3, 2015, amended Nov. 20, 2020), https://docdb.cept.org/download/1496 ("ECC Decision 15(04)"); Kuiper Systems LLC, Stamp Grant, ICFS File No. SES-LIC-20240510-00976 (granted Jan. 28, 2025).

The Q/V-bands are critical expansion bands for next-generation NGSO satellite systems. Satellite operators already rely on portions of the Q/V-bands for FSS operations today, and these frequencies are becoming increasingly important as demand for satellite broadband capacity grows. Amazon Leo, for example, has received approval from the U.S. Federal Communications Commission ("FCC") to utilize the 37.5-42.5 GHz band (space-to-Earth) and the 47.2-50.2 GHz and 50.4-52.4 GHz bands (Earth-to-space) for future gateway and customer terminal communications, expanding the capacity of its network to deliver faster, more reliable service to customers.[8]

Meanwhile, because high-band spectrum does not offer IMT operators the same coverage advantages as low- or mid-band spectrum, actual IMT deployment in the Q/V-bands may be limited in practice. Amazon Leo therefore encourages the ACMA to carefully assess demonstrated industry demand for mmWave spectrum for IMT before making allocation decisions that could constrain satellite access to these bands. Ensuring that the Q/V-bands remain available for NGSO FSS use will provide greater capacity to support high-speed, low-latency broadband to customers in Australia, even as overall spectrum demand increases. At the same time, a measured approach does not foreclose the ACMA from revisiting allocations for IMT use in mmW frequency bands in the future should a compelling need be demonstrated.

D. D2D Services in the 2 GHz MSS Band

Amazon Leo strongly supports the ACMA's prioritization of the 2 GHz MSS band (1980–2005 MHz and 2170–2195 MHz) for D2D services. D2D represents a transformative shift in how mobile connectivity can be delivered—enabling direct satellite connections to standard smartphones and other devices without the need for specialized hardware. For a country with Australia's vast geography and dispersed population, D2D holds particular promise: it can fill persistent coverage gaps in regional, rural, and remote areas; provide a critical communications lifeline during natural disasters such as bushfires, floods, and cyclones; and deliver public safety benefits, including emergency messaging and voice services, in areas beyond terrestrial reach. The ACMA's decision to advance the 2 GHz MSS band for D2D use positions Australia at the forefront of this rapidly evolving technology.

As described above, Amazon Leo is making substantial investments in D2D, including through the planned acquisition of Globalstar and the deployment of a next-generation D2D satellite system. Amazon Leo is committed to bringing these capabilities to customers in Australia and working with MNOs and additional partners to do so.

To maximize the benefits of D2D for Australian customers, Amazon Leo encourages the ACMA to adopt spectrum segmentation options in the 2 GHz band that enable multiple operators to provide D2D offerings while ensuring that each provider receives sufficient spectrum to deliver effective coverage. Specifically, Amazon Leo supports allocation through 2 × 10 MHz and 2 × 15 MHz lots, or through the aggregation of multiple and contiguous 2 × 5 MHz lots. This approach would foster healthy competition among D2D operators while avoiding excessive fragmentation of the band. Overly narrow allocations risk leaving operators without the contiguous bandwidth needed to deliver reliable, high-quality service. Similarly, assigning all spectrum to a single operator would narrow competition, limit potential partnerships, reduce consumer choice, and stifle innovation. We kindly recommend avoiding conditions or assignments that could lead to the consolidation of radio frequency spectrum in the hands of a single operator, a scarce public resource. A thoughtful allocation framework that balances

[8] Kuiper Systems LLC, Stamp Grant, ICFS File Nos. SAT-LOA-20211104-00145 and SAT-AMD-20250311-00068 (granted Feb. 10, 2026).

competition with operational viability will maximize the public benefit derived from this important spectrum resource.

With regard to the Universal Outdoor Mobile Obligation ("UOMO"), Amazon Leo recognizes the importance of this framework and its objective of ensuring that baseline mobile coverage—including SMS and voice—is reasonably available outdoors across Australia. D2D services are expected to play a central role in fulfilling the UOMO's coverage objectives. However, the industry is still in the early stages of developing and deploying these services at scale. As recent proceedings before the Senate Environment and Communications Legislation Committee on 20 April 2026 have indicated, there are legitimate questions about the readiness of D2D services to meet the UOMO's requirements by the current default commencement date of 1 December 2027. Amazon Leo's own D2D system, for example, will begin deployment after this date. Amazon Leo therefore respectfully encourages the ACMA and the Australian Government to consider a later effective date for the UOMO. Additional time would broaden the pool of operators capable of delivering on the UOMO's objectives and foster robust competition in the D2D industry—driving innovation, improving service quality, lowering prices, and reducing the risk of dependence on a single provider. Conversely, an overly aggressive timeline risks entrenching early movers and foreclosing opportunities for new entrants that may offer superior technology or more competitive service. Allowing the industry to develop with multiple participants will produce better long-term outcomes for customers and for the UOMO's coverage goals.

Amazon Leo respects the goals and values that the UOMO would bring to Australians. Should the ACMA and the Australian Government consider proceeding with spectrum assignment in the near future to support existing UOMO timelines, we would recommend implementing short-term assignment(s) that allow UOMO implementation within the current timeframe. As multiple, innovative D2D technologies become available in Australia, long-term assignments could support diverse offerings for partners and end users.

III. Conclusion

Amazon Leo appreciates the ACMA's continued leadership in spectrum management and its commitment to policies that promote innovation, competition, and connectivity for all Australians. The FYSO reflects a comprehensive and forward-looking approach to the challenges and opportunities ahead, and Amazon Leo is pleased to contribute to this important process.

Respectfully submitted,

[redacted]

Madeleine Lottenbach
Senior Lead, Licensing & Regulatory Affairs
Amazon Leo
On behalf of Amazon Kuiper Australia Pty Ltd