The Manager
Space Systems
Australian Communications and Media Authority
PO Box 78
Belconnen ACT 2616
C/o: satellite.coordination@acma.gov.au

10 February 2022

Dear Sir/Madam,

**Proposed licensing arrangements for 2 GHz narrowband mobile-satellite services and 28 GHz fixed-satellite services - consultation 46/2021**

EchoStar Global Australia Pty Ltd (EchoStar Global Australia) welcomes the opportunity to make a submission to the Australian Communications and Media Authority's (ACMA) consultation paper on proposed licensing arrangements for 2 GHz narrowband mobile-satellite services and 28 GHz fixed-satellite services - consultation 46/2021.

EchoStar Global Australia is a satellite broadband service provider and operator with plans to provide global connectivity and 5G services through a network of global satellites.

EchoStar Global Australia currently holds International Telecommunications Union (ITU) spectrum rights through its Australian Sirion-1 ITU filing that have been brought into use for a non-geostationary orbit Mobile Satellite Service (MSS) S Band Satellite Network.

EchoStar Global Australia urges ACMA not to create a 2x5 MHz narrowband segment of the 2 GHz band frequencies but instead use that spectrum as part of the broader MSS allocation so that ACMA could issue 2x15 MHz MSS licenses.

This approach will result in the most efficient use of the spectrum resource and create opportunities for all operators to access more MSS spectrum to support the needs of not only narrowband applications (M2M, IoT), but also other MSS voice and data communications for different use cases (i.e. aeronautical, maritime, and terrestrial).

If ACMA does proceed as proposed in the consultation paper 46/2021, this allocation needs to be secondary and there needs to be appropriate protection to the 1980-2005 MHz and 2170-2195 MHz bands that does not degrade performance or reduce the spectrum amounts for this (these) operators.

EchoStar Global Australia also urges ACMA to support suppressing 2023 World Radiocommunication (WRC) Agenda Item 1.18 and advance a future agenda item for more mobile satellite service spectrum.

The 2005 – 2010 MHz and 2195 – 2200 MHz should not be set aside for narrowband MSS only and should instead be retained as a part of the greater MSS band 1980 – 2010 MHz paired with 2170 – 2200 MHz.

This will result in the availability of two 15 MHz paired licences which EchoStar Global Australia feels is a much more efficient use of this spectrum and will deliver better services to all Australians.

Providing two 15x15 MHz MSS licenses with global coverage is a more efficient use of spectrum and will result in broad coverage. It will have two systems that provide a panoply of MSS applications to meet market demands.

In addition, these systems will have more likelihood of economic success since the limited narrowband systems will be low-capacity systems.

Restricting the use of spectrum to specific use case scenarios injects artificial constraints on the use the spectrum. Restrictions place significant pressure on what is a finite resource with many competing demands and use cases.

Restrictions also often fail, for example the 900 MHz DSRR in the 1990s. Space is difficult to operate in and adding constraints increases that difficulty.

While there are numerous satellite IoT constellations proposed, or are executing various stages of business plans, it is far from clear that any of these companies can succeed in developing a profitable self-sustaining “satellite IoT only” business.

While EchoStar Global Australia supports commercial enterprise, we also need to think forward as to the implications of commercial failure of satellite IoT companies in terms of customers with orphaned devices and the impact of defunct satellites that turn into space junk potentially affecting the lifetime of all satellites in the same orbit.

Today there are no profitable satellite IoT only networks anywhere in the world. The only successful MSS companies are those that operate multiple capabilities – voice, data, and IoT.

Restricting the band to narrowband IoT applications will result in orphaned spectrum that operators can only exploit with significant additional costs for development of satellites and terminal equipment.

Cost is the mortal enemy of IoT solutions. IoT solutions are sold on the premise of saving money through efficiencies or generating new revenues through new capabilities.

Cost reduction is achieved through standardization and economies of scale. In the satellite IoT realm global frequency bands are required to reach that scale. A standalone dedicated bespoke band will produce adverse economics reducing the viability of global IoT solutions.

The business plan for a satellite IoT only network is difficult. First spectrum rights must be acquired from a sufficient number of countries to provide a large enough addressable market. This process can take many years.

After spectrum and system design, funding must be raised to build the constellation and finally building and launching a constellation takes, at a minimum, three years.

Despite some new space companies' predictions of large-scale revenues after one year in service, it takes a minimum of five years of commercial service to generate enough cash flow to cover operating expenses. This is due to the evaluation, testing, development, deployment timelines for IoT solutions.

Put simply, restricting the use of the band only to narrowband IoT will not produce the long-term benefits for Australia that the short-term interest might suggest.

If Australia chooses to proceed with making a narrowband allocation, this allocation must be secondary in the band and must not cause interference into the adjacent bands.

To this end, any protections for the adjacent band services in the 5x5 MHz of narrowband spectrum must be supported in the same frequency band, including guard bands.

EchoStar Global Australia urges ACMA to initiate a proceeding to determine the required protections.

In addition, the issues being raised in the discussion of Agenda Item 1.18 in the WRC preparatory process reflect the issues with a narrowband allocation that ultimately limits the spectrum to low power devices for the collection and management of data from terrestrial devices.

The Agenda Item is not progressing well due to a lack of clarity within Resolution 248 - the document that sets out the terms of reference for Agenda Item 1.18.

This situation has led to a disagreement among participants in terms of the interpretation of Resolution 248 and the technical parameters for performing the coexistence studies as well as several participants concerns about allocating spectrum to an application, not a radio service.

Accordingly, EchoStar Global Australia believes it would be beneficial if the Agenda Item were suppressed with a view of creating a new clearer Agenda Item for the next cycle that supported the 2010 – 2025 MHz frequency band for a no-application driven MSS allocation with clear rules and specific limitations to protect incumbent services as appropriate.

EchoStar Global Australia thanks ACMA for the opportunity to outline our views in this submission.

Should ACMA have any subsequent questions we would be more than happy to further assist with this important consultation.

Sincerely,

**Josh Williams**
**Director**
**EchoStar Global Australia**