

## **Sateliot response to ACMA's "2 GHz MSS technical parameters and demand considerations" consultation**

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### **Introductory remarks:**

Founded in 2018, Sateliot is a Spanish company and the first satellite operator to deliver IoT (Internet of Things) connectivity through the 5G NB-IoT NTN standard, approved by 3GPP in June 2022 as an extension of the 5G terrestrial standard.

Our constellation acts as space-based cell towers, extending coverage for mobile network operators (MNOs) and offering global connectivity for devices compatible with 3GPP Release 17. Sateliot operates as an infrastructure provider, building and managing a satellite network for NB-IoT NTN coverage based on the 3GPP 5G NB-IoT NTN protocol, developed in collaboration with major players in telecommunications and IoT.

In January 2023, Sateliot was granted an Apparatus License, allowing operations within the frequencies 2005.3-2006.3 UL and 2195.3-2196.3 DL.

We appreciate the chance to share our insights on the ongoing consultation regarding “2 GHz MSS technical parameters and demand considerations”. As one of the players in the satellite communication sector, we commend ACMA for its collaborative efforts in shaping regulatory frameworks that drive innovation and integrate advanced technologies seamlessly.

### **Likely Demand for the use of MSS Spectrum:**

Sateliot is, for now, focused on providing only narrow band connectivity based on the 3GPP 5G NB-IoT NTN standard. Given our focus, and following the 3GPP standard requisites, our demand for exclusive MSS spectrum would be of a total of 1MHz in both directions (UL and DL). This is the result of 5 carriers of 200 kHz each, which we believe will cover the expected demand of the market for IoT solutions.

### **Availability of Suitable Equipment:**

All the ecosystem manufacturers supporting the 3GPP 5G NB-IoT NTN are already working on implementing the new Release 17 standard protocol on chipsets, RF modules and devices.

Sateliot recognizes the importance of ensuring the availability of suitable equipment to facilitate the deployment of MSS services efficiently. Standardized equipment, such as modules and chips, is crucial to lowering deployment costs and ensuring interoperability across different networks and devices.

The adoption of the 3GPP Release 17 standard protocol enhances the performance and interoperability of MSS networks. This standardization enables seamless integration with terrestrial networks and ensures efficient communication between IoT devices and satellite infrastructure.

### **Configuration of Spectrum for Intended Use Cases:**

To optimize the use of the 2 GHz MSS spectrum, it's essential to configure it in a manner that accommodates diverse use cases effectively. This includes ensuring compatibility with existing adjacent band services, such as wireless broadband or narrowband communications and fixed point-to-point links, while also addressing specific requirements for industries like IoT.

Sateliot appreciates ACMA's comprehensive consideration of different spectrum allocation scenarios. Following a thorough evaluation, we wish to express our confidence in the viability and effectiveness of allocating blocks of 5 MHz spectrum for 2 GHz MSS systems. Based on this evaluation, we firmly believe that the proposed second configuration, which involves dividing the band into 5 generic blocks of 2 x 5 MHz, holds significant advantages.

Dividing the 2GHz band in smaller blocks allows the possibility of new entrants to the market that might have enough with small portions of spectrum.

Nonetheless, we would like to take the opportunity to propose a third configuration option.

#### Configuration 3

- > 2 x 10 MHz paired (1980-1990 MHz with 2170–2180 MHz)
- > 2 x 10 MHz paired (1990–2000 MHz with 2180–2190 MHz)
- > 5 x 1 MHz paired (2000–2005 MHz with 2190–2195 MHz)

This configuration would allow exclusive use of spectrum to new technologies that do not require big portions of it. There are multiple operators, and we are one of them, that do not need portions of 5 MHz but would need exclusive use of 1 MHz to implement the 3GPP standard as it has been approved.

Additionally, enhancing spectrum utilization efficiency is a key objective that the suggested configurations successfully address. This efficient use of spectrum not only maximizes the potential for innovation and growth within the satellite communications industry but also ensures the sustainable and equitable distribution of this valuable resource.

## **Regarding the Technical Parameters and Coordination Requirements:**

Sateliot appreciates the efforts made to harmonize technical parameters with international standards and best practices. Ensuring alignment with ITU requirements and 3GPP standards is crucial for promoting interoperability and facilitating the deployment of MSS services.

We firmly support the specified Power and Unwanted Emissions limits, provided they align with the rigorous standards outlined by 3GPP specifications. We believe that adherence to standard protocols and requirements is essential for achieving affordable and accessible global solutions. At Sateliot, we consider standardization not just a preference but a prerequisite for fostering innovation and ensuring interoperability across diverse ecosystems.

By upholding industry standards, particularly those set forth by 3GPP, we ensure that our solutions integrate seamlessly with existing infrastructure and networks. This not only enhances the reliability and performance of our offerings but also enables scalability and ease of deployment on a global scale.

Coordination with adjacent bands is critical to mitigate interference and ensure efficient spectrum utilization. Considering the services provided and users of adjacent bands is essential for protecting the spectrum and maximizing its benefits.

In conclusion, Sateliot underscores the importance of aligning technical parameters and coordination requirements with international standards to ensure interoperability, spectrum efficiency, and seamless connectivity for IoT applications. Collaboration among stakeholders is crucial to address industry needs and optimize the benefits of MSS spectrum allocation.

## **Assignment Model:**

Sateliot acknowledges ACMA's commitment to establishing transparent mechanisms for managing competing demands in spectrum allocation. However, we advocate for an alternative approach to auctions, emphasizing the importance of long-term socio-economic benefits for Australia.

Auctions, while providing short-term revenue gains, may not necessarily foster the socio-economic development and innovation required for Australia's future. In contrast, a collaborative allocation process that prioritizes innovation, accessibility, and affordability can better serve the public interest in the long run.

By avoiding auctions and instead focusing on equitable access and fostering innovation, Australia can ensure that spectrum resources are utilized optimally to drive technological advancement and economic growth. This approach aligns with Sateliot's vision of creating sustainable and inclusive connectivity solutions that benefit all Australians.

**Reconsideration of 2 GHz narrowband requirements:**

Right now Sateliot is of the opinion that it would not be necessary to consider the power reduction that ACMA proposes by establishing the limit at -60 dBW/MHz EIRP, since with the recommendations established by the ITU regarding the coordination of the different services together with the new technologies in telecommunications, it would be enough to manage coexistence with adjacent band TOB receivers, without needing to review any other parameters.

**CONCLUSION:**

Sateliot appreciates the opportunity provided by ACMA to share our insights on the spectrum allocation process. We are grateful for the transparent approach taken by ACMA and remain available to address any inquiries or clarifications that may arise.

It is commendable to observe that ACMA follows the path taken by various countries in managing the S-band, aligning with the needs of new space operators, particularly those with a demand for smaller spectrum allocations.

Lastly, by engaging toward a new spectrum allocation framework, ACMA facilitates the entry of new operators into the Australian market. This opens up avenues for these operators to provide diverse services, ultimately benefiting the Australian populace and industries. This approach promotes innovation, drives improvements in service quality, and offers consumers a wider range of choices. Consequently, Australian citizens stand to gain from enhanced access to advanced telecommunications services.

Sincerely yours,



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