

**Sateliot Response to Public consultation on the “Draft RSPG Opinion on assessment of different possible scenarios for the use of the frequency bands 1980-2010 MHz and 2170-2200 MHz by the Mobile Satellite Services beyond 2027.”**

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## Introduction

Sateliot is a Spanish based company focused on providing global narrowband Internet of Things (IoT) connectivity through a constellation of small satellites in Low Earth Orbit (LEO) to enable seamless and affordable connectivity for IoT devices and applications worldwide.

As an EU-based satellite IoT connectivity provider, we have a keen interest in Europe's policy approach on the use of the 2GHz band beyond 2027. The band in question is of high importance, as the service is provided based on the recently approved 3GPP 5G NB-IoT NTN standard, and the frequencies defined by it are in the 2GHz range (1980-2010MHz UL, 2170-2200MHz DL).

Being said so and following our contribution responses to the Radio Spectrum Policy Group "Questionnaire on the use of the MSS 2GHz band after 2027", we take the opportunity to respond to the Public consultation on the Draft RSPG Opinion on assessment of different possible scenarios for the use of the frequency bands 1980-2010 MHz and 2170-2200 MHz by the Mobile Satellite Services beyond 2027.

## Relevance to EU Policy Objectives

With the current 2GHz Europe scenario, there is no room for enhancing innovation and bringing new technologies that are in the benefit and interest of the European citizens.

IoT as a service will have an impact in the European economy, specially during the Digital Decade. The EU has made IoT's research and investment a priority, looking to capitalise on a rapidly growing market with new possibilities. Programs such as Next Generation Internet of Things (NGIoT) focus on developing partnerships and coordinating new technology efforts while other programs such as Horizon Europe address funding opportunities – Cluster 4 specifically focuses on "Digital, Industry, and Space." Enhancing rural connectivity will be a reality when using satellites to complement terrestrial 5G connectivity, and this is indeed the model of Sateliot.

To safeguard the European interest in a fragmenting world, it is of high importance to have an European company alignment. It is in the interest of the EU to gain access to those bands as soon as possible, thus choosing an active operator is strongly recommended. Sateliot in this case, is also compliant with the 3GPP standard, giving it the IoT edge over other already deployed operators that use proprietary devices. The service will be accessible to everyone and everywhere. There will be no need for proprietary devices or costly monthly subscriptions, as has been the case so far. Release 17 compliant standard NB-IoT devices available in the market from any provider will be able to connect directly to our satellite network without the need for any additional hardware such as antennas, modules or gateways. This is thanks to using a standard protocol, which is defined and implemented by all the key players in the telecommunications industry, in order to massify the services. 5G NB-IoT for non-terrestrial networks is no different.

## Stakeholder Category and proposal of a new band segmentation

**Sateliot currently falls in the M2M/IoT ecosystem** usage category, where dedicated allocation for satellite IoT is considered, given the efficiency, current use cases and expanded possibilities with additional dedicated spectrum. Sateliot plans to evolve its business model to also provide D2D connectivity.

The “Draft RSPG Opinion on assessment of different possible scenarios for the use of the frequency bands 1980-2010 MHz and 2170-2200 MHz by the Mobile Satellite Services beyond 2027” recommends Q2 of 2025 as an adequate date in order to reach sufficient common understanding on what scenario will be chosen and the respective next procedural steps. If all efforts should be done in that regard, and to maximise the use of the spectrum, Sateliot subscribes that the effective availability of the services by the operator is something that should be considered as a key criteria.

Sateliot is a satellite IoT provider that intends to offer IoT services under the 3GPP standard. Sateliot is thus positioned to immediately utilise any additional spectrum, maximising the economic benefits while reducing the opportunity costs. Sateliot’s satellite IoT service will be active imminently; having launched the first 5G IoT nanosatellite in April 2023 and with forecasts to have 10 nanosatellites flying at the end of 2024 and up to 250 by 2026.

### **New band segmentation’s proposal (Future Scenario different than 1-4 mentioned in the Draft in section 3.3.2)**

The wellbeing of the society comes from the contribution of different types of technologies and massive IoT is going to be one of the key ones. We are at the brink of a global revolution where recent technological evolutions of NGSO satellite technologies will offer affordable connectivity to reach unconnected areas across Europe. With the adoption of standards, satellite connectivity costs will be extremely reduced to final users, which will make the service accessible to everyone and everywhere.

As already mentioned in the draft consultation, the main reasons why the 3GPP chose bands 255 and 256 as the first bands to standardise for NB-IoT NTN were the following:

- They are bands supporting MSS in the three ITU regions.
- They are symmetrical paired bands that can be exploited in FDD (i.e. there is a UL component and a DL component, of the same size).
- They are bands that received the support of the industry represented in the 3GPP.

While it is true the statement said in the draft document that a minimum of 200kHz bandwidth is required in the downlink for NB-IoT, the demand for massive IoT solutions is expected to require up to 1MHz, once the demand is mature.

Because the channels are not able to be shared according to the 3GPP standard, **specific frequency allocation is needed.**

By changing the current scenario, where just 2 operators are owning the spectrum, adding more players will open the market and consequently lead to healthy competition.

Because of that, Sateliot believes it is important to guarantee access to spectrum for these types of services that can provide affordable connectivity solutions that meet the objectives of the EU Digital Decade, and consequently proposes a new option among the future 2GHz band segmentation scenarios.

Sateliot's proposal, with a clear competition to promote competition in Europe, would be as follows:

- having specific allocation of **2x5 MHz to NB-IoT NTN**, splitted in portions of 1MHz allowing up to 5 operators requesting 2x1MHz per operator.
- The other 2x25 MHz, would be splitted in **5 Mhz blocks**, allowing different uses and operators, as per the EU Commission criteria.

Additionally, there could be a type of "Sandbox" of spectrum being allocated to a neutral entity for testing and validation purposes only in order to spur innovation. This would allow new technologies to be tried and serve as a commercial roll out.

## Maturity and Rollout Timelines

When assessing the different possible technical scenarios for the use of the 2 GHz MSS frequency band beyond 2027, the readiness of the services as well as the investment are points to be considered. Sateliot has already deployed the first satellite of the constellation and expects to be commercially ready by second half 2024, and to expand the constellation to 256 satellites by 2026

Sateliot constellation, as any satellite constellation, involve investment commitments that require long term certainty. Further investments to the constellation are foreseen in the upcoming years and having a defined 2GHz new framework in Europe would definitely help in attracting investment.

## Enhancing competition

Sateliot's business model is purely based on wholesale. It will provide satellite capacity to global IoT ecosystem stakeholders, including MNO's, IoT operators and IoT solution providers through standard GSMA roaming agreements (roaming), so they can offer their customers an uninterrupted service experience. It is important to highlight that Sateliot will not provide the IoT connectivity service directly to end users (in other words, it will not act as a Service Provider to the end user). Cooperating with local MNOs will have a multiplier effect on local economies and will empower local telecom companies through partnerships.

The constant and fast-paced development in the satellite industry leads to important achievements in innovation that have a direct impact on the quality of life of European citizens. Including Sateliot's new proposed scenario for 2GHz band segmentation beyond 2027 will foster and impact the competition in the IoT sector and contribute to the Europe's Digital Decade.

## Recommendations

- Bindingly commit 2x5 MHz for satellite NB- IoT for the long-term, under light licensing terms (NEW SATELIOT'S PROPOSAL)
  - Allocated in 2x1 MHz blocks to up to 5 operators.
  - Essential to foster European access to space and IoT industry growth.
- Ensure affordable, non-discriminatory licence conditions allowing flexibility to scale.
  - Create a level playing field for space-based services to thrive.
  - Harmonise regulatory frameworks, technical parameters and renewal timeframes via EU-wide plan to the extent possible.
  - Avoid fragmentation across member states; enable seamless pan-EU coverage.
  - Incentivize efficient spectrum utilisation amidst future volume growth.
- Favour the options that allow for more potential operators in the market that promote healthy competition.
- Include some consideration about the enforcement, usage monitoring or even possibility of licence revocation in the new 2GHz framework.
- Take into account and address the trading/sub-licensing scenarios.

## Conclusion

Sateliot therefore strongly supports the proposed **new option 5 scenario** where dedicated allocation for satellite NB-IoT is considered, given the efficiency, current use cases and expanded possibilities that technologies contributing to global connectivity have. That is the reason why Sateliot would like to see in the definitive RSPG Opinion on assessment of different possible scenarios for future use of the frequency bands 1980-2010 MHz and 2170-2200 MHz by the Mobile Satellite Services beyond 2027, the potential issues addressed above to ensure a certain and homogeneous legal framework across Europe. Sateliot reinforces the statement that to support the increased demand in connectivity, technologies such as Sateliot's need to have access to spectrum and be able to use it in a more flexible manner.