connected

Attention to: Radio Spectrum Policy Group
E-mail: CNECT-RSPG@ec.europa.eu

Subject: Response to the Public Consultation on the Use of Frequency Bands 1980-2010 MHz and 2170-2200 MHz by Mobile Satellite Services beyond 2027

Date: 21/12/2023

Dear Radio Spectrum Policy Group

SIMPLYCONNECTED (d/b/a CONNECTED) commends, and fully supports, the efforts of the Radio Spectrum Policy Group (RSPG) on its ongoing work in the area of European spectrum planning, and in assessing different scenarios to ensure effective spectrum management and avoid fragmented national initiatives. CONNECTED appreciates the opportunity to respond to the Public Consultation on the use of frequency bands 1980-2010 MHz and 2170-2200 MHz by the mobile-satellite service (MSS) beyond 2027 (the Consultation).

CONNECTED was founded in 2023 with the commitment to providing global, standardised, and affordable Narrowband IoT (NB-IoT) connectivity from space to everyone, everything, everywhere. Headquartered in Coimbra, Portugal, the company aims to affordably connect humankind, unleashing a new wave of IoT-based business models, while contributing to bridge the digital divide. To do this, CONNECTED plans to develop, build, launch and operate a constellation of small satellites, using a unique hosted payload model, covering every point on Earth, providing the world with an affordable, standard, hassle-free, low-bandwidth, connectivity network. CONNECTED's network will include space nodes, seamlessly integrated into third-party NGSO satellites globally, and a distributed set of ground nodes acting as access points to the network, both for personal applications as well as IoT applications, ensuring a unique and sustainable service.

While acknowledging the continuity scenario, which to some extent may be a necessity, CONNECTED fully shares the RSPG's perspective that simply maintaining the status quo will limit competition across a growing set of applications that seek to use the MSS, notably inhibiting the entry of any other provider in bands narrowly scoped by 3GPP for 5G NTN. Thus, we advocate for a flexible, forward-looking approach, that fosters innovation and is receptive to the evolving needs of the MSS market.

Given CONNECTED's vision, and the provision of a connectivity service for NB-IoT, we urge the RSPG to consider policies that will facilitate the M2M/IoT ecosystem, particularly focused on Device-to-Device (D2D) communication. Such policies will align with the RSPG's vision beyond 2027. In fact, CONNECTED is actively working to be part

of M2M/IoT ecosystem, including support to initiatives like the IRIS^2, where we have been selected as one of the hosted payloads by the industry consortium leadership.

To this end, and based on our experience, goals, and discussions with multiple partners and customers, we are fully aligned with Scenario 3 of the Consultation (see Section 3.2.3). This scenario contemplates M2M/IoT missions typically requiring around 200 kHz for downlinks with a possible implementation of 2x250 kHz. As suggested in the Consultation, these missions could be accommodated with less than 1 MHz of the MSS spectrum. Furthermore, these NB-IoT applications are potentially within the scope of future 3GPP Releases and, if the spectrum is divided in such small blocks, this may alleviate some, if not all, the concerns about allocated spectrum portions not being able to be shared in the 3GPP standard (see Section 3.2.3.1.1 of the Consultation). To anticipate the needs of the M2M/IoT ecosystem, RSPG should recommend a flexible framework that considers the spectrum needs of emerging M2M/IoT technologies, complements evolving 3GPP standards, and promotes a diverse MSS landscape.

Regarding spectrum sharing, within the umbrella of M2M/IoT ecosystem, there may be technologies and applications that can share spectrum either by time allocation, coding technique, or by other means. While certain applications do require dedicated spectrum, band segmentation can result in underutilisation which is contrary to efficient spectrum management principles. CONNECTED encourages the RSPG to maintain an open perspective about sharing the finite MSS spectrum resource while it recommends policies to effectively allocate this resource across all envisioned scenarios.

In a similar scope, and specially as a new start-up and developer of technological solutions, CONNECTED strongly supports the idea of a spectrum sandbox for test and validation purposes. This sandbox could be managed by a neutral entity like the European Space Agency guided by a specific set of Terms of Reference developed by the European Commission with the support of the RSPG. A spectrum sandbox would create an environment for new entrants to experiment without the need to arrange commercial spectrum leases with incumbent MSS users — a cost-prohibitive barrier to innovation.

When moving from development activities to commercial operations, in a market governed by big and established operators, CONNECTED believes that a flexible authorisation framework for the MSS is essential to facilitate new entrants. We recognise that this framework must also ensure international collaboration for harmonised spectrum use. We understand that RSPG is striving to find the balance between flexible rules and the regulatory certainty needed for investment and commend the RSPG's commitment to a lean and general authorisation regime. Such a regime can or will alter the fates of many start-ups, including CONNECTED, which is why we fully support efforts to reduce administrative burdens on ECS and ECN providers. This approach is pivotal for fostering a competitive and agile MSS market.

Regarding the possible options for the future spectrum usage described in Section 3.3.2 of the Consultation, we urge the RSPG to recommend that part of the MSS spectrum (and the n256 band) be more segmented to include other potential operators, namely those looking at narrowband M2M/IoT applications, needing less than 1 MHz. We

understand that this may be possible within Options 2-4 which are described as "enable[ing] Europe for other usage, e.g. for inclusion of IRIS[2]." However, we believe that describing this as three or four potential operators ignores CONNECTED, and the list of other stakeholders listed in Section 2.6.2 of the Consultation, that seek to use the MSS spectrum either on a dedicated or shared basis. We therefore recommend revising the Options to include "multiple potential operators supported by flexible bandwidth assignment" or a comparable regime that anticipates CONNECTED and the operators in Scenario 3 (see Section 3.2.3 of the Consultation), and even future ones.

Finally, CONNECTED calls attention to the recent outcomes of the 2023 World Radiocommunication Conference (WRC) related to the MSS. Specifically, three new WRC Resolutions were adopted that invite the Radiocommunication Sector of the ITU to study portions of the radio spectrum for new MSS allocations.[1] These studies should be completed in time for the 2027 WRC to consider, and possibly make new MSS allocations. As these studies are adjacently related to this Consultation, the RSPG may wish to include mention of these international activities as they could result in new MSS allocations that impact the European spectrum landscape beyond 2027. New MSS allocations available to Europe, coupled with a lean and general authorisation regime, would spawn a wave of new mobile communication connected by satellites.

In conclusion, CONNECTED appreciates the opportunity to contribute to the dialogue on MSS spectrum usage, and kindly requests that our name be included among the stakeholders interested in using the 2 GHz MSS frequency band beyond 2027 for M2M/IoT missions. We believe that the proposed scenarios, combined with our recommendations, will contribute to a robust, innovative, and inclusive MSS framework.

Thank you for considering our input.

Best regards,

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[1] Resolution COM6/8 invites studies in the 1 427-1 432 MHz, 1 645.5-1 646.5 MHz, 1 880-1 920 MHz, and 2 010-2 025 MHz frequency bands for low-data rate applications. Resolution COM6/9 invites studies in the 694/698 MHz to 2.7 GHz frequency range for MSS connecting directly to International Mobile Telecommunications (IMT) user equipment. Resolution COM6/10 invites studies in the 2 010-2 025 MHz, 2 160-2 170 MHz, and 2 120-2 160 MHz frequency bands for general MSS.