

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 (October 2023)

To: RADIO SPECTRUM POLICY GROUP

EUROPEAN COMMISSION - Directorate-General for Communications Networks, Content and Technology

Respondent: AST SCIENCE IBERIA, SL

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Consultation: [RSPG23-042final-Draft_Opinion-MSS-public_version.pdf \(europa.eu\)](#) (Oct 2023)

Background and Response

AST SpaceMobile is pleased to respond to the RSPG's "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".

AST SCIENCE IBERIA SL is a Spanish company that is a subsidiary of [AST SpaceMobile, Inc.](#) This contribution is submitted by AST SCIENCE IBERIA SL on behalf of AST SpaceMobile, Inc and is referred in this contribution as AST.

AST SpaceMobile, Inc is headquartered in Midland, Texas, USA – and is a low earth orbit (LEO) satellite manufacturer, designer and operator building the first and only global cellular broadband network in space designed to operate directly with standard, unmodified mobile devices based on our extensive IP and patent portfolio. AST's engineers and space scientists are on a mission to eliminate the connectivity gaps faced by today's five billion mobile subscribers and finally bring broadband to the billions who remain unconnected. Some of our investors include Vodafone, Rakuten and American Tower Corporation. AST is also working with established vendors such as Nokia, SAFRAN and TSMC.

AST's mission is to work with some of the largest mobile network operators across the globe to improve connectivity. AST aims to help the MNO's customers stay connected using the same frequencies licensed by the operator. For example, AST intends to work with AT&T in the USA, and in other geographic areas - Vodafone, Telefonica and Orange to name a few. AST's goal is to eliminate the connectivity gaps faced by today's 5 billion mobile subscribers and bring broadband to approximately half of the world's population who remain unconnected, including those in Europe who do not have mobile broadband coverage and help national operators in Europe to extend their coverage where terrestrial towers are not possible for economic, geographic, or environmental reasons. In addition, the planned service is expected to provide an overlay 4G/5G network during an emergency response / disaster recovery event when the terrestrial networks are impacted due to extreme weather, cyber-attack and other events that impact terrestrial networks operating.

AST is currently testing its prototype satellite called BlueWalker 3 which is an 8mx8m phased array antenna the largest commercial LEO satellite on orbit today. This year we have successfully tested voice calls and broadband to unmodified standard devices.

The development of the new concept and innovation including a satellite and terrestrial components, is inspired on the original goals of EU Decision 626/2008 aiming at providing an MSS service complemented with terrestrial component, although using a LEO constellation rather than a unique geostationary orbit (GSO) space station.

AST is pleased to contribute and collaborate to the ongoing work of the Radio Spectrum Policy Group (RSPG) to develop an opinion on the future or the EU-level regulatory framework on Mobile Satellite

Services (MSS) in the 2 GHz frequency band (1980 to 2010 MHz for Earth to space communications and from 2170 to 2200 MHz for space to Earth communications) beyond 2027.

The expiry of the current licences in 2027 provides a rare but timely opportunity to consider how the 2GHz MSS spectrum band can be used to advance a number of key policy and consumer objectives for Europe.

Key priorities:

- Accelerating and driving digital inclusion in Europe
- Providing resilience to existing mobile networks (e.g. disaster response)
- Digital transformation for European customers
- Encouraging a pro-investment and innovation climate

AST SpaceMobile recommends the spectrum is made available specifically for mobile broadband use on a European basis - in order for Europe to lead and drive digital transformation through existing mobile connectivity and to accelerate 5G.

The innovation and technology that AST SpaceMobile is already testing is based on partnerships with terrestrial mobile operators and the use of their spectrum to extend mobile broadband. Including the mobile use of the MSS band is likely to optimise both commercial success and consumer benefits to meet European customers' appetite for broadband.

We previously provided key information about AST and respectfully refer back to this submission.

AST SpaceMobile's recent advancements:

- **April 2023:** AST SpaceMobile made the **first-ever two-way voice calls**, directly to everyday cell phones, using a satellite in space
- **June 2023:** We demonstrated the **first-ever 4G LTE connectivity** from space directly to cell phones
- **September 2023:** We announced the **first-ever 5G connections and calls** directly from space to everyday smartphones

AST SpaceMobile accomplished these unprecedented leaps in mobile telecommunications capabilities alongside our partners Vodafone, AT&T, Rakuten and Nokia.

Company engineers demonstrated space-based 5G connectivity by placing a call from Maui, Hawaii, USA, to a Vodafone engineer in Madrid, Spain, using AT&T spectrum and AST SpaceMobile's BlueWalker 3 test satellite. The 5G call was placed on September 8, 2023, from an unmodified Samsung Galaxy S22 smartphone in a wireless dead zone located near Hana.

Margherita Della Valle, Vodafone Group CEO, said: *"Vodafone is striving to close the mobile usage gap for millions of people across Europe and Africa. By making the **world's first space-based 5G call** to Europe, we have taken another important step in realising that ambition. We're excited to be at the forefront of space technology through **our partnership with AST SpaceMobile.**"*

Prior to this, we broke our own direct-to-device data session record by achieving a download rate of approximately 14 Mbps. These historic accomplishments followed our April announcement of completing the first-ever space-based voice calls using everyday unmodified smartphones.

You can watch a video memorializing our 5G call and other testing milestones using BlueWalker 3 here: [First-Ever 5G Connectivity from Space to Everyday Smartphones Achieved by AST SpaceMobile - YouTube](https://bit.ly/46vhvgN) (URL: <https://bit.ly/46vhvgN>)

The full text of our 5G connectivity press release can also be viewed here: [AST SpaceMobile Achieves Space-Based 5G Cellular Broadband Connectivity From Everyday Smartphones, Another Historic World First - Business Wire](https://bit.ly/asts5gbw3) (URL: <https://bit.ly/asts5gbw3>)

We are excited to share these technology achievements with you as we move toward commercialization of our service and the planned launch of our first five commercial BlueBird satellites in the first quarter of 2024.

AST's planned innovative service has the potential to expand 5G coverage to areas where it would otherwise take years for Europeans to gain access to such networks – and terrestrial coverage may never occur in certain instances without a service comparable to AST's.

AST, recently demonstrated uplink and downlink signal strength to confirm the ability to support cellular broadband speeds and completed the first space-based voice call using an unmodified Samsung Galaxy S22, directly connecting to the company's second test satellite BlueWalker 3 ("BW3"):

*"This is the first time anyone has achieved a direct voice connection from space to everyday cellular devices, demonstrating a significant advancement in AST SpaceMobile's mission to provide connectivity to the nearly 50% of the global population who remain unconnected from cellular broadband."*¹ Moreover, the initial test calls:

*Validated the AST patented system and architecture and were completed using unmodified smartphones. The calls demonstrated the power of AST SpaceMobile's BW3 satellite, the largest-ever commercial communications array deployed in low Earth orbit and is an important step to providing space-based 2G, 3G, 4G LTE and 5G cellular broadband globally. In addition to test calls, AST SpaceMobile engineers conducted initial compatibility tests on a variety of smartphones and devices. The phones successfully exchanged Subscriber Identification Module . . . and network information directly to BW3 — crucial for delivering broadband connectivity from space to any phone or device. Additional testing and measurements on the smartphone uplink and downlink signal strength confirm the ability to support cellular broadband speeds and 4G LTE / 5G waveforms.*²

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¹ [AST SpaceMobile Provides First Quarter 2023 Business Update - AST SpaceMobile | AST SpaceMobile \(ast-science.com\)](#)

² Ibid