

**ADD**

**RESOLUTION 133 (WRC-23)**

**Study of the possible use of the frequency band 12.75-13.25 GHz by aeronautical and maritime earth stations in motion communicating with non-geostationary space stations in the fixed-satellite service (Earth-to-space)**

The World Radiocommunication Conference (Dubai, 2023),

*considering*

- a)* that the frequency band 12.75-13.25 GHz is currently allocated, on a primary basis, to fixed service, mobile service and fixed-satellite service (FSS) (Earth-to-space) and, on a secondary basis, to the deep-space research service (space-to-Earth) worldwide;
- b)* that the frequency band 12.75-13.25 GHz is used in the FSS by geostationary-satellite networks (GSO) in conformity with the provisions of Appendix **30B** (No. **5.441**) and that there are GSO satellite networks in the FSS that are operating in this frequency band;
- c)* that the frequency band 12.75-13.25 GHz is used in the FSS by non-geostationary-satellite (non-GSO) systems in conformity with No. **5.441**;
- d)* that the demand for aeronautical and maritime connectivity could be partially met by allowing aeronautical earth stations in motion (A-ESIMs) and maritime earth stations in motion (M-ESIMs) to communicate with non-GSO space stations in the FSS in the frequency band 12.75-13.25 GHz (Earth-to-space);
- e)* that advances in technology, including the use of antenna tracking techniques, allow A-ESIMs and M-ESIMs to operate within the characteristics of fixed earth stations in the FSS;
- f)* that the use of the frequency band 12.75-13.25 GHz for A-ESIMs and M-ESIMs operating with non-GSO FSS could contribute, as an additional use of the spectrum, to improving broadband communications for passengers;
- g)* that A-ESIMs and M-ESIMs referred to in the present Resolution are not to be used for safety-of-life applications;
- h)* that the frequency band 10.6-10.7 GHz is used for the Earth exploration-satellite service (EESS) (passive) in line with Recommendation ITU-R RS.1861;
- i)* that all emissions are prohibited in the frequency band 10.68-10.7 GHz according to No. **5.340**,

*noting*

- a) that Resolution **156 (Rev.WRC-23)** addresses the use of earth stations in motion (ESIMs) communicating with GSO space stations in the FSS in the frequency bands 19.7-20.2 GHz and 29.5-30.0 GHz;
- b) that Resolution **169 (Rev.WRC-23)** addresses the use of ESIMs communicating with GSO space stations in the FSS in the frequency bands 17.7-19.7 GHz and 27.5-29.5 GHz;
- c) that this conference has adopted Resolution **123 (WRC-23)** which contains the technical operational and regulatory provisions for ESIMs communicating with non-GSO space stations in the FSS in the frequency bands 17.7-18.6 GHz, 18.8-19.3 GHz and 19.7-20.2 GHz (space-to-Earth), and the frequency bands 27.5-29.1 GHz and 29.5-30.0 GHz (Earth-to-space);
- d) that this conference has adopted Resolution **121 (WRC-23)**, which contains the technical operational and regulatory provisions for the use of A-ESIMs and M-ESIMs communicating with GSO space stations in the FSS in the frequency band 12.75-13.25 GHz;
- e) that the use of non-GSO space stations in the FSS may introduce more complicated sharing scenarios,

*recognizing*

- a) that, in conformity with No. **5.441**, non-GSO systems shall not claim protection from GSO networks operating in conformity with the Radio Regulations and shall operate in such a way that any unacceptable interference that might occur due to their operation is immediately eliminated;
- b) that, in conformity with No. **5.441**, the use of the frequency band 12.75-13.25 GHz (Earth-to-space) by a non-GSO satellite system in the FSS is subject to the application of the provisions of No. **9.12** for coordination with other non-GSO satellite systems in the FSS;
- c) that Article **21** contains the power flux-density limits at the Earth's surface produced by emissions from non-GSO FSS systems in the space-to-Earth direction to protect fixed and mobile services;
- d) that Article **22** contains the equivalent power flux-density limits for non-GSO FSS systems in the frequency band 12.75-13.25 GHz (Earth-to-space) that guarantee the protection of GSO networks;
- e) that non-GSO FSS systems that operate in the frequency band 12.75-13.25 GHz (Earth-to-space) may also operate in the frequency band 10.7-10.95 GHz (space-to-Earth) in accordance with No. **5.441**;
- f) that the potential interference impact from unwanted emissions produced by non-GSO FSS systems communicating with A-ESIMs and M-ESIMs in the frequency band 10.7-10.95 GHz (space-to-Earth) in accordance with No. **5.441**, into passive sensors of the EESS operating in the adjacent frequency band 10.6-10.7 GHz, should be studied to ensure protection of existing and future use of the frequency band by the EESS (passive);

g) that the current use and future development of existing services in the frequency band should be protected from unacceptable interference caused by operation of A-ESIMs and M-ESIMs communicating with non-GSO space stations in the frequency band;

h) that interference management mechanisms, including necessary mitigation measures, are required for the operation of non-GSO ESIMs to protect other space and terrestrial services to which the frequency band referred to in *considering a)* are allocated,

*resolves to invite the ITU Radiocommunication Sector to complete in time for the 2031 world radiocommunication conference*

1 studies on the technical and operational characteristics of A-ESIMs and M-ESIMs planning to communicate with the non-GSO space stations in the FSS in the frequency band 12.75-13.25 GHz (Earth-to-space);

2 studies on sharing and compatibility between A-ESIMs and M-ESIMs communicating with non-GSO space stations in the FSS and the current and planned stations of existing services with allocations in the frequency band 12.75-13.25 GHz, ensuring that ESIMs will not call for further protection or cause more interference than existing typical earth stations;

3 the development of the technical conditions and regulatory provisions for the operation of A-ESIMs and M-ESIMs communicating with non-GSO space stations in the FSS that operate in the frequency band 12.75-13.25 GHz (Earth-to-space), taking into account the results of the studies outlined in *resolves to invite the ITU Radiocommunication Sector to complete in time for the 2031 world radiocommunication conference 1 and 2*, while ensuring the protection of incumbent services;

4 sharing and compatibility studies for communications between non-GSO space stations in the FSS and ESIMs with respect to the EESS (passive) allocated in the adjacent frequency band referred to in *recognizing f)*;

5 studies on the development of a new Recommendation for the network control and monitoring centre functionality for ESIM operation;

6 studies on the responsibility of the entities involved in the operation of the A-ESIMs and M-ESIMs addressed by this Resolution,

*invites administrations*

to participate actively in the studies by sending their contributions to the ITU Radiocommunication Sector,

*invites the 2031 world radiocommunication conference*

to consider the results of the above-mentioned studies and to adopt the necessary measures accordingly.