

RESOLUTION 129 (WRC-23)

**Studies on possible revisions of sharing conditions in the frequency band
13.75-14 GHz to allow the use of uplink fixed-satellite service
earth stations with smaller antenna sizes**

The World Radiocommunication Conference (Dubai, 2023),

considering

- a)* that WARC-92 added an allocation to the fixed-satellite service (FSS) (Earth-to-space) in the frequency band 13.75-14 GHz;
- b)* that WRC-03 introduced changes to Nos. **5.502** and **5.503** that made it possible to use earth station antennas in the range of 1.2 to 4.5 metres for the geostationary fixed-satellite service (FSS) networks with limits on power flux-density (pfd) and equivalent isotropically radiated power (e.i.r.p.) density;
- c)* that WRC-03 did not introduce any changes in Nos. **5.502** and **5.503** in regard to earth stations for non-geostationary-satellite orbit (non-GSO) systems;
- d)* that there is congestion in the geostationary orbit (GSO);
- e)* that many new satellite systems are being introduced into non-GSO;
- f)* that it is necessary to guarantee that orbit and spectrum resources are used efficiently and rationally to facilitate the introduction of new satellite networks;
- g)* that there is a requirement for more uplink spectrum in the frequency range 13-15 GHz, which could be used worldwide by smaller earth station antennas, to complement the downlink capacity in the frequency range 10-13 GHz;
- h)* that the frequency band 13.75-14 GHz is allocated worldwide on a primary basis to the radiolocation service (RLS);
- i)* that the frequency band 13.75-14 GHz is shared with the RLS on the basis of the conditions set forth in No. **5.502**;
- j)* that the sharing conditions in No. **5.502** impose technical limitations on both the RLS and FSS to balance the operational needs of the two services;
- k)* that WRC-03 decided that a reduction in the FSS earth station's antenna size required the application of a pfd limit applied at the low-water mark and at national land borders to ensure continued protection of the RLS;

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l) that the enhancement of operating conditions of the earth stations in the frequency band 13.75-14 GHz would help to meet the evolving needs of FSS applications and facilitate an efficient and rational use of the Earth-to-space and space-to-Earth frequency bands corresponding to the frequency ranges 13-15 GHz and 10-13 GHz;

m) that space research service (SRS) systems continue to operate in the frequency band 13.75-14 GHz, including on a primary basis under No. **5.503**,

noting

a) that the SRS is allocated to this band on a secondary basis;

b) that the geostationary space stations of the SRS for which the Bureau has received information for advance publication before 31 January 1992 shall be operating on an equal footing with the stations in the FSS; after that date, the new geostationary space stations of the SRS shall operate on a secondary basis;

c) that, until the geostationary space stations of the SRS for which the Bureau has received information for advance publication before 31 January 1992 stop operating in that frequency band, the frequency band 13.77-13.78 GHz shall be shared with the SRS under the conditions set forth in No. **5.503**;

d) that, in the Master International Frequency Register, there is currently only a very limited number of earth stations and satellite networks of the SRS in the frequency band 13.77-13.78 GHz for which advance publication information was received before 31 January 1992;

e) that the usage of the FSS and other services that share this band may have evolved;

f) that the service objectives, geographical areas of operations, and protection requirements of the RLS are described in Recommendation ITU-R M.1644;

g) that, in some countries, the band is also allocated to the fixed service and the mobile service (Nos. **5.499** and **5.500**) and to the radionavigation service (RNS) (No. **5.501**),

recognizing

a) that the possible use of the frequency band 13.75-14 GHz by uplink FSS earth stations with smaller antenna sizes requires studies to support possible regulatory changes while continuing to ensure the protection of the RLS and SRS, as addressed in Nos. **5.502** and **5.503**;

b) that it is necessary to study possible revised coexistence conditions between the primary services that share this band with their current characteristics and applications and uplink FSS earth stations with smaller antenna sizes, in particular noting Nos. **5.502** and **5.503**;

c) that these studies need to take into account that current SRS systems have been developed and operate in the current sharing environment in accordance with Nos. **5.502** and **5.503**, and changes to these regulations may change this sharing environment;

d) that there is a need to ensure the continued operations of the RLS in the frequency band 13.75-14 GHz;

- e) that the pfd limits at the low-water mark and at the border of national territories in No. **5.502** are critical to ensure the protection of the RLS;
- f) that the power limitations applicable to stations in the RLS and RNS stated in No. **5.502** shall remain unchanged;
- g) that frequency assignments to ship and mobile stations of the RLS cannot be notified under No. **11.14**, and as such the coordination procedure as stipulated in Section II of Article **9** cannot apply as a method for resolving interference issues between FSS earth stations and mobile stations of the RLS;
- h) that the protection of the RLS in the frequency band 13.75-14 GHz and SRS in the frequency band 13.77-13.78 GHz relies on the application of a combination of FSS antenna size limitation and of pfd limits at the low-water mark and at the border of national territories,

resolves to invite the ITU Radiocommunication Sector to complete in time for the 2027 world radiocommunication conference

1 studies on the technical and operational limitations regarding the minimum antenna size and associated power limitations of GSO and non-GSO FSS earth stations in the frequency band 13.75-14 GHz (Earth-to-space), while ensuring the protection of the services stipulated in Nos. **5.502** and **5.503**;

2 studies on possible changes to Nos. **5.502** and **5.503** and possible associated regulatory measures,

invites administrations

to participate actively in the studies and provide the information required for the studies listed under *resolves to invite the ITU Radiocommunication Sector to complete in time for the 2027 world radiocommunication conference* by submitting contributions to the ITU Radiocommunication Sector,

invites the 2027 world radiocommunication conference

to consider, based on the results of the above studies, the minimum antenna size and associated power limitations of GSO and non-GSO FSS earth stations in the frequency band 13.75-14 GHz (Earth-to-space), possible changes to Nos. **5.502** and **5.503**, and consequential regulatory measures.