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RESOLUTION 722 (WRC-23)

Studies on the coexistence between spaceborne synthetic aperture radars operating in the Earth exploration-satellite service (active) and radiodetermination service in the frequency band [9 200-10 400 MHz]*

The World Radiocommunication Conference (Dubai, 2023),

considering

- a)* that the Earth exploration-satellite service (EESS) (active) is used for various active spaceborne sensor applications, among which synthetic aperture radar (SAR) is the most widely used application;
- b)* that, following the decisions of WRC-07 and WRC-15, the allocation of the EESS (active) was extended from the frequency band 9 500-9 800 MHz to 9 200-10 400 MHz, which is shared with the radiodetermination service, including radiolocation and radionavigation services;
- c)* that ITU Radiocommunication Sector (ITU-R) studies had concluded that the percentage of time of exceedance of the protection criteria of the radiodetermination service due to SAR emissions of space stations would be low and even lower when taking the processing gain of radar systems into account;
- d)* that, since 2015, the number of advance publication information and coordination requests for SAR application satellite networks/systems in the frequency band 9 200-10 400 MHz has increased;
- e)* that the growing usage of spaceborne SAR transmitters, as described in *considering d)*, may increase the probability of interference between radiodetermination radars and SAR satellites,

noting

- a)* that No. **5.474A** stipulates that the use of the frequency bands 9 200-9 300 MHz and 9 900-10 400 MHz by the EESS (active) is subject to agreement to be obtained under No. **9.21** from a number of administrations;
- b)* that No. **21.16** provides the power flux-density limit at the Earth's surface produced by emissions from the EESS (active) in the frequency band 9 900-10 400 MHz with respect to the protection of the fixed service;
- c)* that Recommendations ITU-R M.1796 and ITU-R M.1849 contain the technical characteristics and protection criteria for radars operating in the radiodetermination service in the frequency range 8 500-10 680 MHz;

* The appearance of square brackets around certain frequency bands in this Resolution is understood to mean that WRC-27 will consider and review the inclusion of these frequency bands with square brackets and decide, as appropriate.

d) that Report ITU-R RS.2313 contains sharing analyses of wideband EESS (active) transmissions with stations in the radio determination service operating in the frequency bands 8 700-9 300 MHz and 9 900-10 500 MHz,

recognizing

a) the importance of the continuing operation of SAR satellites and the need for protection for the radiodetermination systems operating in the frequency band 9 200-10 400 MHz;

b) that No. **5.476A** states that in the frequency band 9 300-9 800 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or claim protection from, stations of the radionavigation and radiolocation services;

c) that No. **5.474D** states that stations in the Earth exploration-satellite service (active) shall not cause harmful interference to, or claim protection from, stations of the maritime radionavigation and radiolocation services in the frequency band 9 200-9 300 MHz, the radionavigation and radiolocation services in the frequency band 9 900-10 000 MHz and the radiolocation service in the frequency band 10.0-10.4 GHz;

d) that the aeronautical radionavigation service (ARNS) operating in the frequency band 9 000-9 200 MHz and the maritime radionavigation service operating in the frequency band 9 200-9 500 MHz are used by safety service systems, in accordance with Nos. **1.59** and **4.10**;

e) that Recommendation ITU-R M.1796 contains the technical characteristics and protection criteria for radars operating in the radiodetermination service in the frequency range 8 500-10 680 MHz,

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 SARs in the EESS (active) in the frequency band 9 200-10 400 MHz;

2 studies on the coexistence between SARs operating in the EESS (active) and the radiodetermination service in the frequency band 9 200-10 400 MHz,

invites administrations

to participate actively in the studies and provide the information required for the studies listed in *resolves to invite ITU-R to complete in time for the 2031 world radiocommunication conference* by submitting contributions to ITU-R,

resolves to invite the 2031 world radiocommunication conference

to consider the results of the above ITU-R studies and take actions, as appropriate.