

Agenda Item 1.18

Text of agenda item and accompanying resolution

1.18 to consider studies relating to spectrum needs and potential new allocations to the mobile-satellite service for future development of narrowband mobile-satellite systems, in accordance with Resolution 248 (WRC-19);

RESOLUTION 248 (WRC-19)

Studies relating to spectrum needs and potential new allocations to the mobile satellite service in the frequency bands 1 695-1 710 MHz, 2 010-2 025 MHz, 3 300-3 315 MHz and 3 385-3 400 MHz for future development of narrowband mobile-satellite systems

The World Radiocommunication Conference (Sharm el-Sheikh, 2019),

considering

- a) that a preliminary assessment of the spectrum requirements would suggest a pairing of no more than 5 MHz in uplink and 5 MHz in the downlink, may suffice for the applications of low-data rate systems for the collection of data from, and management of terrestrial devices, in the MSS;
- b) that the frequency bands under consideration 1 695-1 710 MHz, 2 010-2 025 MHz, 3 300-3 315 MHz, 3 385-3 400 MHz are allocated on a primary and secondary basis to the mobile service (MS), fixed service (FS), fixed-satellite service (FSS), radiolocation and meteorological services;
- c) that previous studies only addressed spectrum requirements for the satellite component of IMT-2000 and system beyond IMT-2000 (Report ITU-R M.2077) and spectrum requirements for new broadband mobile satellite service (MSS) applications in the 4-16 GHz range (Reports ITU-R M.2218 and ITU-R M.2221);
- d) that Report ITU-R M.2218 suggests that the operational characteristics of incumbent MSS systems may constrain and effectively hamper the sharing of existing MSS spectrum, resulting in the requirement of additional spectrum for new applications;
- e) that Report ITU-R SA.2312 suggests that MSS bands already allocated above 5 GHz are outside of the inherent size, weight, and power restrictions of small satellites (usually having a mass of less than 100 kg);
- f) that earth and space stations used for the applications of the systems in *considering b*) may include a combination of low power and intermittent transmissions to facilitate spectrum sharing and spectrum requirements,

noting

- a)* the existing MSS allocation and current use of the frequency band 2 010-2 025 MHz, in particular in Region 2;
- b)* that the number of mobile satellite systems using small satellites for the systems described in *considering b)* is growing and the spectrum demand for suitable MSS allocations is increasing;
- c)* the examples, technical characteristics and benefits of such satellites given in Report ITU-R SA.2312;
- d)* the contribution of the applications described in *considering a)*, delivering actionable information, to the promotion of human welfare;
- e)* the insufficient spectrum opportunities for new applications described in *considering a)* to operate in MSS bands below 5 GHz;
- f)* that Recommendation ITU-R SA.1158-3 summarized that narrow-band short duration type of data transmissions in the mobile-satellite service (Earth-to-space) may feasibly share the frequency band 1 670-1 710 MHz with the meteorological-satellite service (space-to-Earth),

recognizing

- a)* that the existing primary allocated services, in the bands considered and adjacent to, shall be protected;
- b)* the need for regulatory certainty regarding the available spectrum for both satellite and earth station design and planning purposes;
- c)* that the studies, envisaged in the *resolves* part of this Resolution, are to be limited to those systems with space stations that have a maximum e.i.r.p. of 27 dBW or less, with a beamwidth of no more than 120 degrees, and earth stations that individually communicate no more than once every 15 minutes, for no more than 4 seconds at a time, with a maximum e.i.r.p. of 7 dBW;
- d)* that some of the frequency bands listed in *resolves b)* are identified for IMT in accordance with Nos. **5.429D**, **5.430A**, **5.431B**, **5.441A** and **5.441B**;
- e)* that the introduction of the applications of the possible new MSS allocation should not impose constraints to other existing allocated primary services in the bands under consideration and adjacent to, operating in accordance with the Radio Regulations,

resolves to invite ITU-R

1 to conduct studies on spectrum and operational requirements as well as system characteristics of low-data rate systems for the collection of data from, and management of,

terrestrial devices in the MSS as described in *considering a)* and limited to the basic characteristics in *recognizing c)*;

2 to conduct sharing and compatibility studies with existing primary services to determine the suitability of new allocations to the MSS, with a view to protecting the primary services, in the following frequency bands and adjacent frequency bands:

- 1 695-1 710 MHz in Region 2,
- 2 010-2 025 MHz in Region 1,
- 3 300-3 315 MHz, 3 385-3 400 MHz in Region 2;

3 to consider possible new primary or secondary allocations, with the necessary technical limitations, taking into account the characteristics described in *recognizing c)*, to the MSS for nonGSO satellites operating low-data rate systems for the collection of data from, and management of, terrestrial devices based on the result of sharing and compatibility studies, while ensuring the protection of existing primary services in those frequency bands, and adjacent bands, without causing undue constraints on their further development,

resolves to invite WRC-23

to determine, on the basis of the studies conducted under the *resolves to invite ITU-R* above, appropriate regulatory actions,

invites administrations

to participate in the studies by submitting contributions to ITU-R.