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 that a pairing of no more than 5 MHz in the 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 mobile-satellite service (MSS);

b) that the frequency bands under consideration, namely 1 695-1 710 MHz, 2 010-2 025 MHz, 3 300-3 315 MHz and 3 385-3 400 MHz, are allocated on a primary or secondary basis to the mobile service, fixed service, mobile-satellite service (MSS), amateur service, radiolocation service and meteorological services, among others;

c) that previous studies only addressed spectrum requirements for the satellite component of International Mobile Telecommunications (IMT) - IMT-2000 and systems beyond IMT-2000 (Report ITU-R M.2077), and spectrum requirements for new broadband MSS applications in the 4-16 GHz frequency 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 a requirement for additional spectrum for new applications;

e) that Report ITU-R SA.2312 suggests that MSS frequency bands already allocated above 5 GHz are not suited to 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 referred to in *considering a)* 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 a)* 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 frequency bands below 5 GHz;

f) that Recommendation ITU-R SA.1158-3 summarized that narrowband short-duration types of data transmissions in the MSS (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 frequency bands considered and adjacent frequency bands 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 under *resolves to invite the ITU Radiocommunication Sector* in this Resolution are to be limited to those systems with space stations that have a maximum equivalent isotropically radiated power (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 to invite the ITU Radiocommunication Sector* 2 are identified for IMT in accordance with No. **5.429D**;

e) that the introduction of the applications of the possible new MSS allocation should not impose constraints on other existing allocated primary services in the frequency bands under consideration and adjacent frequency bands operating in accordance with the Radio Regulations,

resolves to invite the ITU Radiocommunication Sector

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 and 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 non-geostationary satellites operating low data-rate systems for the collection of data from, and management of, terrestrial devices, based on the results of sharing and compatibility studies, while ensuring the protection of existing primary services in those frequency bands and adjacent frequency bands, without causing undue constraints on their further development,

invites the 2023 World Radiocommunication Conference

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

invites administrations

to participate in the studies by submitting contributions to the ITU Radiocommunication Sector.