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RESOLUTION 661 (WRC-19)

Examination of a possible upgrade to primary status of the secondary allocation to the space research service in the frequency band 14.8-15.35 GHz

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

considering

- a) that the frequency band 14.8-15.35 GHz is currently allocated to the fixed and mobile services on a primary basis;
- b) that the frequency band 14.8-15.35 GHz is currently allocated to the space research service (SRS) on a secondary basis;
- c) that the frequency band 15.2-15.35 GHz is currently allocated to the Earth exploration-satellite service (EESS) (passive) and SRS (passive) on a secondary basis;
- d) that the frequency band 15.35-15.4 GHz is currently allocated to the EESS (passive), the radio astronomy service and the SRS (passive) on a primary basis;
- e) that there is a need for broadband communication downlinks in the SRS for the purpose of transmitting future scientific data at high data transmission speeds;
- f) that a number of space agencies are already considering the possibility of using this frequency band for next-generation SRS satellites;
- g) that, due to the small number of expected SRS earth stations that will be deployed worldwide (10-40 stations), coordination between fixed and land mobile communication systems and SRS stations will not impose excessive restrictions on any of the services;
- h) that modern modulation methods together with the use of filters in high-speed data transmission links allow a significant reduction in out-of-band emissions, thereby minimizing possible interference for passive services in adjacent frequency bands;
- i) that SRS operators must have stable regulatory certainty in order to be able to ensure long-term operation of systems in this service of public interest, and that operating on the basis of a secondary allocation conflicts with this objective;
- j) that these space programmes represent long-term effort and investment that span across decades, from the time when the programme is officially decided, through the development period and the launch phase to the time when the corresponding satellites are in operation;
- k) that space agencies are investing resources in the continuation of these programmes, providing subsequent satellites and payloads,

recognizing

- a) that the frequency band 14.8-15.35 GHz is currently used by data relay satellites in inter-satellite links, which permits the establishment of communications with satellites in non-geostationary orbits (non-GSO), including manned flights in the SRS;
- b) that the frequency band 14.8-15.35 GHz is also used by existing high-speed data links from non-GSO satellites within the SRS and is planned for use in future systems;
- c) that these satellites are needed for the operation of telescopes and/or other passive instruments used for measuring such phenomena as the Earth's magnetosphere and solar flares;
- d) that upgrading to primary status the allocation of the frequency band 14.8-15.35 GHz for the SRS will provide certainty for administrations and space agencies participating in satellite space programmes;
- e) that upgrading to primary status the allocation of the frequency band 14.8-15.35 GHz for the SRS should not impose constraints on existing systems of primary services in the frequency band 14.8-15.35 GHz;
- f) that the allocation to passive services mentioned in *considering c)* should be taken into account for protection,

noting

- a) that Recommendations ITU-R M.2068 and ITU-R M.2089 contain characteristics of and protection criteria for systems operating in the land and aeronautical mobile services, respectively, in the frequency range 14.5-15.35 GHz;
- b) that Recommendation ITU-R SA.1626 sets out the conditions for frequency sharing between the SRS (space-to-Earth) and the fixed and mobile services in the frequency band 14.8-15.35 GHz, including power flux-density (pfd) limits for the SRS;
- c) that Recommendation ITU-R SA.510 sets out the conditions for frequency sharing between data relay systems operating in the SRS (space-to-space) and the fixed and mobile services in the frequency band 14.8-15.35 GHz, including pfd limits for the SRS,

resolves to invite the ITU Radiocommunication Sector

- 1 to investigate and identify all relevant scenarios mentioned in *recognizing a) to c)* that need to be considered in compatibility and sharing studies, taking into account the latest relevant ITU Radiocommunication Sector (ITU-R) Recommendations;
- 2 to conduct and complete in time for WRC-23 sharing and compatibility studies in order to determine the feasibility of upgrading the SRS allocation to primary status in the frequency band 14.8-15.35 GHz, with a view to ensuring protection of the primary services referred to in *considering a) and d)* and taking into account *recognizing e)*;
- 3 to determine the technical and regulatory conditions according to the results of the studies mentioned in *resolves to invite the ITU Radiocommunication Sector 2*,

invites administrations

to participate actively in the studies and provide the technical and operational characteristics of the systems involved by submitting contributions to ITU-R,

invites the 2023 World Radiocommunication Conference

to examine, on the basis of the results of studies by the ITU-R, the possibility of upgrading the secondary status of the allocation to the SRS to primary status in the frequency band 14.8-15.35 GHz, taking into account the studies referred to in *resolves to invite the ITU Radiocommunication Sector 2* and the considerations in *resolves to invite the ITU Radiocommunication Sector 3*.