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**Resolution SFCG 17-1R2**

**PROTECTION OF SPACE SCIENCE SERVICES FROM  
TERRESTRIAL SERVICE SYSTEMS IN THE BANDS 2025-2110 MHz  
AND 2200-2290 MHz**

The SFCG,

CONSIDERING

- a) that WARC-92 allocated the bands 2025-2110 MHz and 2200-2290 MHz to the space research, Earth exploration-satellite and space operation services (collectively, the space science services), on a co-primary basis with existing allocations to the fixed and mobile services;
- b) that these international allocations were made in recognition of the critical reliance of space science systems on access to these bands, and the substantial capital investment in the ground-based and space-based infrastructure by the space agencies of countries representing between them more than 80% of the world's population;
- c) that RR No. **5.391** and Recommendation ITU-R SA.1154 stipulates the provisions required to protect space science services from the emissions of mobile service systems in this frequency range, indicates that sharing with certain low density mobile systems is feasible, and states that high population density mobile systems (such as PCS, GMCS, IMT-2000) cannot share these bands with space science systems;
- d) that at WARC-92 sharing between the fixed service and the space science services was considered feasible based on long term successful experience with existing systems and their corresponding density within the shared bands;
- e) that large numbers of fixed service systems have been displaced into these 2 GHz bands to accommodate new fixed wireless access and personal communication systems in the same or adjacent bands;
- f) that ITU-R has drawn up channelization plans in Recommendation ITU-R F.1098 which encompass the 2025-2110 MHz and 2200-2290 MHz bands;

- g) that the investment in compatible fixed and mobile service systems in these bands in both developed and developing countries is significant;
- h) that Recommendations ITU-R F.1247, F.1248, SA.1273, SA.1274, and SA.1275 stipulate the conditions necessary to ensure a stable long-term sharing environment between space science service systems and fixed service systems operating in these frequency bands;
- i) that equipment for fixed wireless access systems is being produced and planned for operation, which is not in compliance with the limits specified in Recommendation ITU-R F.1247

#### RECOGNIZING:

- 1) that all member space agencies of the SFCG rely heavily upon the availability of the 2025-2110 MHz and 2200-2290 MHz bands to conduct their Category A missions, including manned and unmanned missions, fundamental scientific research, observing both the Earth and space environments, and making an expanding contribution to the knowledge base of ecological conditions;
- 2) that the worldwide capital investment of public funds in the ground-based and space-based elements of the communication networks, the launch, tracking, telemetry, command and control facilities, necessary to support both manned and unmanned endeavours in space is in excess of US \$ 70 billion, and is irreversibly dependent on access to these 2 GHz bands;
- 3) that many administrations are, *inter alia*, implementing revenue-producing methods of apportioning the frequency spectrum;
- 4) that deliberate, controlled de-orbiting of large mass spacecraft can best be executed relying on communications systems using frequency bands near 2 GHz which provide all-weather, reliable communications characteristics;

#### RESOLVES

- 1. that member agencies make their respective administrations aware of the difficulties in sharing with proposed terrestrial system implementations, which may vary from country to country, in the bands 2025-2110 MHz and 2200-2290 MHz;
- 2. that member agencies urge their respective administrations to take into account:
  - a) the significant capital investment in both space science and compatible terrestrial service systems in the 2 GHz bands,
  - b) the public safety aspects of the space agencies' responsibility which can be satisfied only through access to these bands.

3. that member agencies urge their administrations to avoid production, certification and operation of equipment not in compliance with the limits specified in Recommendation ITU-R F.1247.
4. that member agencies urge their respective administrations to take all these factors into account in balancing the public interest when trying to identify viable blocks of spectrum as revenue-producing allocations