

RESOLUTION 253 (WRC-23)

Studies on possible new allocations to the mobile-satellite service for direct connectivity between space stations and International Mobile Telecommunications (IMT) user equipment to complement terrestrial IMT network coverage

The World Radiocommunication Conference (Dubai, 2023),

considering

- a)* that International Mobile Telecommunications (IMT) systems support terrestrial and satellite components, including the capability to enable direct communication to IMT user equipment;
- b)* that the mobile-satellite system may provide alternative network resilience and mobile connectivity to underserved communities and in rural and remote areas, in particular in the event of network failures of terrestrial IMT and natural disasters;
- c)* that the expected usage of the mobile-satellite service (MSS) in IMT frequency bands in specific service areas is based on the authorization by administrations within the territory under their jurisdiction,

noting

- a)* that Report ITU-R M.2077-0 indicated a shortfall of spectrum available for the satellite component of IMT and systems beyond IMT-2000 of more than 144 MHz (space-to-Earth) and more than 19 MHz (Earth-to-space);
- b)* that Report ITU-R M.2218-0 estimated the spectrum requirement in the frequency range 4-16 GHz for MSS broadband applications between 240 MHz and 355 MHz;
- c)* that Report ITU-R M.2514-0, on vision, requirements and evaluation guidelines for satellite radio interfaces of IMT-2020, defined the minimum technical requirements for satellite systems which can be part of the IMT-2020 ecosystem, including bandwidth requirements;
- d)* that Report ITU-R M.2041-0 addressed sharing and adjacent band compatibility in the 2.5 GHz band between the terrestrial and satellite components of IMT-2000;
- e)* that Recommendation ITU-R M.1182-1 considered the integration of terrestrial and satellite mobile communication systems;
- f)* that Recommendation ITU-R M.1036-6 addressed frequency arrangements for the implementation of the terrestrial component of IMT in the bands identified for IMT in the Radio Regulations;

RES253-2

- g) that Recommendation ITU-R RA.769-2 contains the protection criteria used for radio astronomical measurements;
- h) that Recommendation ITU-R RA.1513-2 provides the acceptable levels of data loss to radio astronomy observations and percentage-of-time criteria resulting from degradation by interference for frequency bands allocated to the radio astronomy service (RAS) on a primary basis;
- i) that Recommendation ITU-R M.1808-1 also applies for the studies of frequency bands allocated for the mobile service below 960 MHz;
- j) that Resolution **646 (Rev.WRC-19)** also applies in frequency bands below 960 MHz;
- k) that the GE06 Agreement applies for countries in Region 1, except Mongolia, and including the Islamic Republic of Iran,

recognizing

- a) that the growth in demand for mobile-satellite systems is making it difficult to sustain MSS services on a long-term basis in the existing bands;
- b) that MSS systems may provide direct connectivity between space stations and IMT user equipment to complement terrestrial IMT network coverage;
- c) that new allocations to the MSS would be consistent with the International Telecommunication Union's objective of promoting access to telecommunication services, particularly in remote and rural areas;
- d) that there is a need to concentrate the studies on the frequency bands allocated to the mobile service on a primary basis and used for IMT or identified for IMT by country footnotes or on a regional or multi-regional basis;
- e) that for the determination of the incumbent services, the relevant provisions of the Radio Regulations in force apply;
- f) that unwanted emissions in the spurious domain may be considered regarding RAS frequency allocations,

resolves to invite the ITU Radiocommunication Sector to complete in time for the 2027 world radiocommunication conference

1 studies on possible allocations to the MSS in the frequency range between 694/698 MHz and 2.7 GHz, taking into account the IMT frequency arrangements addressed in the most recent version of Recommendation ITU-R M.1036;

2 studies on spectrum requirements and on technical, operational and regulatory matters related to the implementation of the mobile-satellite service for direct connectivity to the IMT user equipment to complement the terrestrial IMT network coverage,

further resolves

1 to conduct studies on sharing and compatibility between incumbent services, including in adjacent frequency bands, ensuring the protection of incumbent services in accordance with the Radio Regulations;

2 to study possible technical and operational measures to ensure that the stations in the MSS do not cause harmful interference to, or claim protection from, stations operating in the mobile service,

invites administrations

to participate actively in the studies and provide the information required for the studies listed in *resolves to invite the ITU Radiocommunication Sector to complete in time for the 2027 world radiocommunication conference* by submitting contributions to the ITU Radiocommunication Sector,

invites the 2027 world radiocommunication conference

to consider, based on the results of studies, the appropriate regulatory actions, including possible new allocations to the MSS for direct connectivity between space stations and IMT user equipment to complement terrestrial IMT network coverage.