QUESTION ITU-R 257-2/5

**Technical and operational characteristics of stations in the fixed service  
in the frequency range 275-1 000 GHz**

(2015-2019-2023)

The ITU Radiocommunication Assembly,

considering

*a)* that there is a growing demand for high speed and large capacity radiocommunications having data rates of several tens of Gbit/s to sometime over 100 Gbit/s for fixed service systems;

*b)* that due to progress in the recent terahertz technologies, the integrated devices and circuits operating above 275 GHz can achieve various sophisticated applications;

*c)* that the above devices and circuits will be able to provide such high speed and large capacity radiocommunications for fixed service systems;

*d)* that the traffic demands for backhaul and fronthaul for mobile systems are increasing due to mobile broadband communications such as IMT-Advanced, IMT-2020 and future IMT;

*e)* that certain parts of the spectrum in the frequency range 275-1 000 GHz are identified in No. **5.565** for passive services in the Radio Regulations;

*f)* that certain parts of spectrum in the frequency range 275-450 GHz are identified in No. **5.564A** for use of fixed and land-mobile service applications, where no specific conditions are necessary to protect Earth exploration-satellite service (passive);

*g)* that the use of frequency bands of 275-450 GHz by fixed service applications does not preclude use by, and does not establish priority over, any other applications of radio services;

*h)* that the technical and operational characteristics of the fixed service need to be specified for sharing and compatibility studies with the passive service applications indicated in *considering f)*,

noting

*a)* that Report ITU-R SM.2352 provides the technology trends of active services in the frequency range 275-3 000 GHz;

*b)* that Report ITU-R F.2323 provides guidance on the future development of the fixed service operating in the millimetric-wave band;

*c)* that Report ITU-R RA.2189 initiated sharing studies between radio astronomy service and active services in the frequency range 275-3 000 GHz;

*d)* that Report ITU-R F.2416 provides technical and operational characteristics and applications of the point-to-point fixed service operating in the frequency band 275-450 GHz;

*e)* that Report ITU-R M.2417 provides technical and operational characteristics of land‑mobile service applications in the frequency range 275-450 GHz;

*f)* that Report ITU-R RS.2431 provides the technical and operational characteristics of Earth Observation (passive) sensors in the frequency range 275-450 GHz;

*g)* that Report ITU-R SM.2450 provides sharing and compatibility studies between in the land-mobile, fixed and passive services in the frequency range 275-450 GHz,

decides that the following Question should be studied

What are the technical and operational characteristics of the fixed service in the frequency range 275‑1 000 GHz?

further decides

1 that sharing studies between the fixed and passive services, as well as the fixed and other active services should be carried out taking into account the characteristics mentioned in *decides*;

2 that the results of studies in the frequency range 275-1 000 GHz should be brought to the attention of the other Study Groups;

3 that the results of the above studies should be included in one or more Recommendations, Reports, or Handbooks;

4 that the above studies should be completed by 2027.

Category: S2