

RESOLUTION 245 (WRC-19)

**Studies on frequency-related matters for the terrestrial component of
International Mobile Telecommunications identification in the frequency bands
3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz,
7 025-7 125 MHz and 10.0-10.5 GHz**

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

considering

- a)* that International Mobile Telecommunications (IMT) is intended to provide telecommunication services on a worldwide scale, regardless of location and type of network or terminal;
- b)* that IMT systems have contributed to global economic and social development;
- c)* that IMT systems are now being evolved to provide diverse usage scenarios such as enhanced mobile broadband, massive machine-type communications and ultra-reliable and low-latency communications, and applications including fixed broadband;
- d)* that ultra-low latency and very high bit-rate applications of IMT will require contiguous blocks of spectrum for use by administrations wishing to implement IMT;
- e)* that, compared with lower and higher frequency bands, the mid-band spectrum can provide better balance for meeting needs for both coverage and capacity;
- f)* that there is a need to continually take advantage of technological developments in order to increase the efficient use of spectrum and facilitate spectrum access;
- g)* that the properties of higher frequency bands, such as short wavelength, would better enable the use of advanced antenna systems, including multiple-input and multiple-output (MIMO) and beam-forming techniques, in supporting enhanced broadband;
- h)* that the ITU Telecommunication Standardization Sector has been working on network standardization for IMT-2020 and beyond;
- i)* that adequate and timely availability of spectrum and corresponding regulatory provisions are essential to support the future development of IMT;
- j)* that harmonized worldwide frequency bands and harmonized frequency arrangements for IMT are highly desirable in order to achieve global roaming and the benefits of economies of scale;
- k)* that identification of frequency bands as in *considering e)* for IMT may change the sharing situation regarding applications of all services to which the frequency band is already allocated, and may require additional regulatory actions;
- l)* the need to protect existing services and to allow for their continued development when considering frequency bands for possible additional allocations to any service,

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noting

- a) that Resolution ITU-R 65 addresses the principles for the process of development of IMT for 2020 and beyond;
- b) that IMT encompasses IMT-2000, IMT-Advanced and IMT-2020 collectively, as described in Resolution ITU-R 56-2;
- c) that Question ITU-R 77-8/5 considers the needs of developing countries in the development and implementation of IMT;
- d) that Question ITU-R 229/5 seeks to address the further development of IMT;
- e) that Question ITU-R 262/5 addresses the study of usage of IMT systems for specific applications;
- f) Recommendation ITU-R M.2083, on the framework and objectives of the future development of IMT for 2020 and beyond;
- g) Recommendation ITU-R M.2101, on modelling and simulation of IMT networks and systems for use in sharing and compatibility studies;
- h) Recommendation ITU-R P.2108, on prediction of clutter loss;
- i) that Report ITU-R M.2320 addresses future technology trends of terrestrial IMT systems;
- j) that Report ITU-R M.2370 analyses trends impacting future IMT traffic growth beyond the year 2020 and estimates global traffic demand for the period 2020 to 2030;
- k) Report ITU-R M.2376, on technical feasibility of IMT in the frequency bands above 6 GHz;
- l) Report ITU-R M.2410, on minimum requirements related to technical performance for IMT-2020 radio interface(s);
- m) Report ITU-R M.2481, on in-band and adjacent band coexistence and compatibility studies between IMT systems in the frequency band 3 300-3 400 MHz and radiolocation systems in the frequency band 3 100-3 400 MHz,

recognizing

- a) that there is a lead time between the allocation of frequency bands by world radiocommunication conferences and the deployment of systems in those bands, and that timely availability of wide and contiguous blocks of spectrum is therefore important to support the development of IMT;
- b) that in order to ensure the future development of IMT it is important to ensure the timely identification of additional spectrum;
- c) that any identification of frequency bands for IMT should take into account the use of the frequency bands by other services and the evolving needs of these services,

resolves to invite the ITU Radiocommunication Sector

1 to conduct and complete in time for WRC-23 the appropriate studies of technical, operational and regulatory issues pertaining to the possible use of the terrestrial component of IMT in the frequency bands listed in *resolves to invite the ITU Radiocommunication Sector 2*, taking into account:

- evolving needs to meet emerging demand for IMT;
- technical and operational characteristics of terrestrial IMT systems that would operate in these specific frequency bands, including the evolution of IMT through advances in technology and spectrally efficient techniques;
- the deployment scenarios envisaged for IMT systems and the related requirements of balanced coverage and capacity;
- the needs of developing countries;
- the time-frame in which spectrum would be needed;

2 to conduct and complete in time for WRC-23 the sharing and compatibility studies¹, with a view to ensuring the protection of services to which the frequency band is allocated on a primary basis, without imposing additional regulatory or technical constraints on those services, and also, as appropriate, on services in adjacent bands, for the frequency bands:

- 3 600-3 800 MHz and 3 300-3 400 MHz (Region 2);
- 3 300-3 400 MHz (amend footnote in Region 1);
- 7 025-7 125 MHz (globally);
- 6 425-7 025 MHz (Region 1);
- 10.0-10.5 GHz (Region 2),

resolves

1 to invite the first session of the Conference Preparatory Meeting for WRC-23 to define the date by which technical and operational characteristics needed for sharing and compatibility studies are to be available to ensure that studies referred to in *resolves to invite the ITU Radiocommunication Sector* can be completed in time for consideration at WRC-23;

2 to invite WRC-23 to consider, based on the results of the above studies, additional spectrum allocations to the mobile service on a primary basis and to consider identification of frequency bands for the terrestrial component of IMT, the frequency bands to be considered being limited to part or all of the frequency bands listed in *resolves to invite the ITU Radiocommunication Sector 2*,

invites administrations

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

¹ Including studies with respect to services in adjacent bands, as appropriate.

