|  |  |
| --- | --- |
| **World Radiocommunication Conference (WRC-19) Sharm el-Sheikh, Egypt, 28 October – 22 November 2019** |  |
|  |  |
|  |  |
| PLENARY MEETING | **Addendum 1 to Document 16(Add.13)-E** |
|  | **4 October 2019** |
|  | **Original: English** |
|  | |
| European Common Proposals | |
| Proposals for the work of the conference | |
|  | |
| Agenda item 1.13 | |

1.13 to consider identification of frequency bands for the future development of International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **238 (WRC-15)**;

**Part 1 – Frequency band 24.25-27.5 GHz**

Introduction

This document presents the European Common Proposal for the frequency band 24.25-27.5 GHz under WRC-19 agenda item 1.13.

Proposals

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations  
(See No. 2.1)

MOD EUR/16A13A1/1#49833

22-24.75 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 24.25-24.45  FIXED  MOBILE ADD 5.A113 MOD 5.338A | 24.25-24.45  RADIONAVIGATION  MOBILE ADD 5.A113 MOD 5.338A | 24.25-24.45  FIXED  MOBILE ADD 5.A113 MOD 5.338A  RADIONAVIGATION |
| 24.45-24.65  FIXED  INTER-SATELLITE  MOBILE ADD 5.A113 MOD 5.338A | 24.45-24.65  INTER-SATELLITE  MOBILE ADD 5.A113 MOD 5.338A  RADIONAVIGATION | 24.45-24.65  FIXED  INTER-SATELLITE  MOBILE ADD 5.A113 MOD 5.338A  RADIONAVIGATION |
|  | 5.533 | 5.533 |
| 24.65-24.75  FIXED  FIXED-SATELLITE (Earth-to-space) 5.532B  INTER-SATELLITE  MOBILE ADD 5.A113 MOD 5.338A | 24.65-24.75  INTER-SATELLITE  MOBILE ADD 5.A113 MOD 5.338A  RADIOLOCATION- SATELLITE (Earth-to-space) | 24.65-24.75  FIXED  FIXED-SATELLITE (Earth-to-space) 5.532B  INTER-SATELLITE  MOBILE ADD 5.A113 MOD 5.338A |
|  |  | 5.533 |

**Reasons:** CEPT supports the 24.25-27.5 GHz frequency band for worldwide harmonisation by an IMT identification under certain conditions as shown in the ECC Decision (18)06 and in Resolution **[EUR-A113-IMT 26 GHZ] (WRC-19)**.

MOD EUR/16A13A1/2#49834

24.75-29.9 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 24.75-25.25  FIXED  FIXED-SATELLITE (Earth-to-space) 5.532B  MOBILEADD 5.A113 MOD 5.338A | 24.75-25.25  FIXED-SATELLITE (Earth-to-space) 5.535  MOBILEADD 5.A113 MOD 5.338A | 24.75-25.25  FIXED  FIXED-SATELLITE (Earth-to-space) 5.535  MOBILE ADD 5.A113 MOD 5.338A |
| 25.25-25.5 FIXED  INTER-SATELLITE 5.536  MOBILE ADD 5.A113 MOD 5.338A  Standard frequency and time signal-satellite (Earth-to-space) | | |
| 25.5-27EARTH EXPLORATION-SATELLITE (space-to Earth) 5.536B  FIXED  INTER-SATELLITE 5.536  MOBILE ADD 5.A113 MOD 5.338A  SPACE RESEARCH (space-to-Earth) 5.536C  Standard frequency and time signal-satellite (Earth-to-space)  MOD 5.536A | | |
| 27-27.5  FIXED  INTER-SATELLITE 5.536  MOBILE ADD 5.A113 MOD 5.338A | 27-27.5  FIXED  FIXED-SATELLITE (Earth-to-space)  INTER-SATELLITE 5.536 5.537  MOBILE ADD 5.A113 MOD 5.338A | |

**Reasons:** CEPT supports the 24.25-27.5 GHz frequency band for worldwide harmonisation by an IMT identification under certain conditions as shown in the ECC Decision (18)06 and in Resolution **[EUR-A113-IMT 26 GHZ] (WRC-19)**.

ADD EUR/16A13A1/3#49836

5.A113The frequency band 24.25-27.5 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Resolutions **[EUR-A113-IMT 26 GHZ] (WRC-19)** and **750 (Rev.WRC-19)** apply.     (WRC‑19)

**Reasons:** CEPT supports the 24.25-27.5 GHz frequency band for worldwide harmonisation by an IMT identification under certain conditions as shown in the ECC Decision (18)06 and in Resolutions **[EUR-A113-IMT 26 GHZ] (WRC-19)** and **750 (Rev.WRC-19)**.

MOD EUR/16A13A1/4#49900

5.338AIn the frequency bands 1 350-1 400 MHz, 1 427-1 452 MHz, 22.55-23.55 GHz, 24.25‑27.5 GHz, 30-31.3 GHz, 49.7‑50.2 GHz, 50.4-50.9 GHz, 51.4-52.6 GHz, 81-86 GHz and 92-94 GHz, Resolution **750 (Rev.WRC‑19)** applies.     (WRC‑19)

MOD EUR/16A13A1/5#49842

5.536A Administrations operating earth stations in the Earth exploration-satellite service or the space research service shall not claim protection from stations in the fixed and mobile services operated by other administrations. In addition, earth stations in the Earth exploration-satellite service or in the space research service should be operated taking into account the most recent version of Recommendation ITU‑R SA.1862. See also Resolution **[EUR-A113-IMT 26 GHZ] (WRC-19)**.     (WRC‑19)

**Reasons:** Resolutions **[EUR-A113-IMT 26 GHZ] (WRC-19)** contains elements concerning the use of the band for EESS/SRS Earth stations.

ADD EUR/16A13A1/6#49920

DRAFT NEW RESOLUTION [eur-a113-imt 26 GHZ] (WRC-19)

International Mobile Telecommunications in the   
frequency band 24.25-27.5 GHz

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

considering

*a)* that International Mobile Telecommunications (IMT), including IMT-2000, IMT‑Advanced and IMT‑2020, is intended to provide telecommunication services on a worldwide scale, regardless of location and type of network or terminal;

*b)* that harmonized worldwide bands and harmonized frequency arrangements for IMT are highly desirable in order to achieve global roaming and the benefits of economies of scale;

*c)* that adequate and timely availability of spectrum and supporting regulatory provisions are essential to realize the objectives in Recommendation ITU‑R M.2083;

*d)* that IMT systems are now being evolved to provide diverse usage scenarios and applications such as enhanced mobile broadband, massive machine-type communications and ultra-reliable and low-latency communications;

*e)* that ultra-low latency and very high bit rate applications of IMT will require larger contiguous blocks of spectrum than those available in frequency bands that are currently identified for use by administrations wishing to implement IMT;

*f)* that the properties of higher frequency bands, such as shorter wavelength, would better enable the use of advanced antenna systems including Multiple Input, Multiple Output (MIMO) and beam-forming techniques in supporting enhanced broadband;

*g)* that ITU-R has studied, in preparation of WRC-19, sharing and compatibility with services allocated in the frequency bands 23.6-24.0 GHz and 24.25-27.5 GHz, based on characteristics available at that time;

*h)* that identification of frequency bands allocated to mobile service on a co-primary basis for IMT may change the sharing situation regarding applications of services to which the frequency band is already allocated, and may require additional regulatory actions;

*i)* the need to protect existing services and to allow for their continued development when considering frequency bands for possible additional allocations to any service;

*j)* that the pointing elevation of the main beam (electrical and mechanical) should normally be below the horizon for outdoor base stations;

*k)* that the coverage of outdoor hotspot has been assumed in sharing studies to be achieved with the deployment of base stations communicating with terminals on the ground and a very limited number of indoor terminals with positive elevation, resulting in an elevation of the main beam of outdoor base stations normally below the horizon, thus with high discrimination towards the satellites,

noting

Recommendation ITU‑R M.2083 “IMT Vision – Framework and overall objectives of the future development of IMT for 2020 and beyond”,

recognizing

*a)* that the identification of a frequency band for IMT does not establish priority in the Radio Regulations and does not preclude the use of the frequency band by any application of the services to which it is allocated;

*b)* that Resolution **750 (Rev.WRC-19)** establishes limits on unwanted emissions in the frequency band 23.6-24 GHz from IMT base stations and IMT mobile stations within the 24.25‑27.5 GHz frequency band;

*c)* that spurious emission limits of Recommendation ITU-R SM.329 Category B (−60 dB(W/MHz)) are sufficient to protect the EESS (passive) in the bands 50.2-50.4 GHz and 52.6-54.25 GHz from the second harmonic of IMT base station emissions in the 24.25-27.5 GHz frequency band;

*d)* that sharing studies between IMT and the Earth exploration-satellite service or the space research service show that separation distances of 7 km between IMT BS and Earth exploration-satellite service earth stations and 92 km between IMT BS and space research service earth stations may be necessary when the IMT BS e.i.r.p. density is set to 48 dBm/200 MHz;

*e)* Resolution **176 (Rev. Dubai, 2018)** of the Plenipotentiary Conference on measurement and assessment concerns related to human exposure to electromagnetic fields,

resolves

1 that administrations wishing to implement IMT consider the use of frequency band 24.25-27.5 GHz identified for IMT in **No. 5.A113**, and the benefits of harmonized utilization of the spectrum for the terrestrial component of IMT taking into account the latest relevant ITU-R Recommendations,

2 that administrations shall apply the following condition for the frequency band 24.25‑27.5 GHz:

When deploying outdoor base stations, it shall be ensured that each antenna normally[[1]](#footnote-1)1 transmits only with the main beam pointing below the horizon and the antenna shall have mechanical pointing below the horizon except when the base station is only receiving,

invites administrations

1to adopt provisions to protect other services from IMT networks and to ensure the possibility of deploying future SRS/EESS earth stations;

2to adopt provisions to ensure the possibility of deploying future FSS earth stations,

encourages administrations

1 to consider not to exercise their rights according to No. **5.536A** with regard to IMT stations in the mobile service in particular with an e.i.r.p. spectral density higher than 48 dBm/200 MHz;

2 when deploying earth stations in the Earth exploration-satellite service or the space research service, to consider installing them at a distance from the border of their territory larger than 7 km for Earth exploration-satellite service and larger than 92 km for space research service,

invites ITU‑R

1 to develop harmonized frequency arrangements to facilitate IMT deployment in the frequency band 24.25-27.5 GHz, taking into account the results of sharing and compatibility studies;

2to develop an ITU-R Recommendation to assist administrations in protecting existing and future SRS/EESS earth stations operating in the frequency band 25.5‑27 GHz;

3to develop an ITU-R Recommendation to assist administrations in ensuring the coexistence between existing and future FSS earth stations and IMT operating within the frequency band 24.25‑27.5 GHz;

4 to update existing ITU-R Recommendations or develop a new ITU-R Recommendation, as appropriate, to provide information and assistance to the administrations on possible coordination and protection measures for the radio astronomy service in the frequency band 23.6-24 GHz from the IMT deployment;

5 to regularly review the impact of the evolution of IMT technical and operational characteristics (including deployment and base-station density) on sharing and compatibility with other services (e.g. space services) and, as necessary, to take into account the results of these reviews in the development or revision of ITU‑R Recommendations/Reports, e.g. on IMT characteristics,

instructs the Director of the Radiocommunication Bureau

to bring this Resolution to the attention of relevant international organizations.

**Reasons:** CEPT supports the frequency band 24.25-27.5 GHz for worldwide harmonization by an IMT identification under certain conditions as shown in the above Resolution **[EUR-A113-IMT 26 GHZ] (WRC-19)**. Specific values are derived from studies in ITU-R TG 5/1.

MOD EUR/16A13A1/7

RESOLUTION 750 (Rev.WRC‑19)

Compatibility between the Earth exploration-satellite service (passive) and relevant active services

The World Radiocommunication Conference (Sharm el-Sheikh, 2019

...

resolves

1 that unwanted emissions of stations brought into use in the frequency bands and services listed in Table 1‑1 below shall not exceed the corresponding limits in that table, subject to the specified conditions;

...

TABLE 1-1

|  |  |  |  |
| --- | --- | --- | --- |
| EESS (passive) band | Active service band | Active service | Limits of unwanted emission power from active service stations in a specified bandwidth within the EESS (passive) band1 |
| ... | ... | ... | ... |
| 23.6-24.0 GHz | 22.55-23.55 GHz | Inter-satellite | −36 dBW in any 200 MHz of the EESS (passive) band for non-geostationary (non-GSO) inter-satellite service (ISS) systems for which complete advance publication information is received by the Bureau before 1 January 2020, and −46 dBW in any 200 MHz of the EESS (passive) band for non-GSO ISS systems for which complete advance publication information is received by the Bureau on or after 1 January 2020 |
| 23.6-24.0 GHz | 24.25- 27.5 GHz | Mobile | −42 dBW Total Radiated Power in any 200 MHz in the EESS (passive) band for IMT base stations  −38 dBW Total Radiated Power in any 200 MHz in the EESS (passive) band for IMT mobile stations |
| ... | ... | ... | ... |
| 1 The unwanted emission power level is to be understood here as the level measured at the antenna port, unless specified as Total Radiated Power.  ... | | | |

**Reasons:** CEPT supports the unwanted emission limits of −42 dBW/200 MHz Total Radiated Power (TRP) for base stations and −38 dBW/200 MHz TRP for mobile terminals, into the 23.6‑24 GHz frequency band, to be included as mandatory limits in Resolution **750 (Rev.WRC‑19)**.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 1 With reference to *considering k)* it is assumed that only a very limited number of indoor terminals with positive elevation will be communicating with base stations. [↑](#footnote-ref-1)