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| **World Radiocommunication Conference (WRC-19) Sharm el-Sheikh, Egypt, 28 October – 22 November 2019** |  |
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| PLENARY MEETING | **Addendum 1 to Document 24(Add.13)-E** |
|  | **20 September 2019** |
|  | **Original: English** |
|  | |
| Asia-Pacific Telecommunity 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 APT Common Proposals for the frequency band 24.25-27.5 GHz under WRC-19 agenda item 1.13.

Proposals

APT Members support identifying the 24.25-27.5 GHz frequency band for IMT globally through Method A2 together with a new WRC Resolution.

In principle, APT Members support Alternative 2 under Method A2. However, it may be subject to the regulatory provisions to be specified in the new WRC Resolution associated with Condition A2e.

In addition, APT Members have the following views on Options under the respective Conditions for Method A2 contained in the CPM Report. It should be noted that APT Members are still investigating the Options to be selected for some of the Conditions.

APT Views on Options under the respective Conditions for Method A2

| **Conditions** | | **Supported Option** |
| --- | --- | --- |
| A2a | Protection measures for the EESS (passive) in the 23.6-24 GHz frequency band | 1 |
| A2b | Protection measures for the EESS (passive) in the 50.2-50.4 GHz and 52.6-54.25 GHz frequency bands | 2 |
| A2c | Protection measures for earth stations in the SRS/EESS (25.5-27 GHz (space-to-Earth)) | To be developed |
| A2d | Measures related to transmitting earth stations in the FSS (Earth-to-space) at known locations | To be developed |
| A2e | Protection measures for the ISS and FSS (Earth-to-space) receiving space stations | To be developed |
| A2f | Protection measures for the RAS (23.6-24 GHz) | To be developed |
| A2g | Protection measures for multiple services | To be developed |

ARTICLE 5

Frequency allocations

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

MOD ACP/24A13A1/1

5.338A In the frequency bands 1 350-1 400 MHz, 1 427-1 452 MHz, 22.55-23.55 GHz, 24.25-[TBD] 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)

**Reasons:** For the protection measures for the EESS (passive) in the frequency band 23.6-24 GHz, APT Members support Option 1 under Condition A2a in the CPM Report. APT Members are still investigating the active service band to be specified in Resolution **750 (Rev.WRC-19)**.

MOD ACP/24A13A1/2#49833

22-24.75 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 24.25-24.45  FIXED  MOBILE except aeronautical mobile ADD 5.A113  MOD 5.338A | 24.25-24.45  MOBILE except aeronautical mobile ADD 5.A113  MOD 5.338A  RADIONAVIGATION | 24.25-24.45  FIXED  MOBILE ADD 5.A113  MOD 5.338A  RADIONAVIGATION |
| 24.45-24.65  FIXED  INTER-SATELLITE  MOBILE except aeronautical mobile ADD 5.A113  MOD 5.338A | 24.45-24.65  INTER-SATELLITE  MOBILE except aeronautical 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 except aeronautical mobile ADD 5.A113  MOD 5.338A | 24.65-24.75  INTER-SATELLITE  MOBILE except aeronautical 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:** APT Members support allocating the 24.25-25.25 GHz frequency band to the mobile service (except aeronautical mobile) on a primary basis in Regions 1 and 2 and identifying the 24.25-27.5 GHz frequency band for the terrestrial component of IMT globally. “MOD **5.338A**” is only applicable to the frequency band contained in the active service band of Resolution **750 (Rev.WRC-19)**, which is still under investigation by APT Members.

MOD ACP/24A13A1/3#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  MOBILE except aeronautical mobileADD 5.A113  MOD 5.338A | 24.75-25.25  FIXED-SATELLITE (Earth-to-space) 5.535  MOBILE except aeronautical mobileADD 5.A113  MOD 5.338A | 24.75-25.25  FIXED  FIXED-SATELLITE (Earth-to-space) 5.535  MOBILEADD 5.A113  MOD 5.338A |
| 25.25-25.5 FIXED  INTER-SATELLITE 5.536  MOBILEADD 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  MOBILEADD 5.A113 MOD 5.338A  SPACE RESEARCH (space-to-Earth) 5.536C  Standard frequency and time signal-satellite (Earth-to-space)  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:** APT Members support allocating the 24.25-25.25 GHz frequency band to the mobile service (except aeronautical mobile) on a primary basis in Regions 1 and 2 and identifying the 24.25-27.5 GHz frequency band for the terrestrial component of IMT globally. “MOD **5.338A**” is only applicable to the frequency band contained in the active service band of Resolution **750 (Rev.WRC-19)**, which is still under investigation by APT Members.

ADD ACP/24A13A1/4#49836

5.A113 The 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 they are allocated and does not establish priority in the Radio Regulations. Resolution **[ACP-A113-IMT 26 GHZ] (WRC‑19)** applies.     (WRC‑19)

**Reasons:** APT Members support identifying the 24.25-27.5 GHz frequency band for IMT globally through Method A2 together with a new WRC Resolution. In principle, APT Members support Alternative 2 under Method A2. However, it may be subject to the regulatory provisions to be specified in the new WRC Resolution associated with Condition A2e.

MOD ACP/24A13A1/5

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;

2 to urge administrations to take all reasonable steps to ensure that unwanted emissions of active service stations in the frequency bands and services listed in Table 1‑2 below do not exceed the recommended maximum levels contained in that table, noting that EESS (passive) sensors provide worldwide measurements that benefit all countries, even if these sensors are not operated by their country;

3 that the Radiocommunication Bureau shall not make any examination or finding with respect to compliance with this Resolution under either Article **9** or **11**.

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) band**1 | |
| … |  |  |  | |
| 23.6-24.0 GHz | 24.25-[TBD] GHz | Mobile | [TBD] dBW in the 200 MHz of the EESS (passive) band for IMT base stations5  [TBD] dBW in the 200 MHz of the EESS (passive) band for IMT mobile stations5 | |
| 1 The unwanted emission power level is to be understood here as the level measured at the antenna port, unless specified in terms of total radiated power.  …  5 The unwanted emission power level is measured by total radiated power (TRP). The TRP is to be understood here as the integral of the power transmitted in different directions over the entire radiation sphere. | | | | |
| … | | | |

**Reasons:** For the protection measures for the EESS (passive) in the 23.6-24 GHz frequency band, APT Members support Option 1 under Condition A2a. As for the TBD values, APT Members are still investigating.

ADD ACP/24A13A1/6#49920

DRAFT NEW RESOLUTION [acp-A113-IMT 26 GHZ] (WRC-19)

International Mobile Telecommunications   
in 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 the ITU vision of global mobile access;

*b)* 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;

*c)* that the evolution of IMT is being studied within ITU‑R;

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

*e)* 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;

*f)* 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;

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

*h)* that spurious emission limits of Recommendation ITU‑R SM.329 Category B (−60 dB(W/MHz)) are sufficient to protect the EESS (passive ) within 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 band,

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-[TBD] GHz frequency band,

resolves

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,

invites ITU‑R

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.

**Reasons:** APT Members support the identification of the frequency band 24.25-27.5 GHz for IMT together with the conditions shown in the above new WRC Resolution. It should be noted that APT Members are still investigating the options to be selected for some of the Conditions in the CPM Report, and additional provisions may be required in this Resolution.

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