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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| PLENARY MEETING | **Addendum 1 to Document 9(Add.1)-E** |
|  | **24 June 2015** |
|  | **Original: English** |
|  | |
| European Common Proposals | |
| Proposals for the work of the conference | |
|  | |
| Agenda item 1.1 | |

1.1 to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution **233 (WRC‑12)**;

European Proposals for identification of bands for IMT

1 427-1 518 MHz

Introduction

The frequency band 1 427-1 518 MHz is already allocated worldwide to the mobile service and provides a good opportunity for worldwide harmonization of contiguous spectrum for IMT. In many countries, this range could be made available for IMT applications in the medium or long term:

– The frequency band 1 452-1 492 MHz is already included in 3GPP specifications and Europe has designated it for IMT supplemental downlink. This band has remained almost unused in a large part of the world although some systems in the broadcasting or broadcasting-satellite services have been deployed.

– This provides a future possible option for those administrations who wish to consider IMT use in this band, taking into account the requirements and uses of existing services for the frequency bands 1 427-1 452 MHz and 1 492-1 518 MHz.

Europe therefore propose to identify the frequency band 1 427-1 518 MHz for worldwide harmonization for IMT.

In addition, Europe proposes that, in order to facilitate the coexistence between IMT applications within the mobile service and the broadcasting-satellite service as well as to provide a long-term stable regulatory situation in the frequency band 1 452-1 492 MHz, the current regulatory procedures governing the relation between the broadcasting-satellite service and terrestrial services be modified by inserting a pfd value of –113 dBW/(m²⋅MHz) in RR Article 21. Countries wishing to continue to apply the coordination procedure of RR No. 9.11 with respect to their terrestrial services because of more stringent protection requirements (e.g. in order to protect aeronautical telemetry systems) would be able to do so through a consequential modification of RR Appendix 5.

Europe proposes that, in order to facilitate adjacent band compatibility between MSS earth stations in the frequency band 1 518-1 525 MHz and IMT in the frequency band 1 492-1 518 MHz, the ITU‑R produce a Recommendation. An amendment to Resolution 223 (WRC-12) is attached which invites the ITU-R to produce this.

Europe also proposes to ensure the protection of the passive band 1 400-1 427 MHz by imposing in an updated version of Resolution 750 (Rev.WRC-12) mandatory limits for unwanted emissions in the 1 400-1 427 MHz frequency band for both mobile stations (user equipment) and base stations operating in the frequency band 1 427-1 452 MHz.

Finally, Europe is of the view that no regulatory measures shall be adopted by WRC-15 in Region 1 concerning sharing between the aeronautical mobile and land mobile services. Cross-border compatibility between systems in the land mobile service, including IMT applications, and aeronautical telemetry systems operated in countries listed in RR No. 5.342 is and will continue to be addressed through bilateral coordination.

Proposals

ARTICLE 5

Frequency allocations

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

MOD EUR/9A1A1/1

1 300-1 525 MHz

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Allocation to services | | | | |
| Region 1 | Region 2 | | Region 3 | |
| 1 427-1 429 SPACE OPERATION (Earth-to-space)  FIXED  MOBILE except aeronautical mobile ADD 5.A11  MOD 5.338A 5.341 | | | | |
| 1 429-1 452  FIXED  MOBILE except aeronautical mobile ADD 5.A11  MOD 5.338A 5.341 5.342 | | 1 429-1 452  FIXED  MOBILE 5.343 ADD 5.A11  MOD 5.338A 5.341 | | |
| 1 452-1 492  FIXED  MOBILE except aeronautical mobile ADD 5.A11  BROADCASTING  BROADCASTING-SATELLITE 5.208B  5.341 5.342 5.345 | | 1 452-1 492  FIXED  MOBILE 5.343 ADD 5.A11  BROADCASTING  BROADCASTING-SATELLITE 5.208B  5.341 5.344 5.345 | | |
| 1 492-1 518  FIXED  MOBILE except aeronautical mobile ADD 5.A11  5.341 5.342 | | 1 492-1 518  FIXED  MOBILE 5.343 ADD 5.A11  5.341 5.344 | | 1 492-1 518  FIXED  MOBILE ADD 5.A11  5.341 |

ADD EUR/9A1A1/2

5.A11 The frequency band 1 427-1 518 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations.     (WRC‑15)

**Reasons:** To identify the frequency band 1 427-1 518 MHz for IMT.

MOD EUR/9A1A1/3

5.338A In the bands 1 350-1 400 MHz, 1 427-1 452 MHz, 22.55-23.55 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‑15)** applies.    (WRC‑15)

**Reasons:** To update Resolution 750with unwanted emission requirements for stations of IMT systems.

ARTICLE 21

Terrestrial and space services sharing frequency bands above 1 GHz

Section V − Limits of power flux-density from space stations

MOD EUR/9A1A1/4

TABLE **21-4**     (Rev.WRC‑15)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Frequency band | Service[[1]](#footnote-1)\* | Limit in dB(W/m2) for angles of arrival (δ) above the horizontal plane | | | Reference bandwidth |
| 0°-5° | 5°-25° | 25°-90° |
| 1 452-1 492 MHz (except over the territory of [list of countries]) | Broadcasting-satellite | −113 | | | 1 MHz |

**Reasons:** To ensure protection of terrestrial systems, including IMT systems from the broadcasting-satellite service. The list of countries would include those wishing to continue to apply the coordination procedure of RR No. 9.11 in Appendix 5.

MOD EUR/9A1A1/5

APPENDIX 5 (REV.WRC‑15)

Identification of administrations with which coordination is to be effected or  
agreement sought under the provisions of Article 9

MOD EUR/9A1A1/6

TABLE 5-1     (Rev.WRC‑15)

Technical conditions for coordination

(see Article 9)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Reference of Article 9 | Case | Frequency bands (and Region) of the service for which coordination is sought | Threshold/condition | Calculation  method | Remarks |
| No. **9.11** GSO, non-GSO/ terrestrial | A space station in the BSS in any band shared on an equal primary basis with terrestrial services and where the BSS is not subject to a Plan, in respect of terrestrial services | 620-790 MHz (see Resolution **549 (WRC‑07)**) 1 452-1 492 MHz (only over the territory of [list of countries]) 2 310-2 360 MHz (No. **5.393**) 2 535-2 655 MHz (Nos. **5.417A** and **5.418**) 17.7-17.8 GHz (Region 2)  74-76 GHz | Bandwidths overlap: The detailed conditions for the application of No. **9.11** in the bands 2 630-2 655 MHz and 2 605-2 630 MHz are provided in Resolution **539 (Rev.WRC‑03)** for non-GSO BSS (sound) systems pursuant to Nos. **5.417A** and **5.418**, and in Nos. **5.417A** and **5.418** for GSO BSS (sound) networks pursuant to those provisions. | Check by using the assigned frequencies and bandwidths |  |

**Reasons:** To allow countries wishing to continue to apply the coordination procedure of RR No. 9.11with respect to their terrestrial services because of more stringent protection requirements (e.g. in order to protect aeronautical telemetry systems) to do so.

MOD EUR/9A1A1/7

RESOLUTION 223 (Rev.WRC‑15)

Additional frequency bands identified for IMT

The World Radiocommunication Conference (Geneva, 2015),

considering

*…*

*u)* that ITU‑R studies forecasted that additional spectrum may be required to support the future services of IMT and to accommodate future user requirements and network deployments;

*v)* that the band 1 427-1 525 MHz is allocated worldwide to the mobile service (except aeronautical mobile service in part of the band), on a co-primary basis;

*w)* that WRC‑03 allocated the frequency band 1 518-1 525 MHz to the mobile-satellite service;

*x)* that WRC‑15 identified the band 1 427-1 518 MHz for use by administrations wishing to implement terrestrial International Mobile Telecommunications (IMT) systems;

*y)* that the band 1 518-1 559 MHz is allocated worldwide on a co-primary basis to the mobile-satellite service (space-to-Earth) and may be used for the satellite component of IMT;

*z)* that there is a need ensure the coexistence between the existing applications of primary services in the band 1 518-1 559 MHz and the primary mobile service in the band below 1 518 MHz;

*aa)* that appropriate technical measures to facilitate adjacent band compatibility between MSS earth stations in the frequency band 1 518-1 525 MHz and IMT in the frequency band 1 492-1 518 MHz need to be studied,

…

invites ITU‑R

...

3 to develop an ITU‑R Recommendation providing technical measures to facilitate adjacent band compatibility between MSS above 1 518 MHz and IMT below 1 518 MHz and, as necessary, guidance to facilitate coordination with neighbouring administrations;

4 to continue its studies on further enhancements of IMT, including the provision of Internet Protocol (IP)-based applications that may require unbalanced radio resources between the mobile and base stations;

5 to continue providing guidance to ensure that IMT can meet the telecommunication needs of the developing countries and rural areas in the context of the studies referred to above;

6 to include these frequency arrangements and the results of these studies in one or more ITU‑R Recommendations.

**Reasons:** Initial studies on adjacent band compatibility between IMT and MSS did not conclude on whether there was a need for technical measures to facilitate adjacent band compatibility. This change will ensure that ITU-R studies the issue. If action is required, an ITU-R Recommendation is the appropriate way to achieve a consistent and harmonized global approach.

MOD EUR/9A1A1/8

RESOLUTION 750 (Rev.WRC‑15)

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

MOD EUR/9A1A1/9

resolves

...

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 |
| 1 400-1 427 MHz | 1 427-1 452 MHz | Mobile | For IMT base stations: −75 dBW/27 MHz  For IMT mobile stations: −65 dBW/27 MHz2 |
| ... |  |  |  |
| 50.2-50.4 GHz | 49.7-50.2 GHz | Fixed-satellite (E‑to‑s)3 | For stations brought into use after the date of entry into force of the Final Acts of WRC‑07:  −10 dBW into the 200 MHz of the EESS (passive) band for earth stations having an antenna gain greater than or equal to 57 dBi  −20 dBW into the 200 MHz of the EESS (passive) band for earth stations having an antenna gain less than 57 dBi |
| 50.2-50.4 GHz | 50.4-50.9 GHz | Fixed-satellite (E‑to‑s)3 | For stations brought into use after the date of entry into force of the Final Acts of WRC‑07:  −10 dBW into the 200 MHz of the EESS (passive) band for earth stations having an antenna gain greater than or equal to 57 dBi  −20 dBW into the 200 MHz of the EESS (passive) band for earth stations having an antenna gain less than 57 dBi |
| ...  2 The unwanted emission power level is to be understood here as the level measured with the mobile station transmitting at an average output power of 15 dBm over all resource blocks (RB).  3 The limits apply under clear-sky conditions. During fading conditions, the limits may be exceeded by earth stations when using uplink power control. | | | |

TABLE 1-2

|  |  |  |  |
| --- | --- | --- | --- |
| EESS (passive) band | Active service band | Active service | Recommended maximum level of unwanted emission power from active service stations in a specified bandwidth within the EESS (passive) band1 |
| 1 400-1 427 MHz | 1 427-1 429 MHz | Space operation (E-to-s) | −36 dBW in the 27 MHz of the EESS (passive) band |
| Mobile except aeronautical mobile | −60 dBW in the 27 MHz of the EESS (passive) band for mobile service stations except IMT stations and transportable radio-relay stations  −45 dBW in the 27 MHz of the EESS (passive) band for transportable radio-relay stations |
| Fixed | −45 dBW in the 27 MHz of the EESS (passive) band for point-to-point |
| 1 429-1 452 MHz | Mobile | −60 dBW in the 27 MHz of the EESS (passive) band for mobile service stations except IMT stations and transportable radio-relay stations  −45 dBW in the 27 MHz of the EESS (passive) band for transportable radio-relay stations  −28 dBW in the 27 MHz of the EESS (passive) band for aeronautical telemetry stations3 |
| Fixed | −45 dBW in the 27 MHz of the EESS (passive) band for point-to-point |
| ...  3 The band 1 429-1 435 MHz is also allocated to the aeronautical mobile service in eight Region 1 administrations on a primary basis exclusively for the purposes of aeronautical telemetry within their national territory (No. **5.342**).  ... | | | |

**Reasons:** Relevant mandatory unwanted emission levels for the band 1 400-1 427 MHz consistent with Report ITU-R RS.2336 to be included in the Radio Regulations to ensure the protection of EESS (passive).

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1. \* The references to services are those services which have allocations in Article 5. [↑](#footnote-ref-1)