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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| PLENARY MEETING | **Addendum 11 to Document 25-E** |
|  | **10 September 2015** |
|  | **Original: Arabic** |
|  | |
| Arab States Common Proposals | |
| Proposals for the work of the conference | |
|  | |
| Agenda item 1.11 | |

1.11to consider a primary allocation for the Earth exploration-satellite service (Earth-to-space) in the 7-8 GHz range, in accordance with Resolution **650 (WRC‑12)**;

Introduction

Resolution650 (WRC‑12)invites ITU-R to conduct a study of spectrum requirements in the 7‑8 GHz frequency range for EESS (Earth-to-space) telecommand operations in order to complement telemetry operations of EESS (space-to-Earth) in the 8 025-8 400 MHz frequency band and to conduct studies on the compatibility between EESS (Earth-to-space) systems and existing services, with priority to the frequency band 7 145-7 235 MHz, and then within other portions of the 7-8 GHz frequency range only if the frequency band 7 145-7 235 MHz is found not to be suitable.

The ITU-R studies indicate that spectrum requirements for new EESS systems are between 38 and 56 MHz. 38 MHz spectrum is required in the case when the allocation is made in frequency bands not shared with other space services, while 56 MHz spectrum is required in the case when the allocation is made in bands shared with other space services (like the frequency band 7 190-7 235 MHz.

The ITU-R studies concluded that sharing would be feasible in the frequency band 7 190-7 250 MHz, covering therefore the spectrum requirements identified.

Based on the results of the studies, the Arab States administrations propose the addition of a global primary allocation to the EESS (Earth-to-space) in the frequency band 7 190-7 250 MHz to the Table of Frequency Allocations in RR Article 5 and to include provisions with regard to this allocation stipulating that:

– operation of EESS systems in the frequency band 7 190-7 235 MHz is subject to obtaining agreement under RR No. 9.21 with regard to the SOS which is operated in accordance with RR No. 5.459;

– space stations in the EESS (Earth-to-space) shall not claim protection from existing and future stations in the FS and the MS in the frequency band 7 190‑7 250 MHz, and that RR No. 5.43A does not apply.

– space stations in the EESS (Earth-to-space) shall not claim protection from SRS earth stations in the frequency band 7 190-7 235 MHz.

Additionally, it is proposed that Table 7b in RR Appendix 7 be modified to include the EESS allocation, and Table 21‑3 in RR Article 21 be modified to extend the frequency range 7 190-7 235 MHz to 7 190‑7 250 MHz. Accordingly, cancellation of Resolution 650 (WRC-12) is proposed.

Proposals

ARTICLE 5

Frequency allocations

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

MOD ARB/25A11/1

5 570-7 250 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 7 145-7 190 FIXED  MOBILE  SPACE RESEARCH (deep space) (Earth-to-space)  5.458 5.459 | | |
| 7 190-7 235 EARTH EXPLORATION-SATELLITE (Earth-to-space) ADD 5.A111 ADD 5.B111  FIXED  MOBILE  SPACE RESEARCH (Earth-to-space) MOD 5.460  5.458 5.459 | | |
| 7 235-7 250 EARTH EXPLORATION-SATELLITE (Earth-to-space) ADD 5.A111 ADD 5.B111  FIXED  MOBILE  5.458 | | |

MOD ARB/25A11/2

5.460 No emissions from the space research service (Earth-to-space) to deep space shall be effected in the frequency band 7 190-7 235 MHz. Geostationary satellites in the space research service operating in the frequency band 7 190-7 235 MHz shall not claim protection from existing and future stations of the fixed and mobile services and No. 5.43Adoes not apply.     (WRC-15)

**Reasons:** To provide a new allocation to the EESS (Earth-to-space) in the frequency band 7 190-7 250 MHz. The TT&C function could be implemented by pairing this new allocation with the already existing EESS (space-to-Earth) allocation in the frequency band 8 025-8 400 MHz. Suppression of the first sentence is a consequential change. Addition of words “spacecraft operating in” is to be more precise.

ADD ARB/25A11/3

5.A111 The use of the band 7 190-7 235 MHz (Earth-to-space) by the Earth exploration-satellite service is subject to agreement obtained under No. **9.21** with respect to the space operation service applied under No. **5.459**. Space stations in the Earth exploration-satellite service (Earth-to-space) shall not claim protection from existing and future stations in the fixed and mobile services operating in the frequency band 7 190‑7 250 MHz and No. **5.43A** does not apply.     (WRC‑15)

**Reasons:** To ensure compatibility between the SOS and the EESS and ensure protection of FS and MS.

ADD ARB/25A11/4

5.B111 Space stations in the Earth exploration-satellite service (Earth-to-space) shall not claim protection from emissions of SRS stations in the frequency band 7 190-7 235 MHz.     (WRC‑15)

**Reasons:** In some cases for co-frequency operations, in particular when the earth stations are either collocated geographically or nearby, the interference levels from near-Earth SRS uplinks into EESS satellites would exceed the applicable ITU criteria.

SUP ARB/25A11/5

RESOLUTION 650 (WRC‑12)

Allocation for the Earth exploration-satellite service   
(Earth-to-space) in the 7-8 GHz range

**Reasons:** This resolution is no longer necessary.

MOD ARB/25A11/6

APPENDIX 7 (REV.WRC‑15)

Methods for the determination of the coordination area around an earth  
station in frequency bands between 100 MHz and 105 GHz

ANNEX 7

System parameters and predetermined coordination distances for determination of the coordination area around an earth station

# 3 Horizon antenna gain for a receiving earth station with respect to a transmitting earth station

MOD ARB/25A11/7

TABLE 7b    (Rev.WRC‑15)

Parameters required for the determination of coordination distance for a transmitting earth station

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Transmitting space radiocommunication  service designation | | Fixed-satellite, mobile-satellite | Aero-nautical mobile-satellite (R) service | Aero-nautical mobile-satellite (R) service | Fixed- satellite | Fixed- satellite | Fixed- satellite | Fixed- satellite | | Earth exploration-satellite space  operation, space  research | | Fixed-satellite, mobile-satellite, meteorological- satellite | | Fixed- satellite | | Fixed- satellite | | Fixed- satellite | Fixed- satellite 3 | Fixed- satellite | Fixed- satellite 3 |
| Frequency bands (GHz) | | 2.655-2.690 | 5.030-5.091 | 5.030-5.091 | 5.091-5.150 | 5.091-5.150 | 5.725-5.850 | 5.725-7.075 | | 7.100-7.250 5 | | 7.900-8.400 | | 10.7-11.7 | | 12.5-14.8 | | 13.75-14.3 | 15.43-15.65 | 17.7-18.4 | 19.3-19.7 |
| Receiving terrestrial service designations | | Fixed, mobile | Aeronautical radio- navigation | Aeronautical mobile (R) | Aeronautical radio- navigation | Aeronautical mobile (R) | Radiolocation | Fixed, mobile | | Fixed, mobile | | Fixed, mobile | | Fixed, mobile | | Fixed, mobile | | Radiolocation radionavigation (land only) | Aeronautical radionavigation | Fixed, mobile | Fixed, mobile |
| Method to be used | | § 2.1 | § 2.1, § 2.2 | § 2.1, § 2.2 |  |  | § 2.1 | § 2.1 | | § 2.1, § 2.2 | | § 2.1 | | § 2.1 | | § 2.1, § 2.2 | | § 2.1 |  | § 2.1, § 2.2 | § 2.2 |
| Modulation at terrestrial station 1 | | A |  |  |  |  |  | A | N | A | N | A | N | A | N | A | N | − |  | N | N |
| Terrestrial station interference parameters and criteria | *p0* (%) | 0.01 |  |  |  |  |  | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 | 0.005 | 0.01 |  | 0.005 | 0.005 |
| *n* | 2 |  |  |  |  |  | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 |  | 2 | 2 |
| *p* (%) | 0.005 |  |  |  |  |  | 0.005 | 0.0025 | 0.005 | 0.0025 | 0.005 | 0.0025 | 0.005 | 0.0025 | 0.005 | 0.0025 | 0.01 |  | 0.0025 | 0.0025 |
| *NL* (dB) | 0 |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |
| *Ms* (dB) | 26 2 |  |  |  |  |  | 33 | 37 | 33 | 37 | 33 | 37 | 33 | 40 | 33 | 40 | 1 |  | 25 | 25 |
| *W* (dB) | 0 |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |
| Terrestrial station parameters | *Gx* (dBi) 4 | 49 2 | 6 | 10 | 6 | 6 |  | 46 | 46 | 46 | 46 | 46 | 46 | 50 | 50 | 52 | 52 | 36 |  | 48 | 48 |
| *Te* (K) | 500 2 |  |  |  |  |  | 750 | 750 | 750 | 750 | 750 | 750 | 1 500 | 1 100 | 1 500 | 1 100 | 2 636 |  | 1 100 | 1 100 |
| Reference bandwidth | *B* (Hz) | 4 × 103 | 150 × 103 | 37.5 × 103 | 150 × 103 | 106 |  | 4 × 103 | 106 | 4 × 103 | 106 | 4 × 103 | 106 | 4 × 103 | 106 | 4 × 103 | 106 | 107 |  | 106 | 106 |
| Permissible interference power | *Pr*( *p*) (dBW) in *B* | −140 | −160 | −157 | −160 | −143 |  | −131 | −103 | −131 | −103 | −131 | −103 | −128 | −98 | −128 | −98 | −131 |  | −113 | −113 |

1 A: analogue modulation; N: digital modulation.

2 The parameters for the terrestrial station associated with transhorizon systems have been used. Line-of-sight radio-relay parameters associated with the frequency band 5 725‑7 075 MHz may also be used to determine a supplementary contour with the exception that *Gx* = 37 dBi.

3 Feeder links of non-geostationary-satellite systems in the mobile‑satellite service.

4 Feeder losses are not included.

5 Actual frequency bands are 7 190-7 250 MHz for the Earth exploration-satellite service, 7 100-7 155 MHz and 7 190-7 235 MHz for the space operation service and 7 145-7 235 MHz for the space research service.     (WRC‑15)

**Reasons:** Consequential changes as a result of including the new allocation to the Earth exploration-satellite service (Earth-to-space) in Appendix7, Table 7b (Parameters required for the determination of coordination distance for a transmitting earth station).

ARTICLE 21

Terrestrial and space services sharing frequency bands above 1 GHz

Section III − Power limits for earth stations

MOD ARB/25A11/8

TABLE **21-3**     (Rev.WRC‑15)

|  |  |  |
| --- | --- | --- |
| Frequency band | | Services |
| 2 025-2 110 MHz  5 670-5 725 MHz  5 725-5 755 MHz6 | (for the countries listed in No. 5.454 with respect to the countries listed in Nos. 5.453 and 5.455)  (for Region 1 with respect to the countries listed in Nos. 5.453 and 5.455) | Earth-exploration-satellite  Fixed-satellite  Meteorological-satellite  Mobile-satellite  Space operation |
| 5 755-5 850 MHz6 | (for Region 1 with respect to the countries listed in Nos. 5.453, 5.455 and 5.456) | Space research |
| 5 850-7 075 MHz |  |  |
| 7 190-7 250 MHz |  |  |
| 7 900-8 400 MHz |  |  |
| 10.7-11.7 GHz6 | (for Region 1) |  |
| 12.5-12.75 GHz6 | (for Region 1 with respect to the countries listed in No. 5.494) |  |
| 12.7-12.75 GHz6 | (for Region 2) |  |
| 12.75-13.25 GHz |  |  |
| 14.0-14.25 GHz | (with respect to the countries listed in No. 5.505) |  |
| 14.25-14.3 GHz | (with respect to the countries listed in Nos. 5.505, 5.508 and 5.509) |  |
| 14.3-14.4 GHz6 | (for Regions 1 and 3) |  |
| 14.4-14.8 GHz |  |  |

**Reasons:** Consequential changes as a result of considering the new allocation to the EESS (Earth-to-space) the 7 190-7 250 MHz frequency band.

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