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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
|  |  |
| PLENARY MEETING | **Addendum 11 to Document 28-E** |
|  | **16 September 2015** |
|  | **Original: English** |
|  | |
| African 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)**;

ARTICLE 5

Frequency allocations

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

MOD AFCP/28A11/1

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 MOD 5.459 | | |
| 7 190-7 235 EARTH EXPLORATION-SATELLITE (Earth-to-space) ADD 5.E11  FIXED  MOBILE  SPACE RESEARCH (Earth-to-space) MOD 5.460  5.458 MOD 5.459 | | |
| 7 235-7 250 EARTH EXPLORATION-SATELLITE (Earth-to-space) ADD 5.E11  FIXED  MOBILE  5.458 | | |

**Reasons:** This method satisfies the agenda item and ensures the protection of existing services. In the frequency band 7 190-7 235 MHz RR No. 9.21 is applied to the space operation service in order to provide protection for the existing radio services and shall not be applied with respect to a new service (the EESS) not to impose new constraints on the existing radio service.

NOTE – This proposal only applies to the frequency range 7 145-7 250 MHz.

MOD AFCP/28A11/2

5.459 *Additional allocation:*in the Russian Federation, the frequency bands 7 100-7 155 MHz and 7 190-7 235 MHz are also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. **9.21**. Inthe frequency band 7 190-7 235 MHz, obtaining agreement under No. **9.21** with respect to the Earth exploration-satellite service (Earth-to-space) is not applied.     (WRC-15)

MOD AFCP/28A11/3

5.460 No emissions to spacecraft operating in 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:** Deletion of first sentence as consequential changes. Addition of words “spacecraft operating in” to be more precise.

ADD AFCP/28A11/4

5.E11 The usage of the frequency band 7 190-7 250 MHz by the Earth exploration-satellite service shall be limited to tracking, telemetry and command for the operation of the spacecraft and that Earth exploration-satellite service geostationary satellites in this frequency band, shall not claim protection from existing and future stations of the fixed and mobile services and No. **5.43A** does 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. It restricts the usage of the frequency band 7 190-7 250 MHz to the operation of the EESS spacecraft, because the aim for the Resolution 650 (WRC-12) is to obtain a new allocation in the frequency range 7-8 GHz for the TT&C operations and no studies regarding other purpose except for TT&C function have been performed. If there were no restriction, this new allocation might be used for other purposes (e.g. data dissemination).

ARTICLE 21

Terrestrial and space services sharing frequency bands above 1 GHz

Section III − Power limits for earth stations

MOD AFCP/28A11/5

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 Earth exploration-satellite service (Earth-to-space) the 7 190-7 250 MHz frequency band.

MOD AFCP/28A11/6

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 AFCP/28A11/7

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 EESS (Earth-to-space) in Appendix7, Table 7b (Parameters required for the determination of coordination distance for a transmitting earth station).

SUP AFCP/28A11/8

RESOLUTION 650 (WRC‑12)

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

**Reasons:** If the Conference agrees to the proposal above, Resolution 650 may no longer be necessary.

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