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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** | |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** | |  |
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| PLENARY MEETING | **Addendum 2 to Document 28(Add.23)(Add.1)-E** | | |
|  | **16 September 2015** | |
|  | **Original: English** | |
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| African Common Proposals | | |
| Proposals for the work of the conference | | |
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| Agenda item 9.1(9.1.2) | | |

9 to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention:

9.1 on the activities of the Radiocommunication Sector since WRC‑12;

9.1(9.1.2) Resolution **756 (WRC-12)** − Studies on possible reduction of the coordination arc and technical criteria used in application of No. **9.41** in respect of coordination under No. **9.7**

Issue A: Regulatory and procedural considerations in respect of resolves 1 of Resolution 756 (WRC-12)

NOC AFCP/28A23A1A2/1

ARTICLE 9

Procedure for effecting coordination with or obtaining agreement of other administrations1, 2, 3, 4, 5, 6, 7, 8, 8*bis*    (WRC‑12)

**Reasons:**

1) Regulatory provisions proposed here are aimed at facilitation of coordination in difficult cases related to compatibility of notified inhomogeneous satellite networks, and at efficiency of the frequency resource of the unique geostationary orbit. The effect of the two factors on the future development of satellite communications seems to be of far more importance than proposals for savings in correspondence efforts between the Bureau and administrations for international frequency coordination of submitted satellite networks.

2) To retain the existing criterion C/I for examination under RR No. 11.32A for frequency bands under consideration and also base the examination under RR Nos. 9.7 and 9.41 on the same C/I assessment.

3) This option would involve retention of RR Nos. 9.7, 9.41 and 11.32A essentially as today. However, the technical criteria associated with the various provisions would be modified as follows:

ARTICLE 11

Notification and recording of frequency   
assignments1, 2, 3, 4, 5, 6, 7, 7*bis*    (WRC‑12)

Section II − Examination of notices and recording of frequency assignments   
in the Master Register

MOD AFCP/28A23A1A2/2

11.32A *c)* with respect to the probability of harmful interference that may be caused to or by assignments recorded with a favourable finding under Nos. 11.36 and 11.37 or 11.38, or recorded in application of No. 11.41, or published under Nos. 9.38 or 9.58 but not yet notified, as appropriate, for those cases for which the notifying administration states that the procedure for coordination under Nos. 9.7, 9.7A, 9.7B, 9.11, 9.12, 9.12A, 9.13 or 9.14, could not be successfully completed (see also No. 9.65);14, 14bis or     (WRC‑15)

NOC AFCP/28A23A1A2/3

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14 11.32A.1 The examination of such notices with respect to any other frequency assignment for which a request for coordination under Nos. **9.7**, **9.7A**, **9.7B**, **9.12**, **9.12A** or **9.13**, as appropriate, has been published under No. **9.38** but not yet notified shall be effected by the Bureau in the order of their publication under the same number using the most recent information available.     (WRC‑2000)

ADD AFCP/28A23A1A2/4

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14*bis* 11.32A.2 The criteria to determine the probability of harmful interference and the criteria for the formulation of the findings of the Bureau in respect of assignments in the frequency bands identified in 1) and 2) in Table 5‑1 of Appendix 5 of these regulationsare contained in Resolution **[AFCP-A912] (WRC‑15)**.     (WRC‑15)

APPENDIX 5 (REV.WRC‑12)

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

NOC AFCP/28A23A1A2/5

TABLE 5-1     (Rev.WRC‑12)

Technical conditions for coordination

(see Article 9)

NOTE – Depending upon decisions of WRC-15 in respect of *resolves* 2 of Resolution 756 (WRC‑12), the numerical values for the size of the coordination arc in one or more of the listed frequency bands of Table 5-1 may change. This option is neutral in respect of the size of the coordination arc and decisions on the size of the coordination arc will not lead to a need for consequential changes in respect of this option or vice-versa.

ADD AFCP/28A23A1A2/6

Draft New Resolution [AFCP-A912] (WRC‑15)

Application of pfd criteria to assess the potential for harmful interference under No. 11.32A for fixed-satellite and broadcasting-satellite service networks in the 4/6 GHz and 10/11/12/14 GHz bands not subject to a Plan

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that the 4/6 GHz and 10/11/12/14 GHz frequency ranges, not subject to a Plan, are extensively used with operational satellites about every 2-3° around the geostationary arc;

*b)* that there currently are a very large number of satellite networks submitted to ITU‑R for these frequency bands;

*c)* that these above factors have led to significant difficulties for administrations to introduce new satellite networks;

*d)* that more precise criteria to assess the probability of harmful interference under No. **11.32A** have the potential to reduce undue protection requirements for assignments in respect of incoming assignments;

*e)* that reduction of undue protection requirements will facilitate coordination of submissions of new networks;

*f)* that due to the congestion in these frequency bands and due to the maturity of the technology and applications in these frequency bands, practical satellite implementations are seen to in practice use relatively homogeneous technical parameters;

*g)* that use of more homogeneous technical parameters will facilitate efficient spectrum usage and support introduction of new networks;

*h)* that the use of pfd thresholds will encourage use of more homogeneous technical parameters and support efficient spectrum usage,

resolves

1 that in the frequency band 3 400-4 200 MHz (space-to-Earth), assignments for a fixed-satellite service (FSS) space station with respect to other FSS networks do not have the potential to cause harmful interference if the pfd produced under assumed free-space propagation conditions does not exceed the threshold values shown below, anywhere within the service area of the potentially affected assignment:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | θ | ≤ | 0.09° | −243.5 | (dBW/m2∙ Hz) |
| 0.09° | < | θ | ≤ | 3° | −243.5 + 20log(θ/0.09) | (dBW/m2∙ Hz) |
| 3° | < | θ | ≤ | 5.5° | −219.8 + 0.75 ∙ θ2 | (dBW/m2∙ Hz) |
| 5.5° | < | θ | ≤ | 20.9° | −196.8 + 25log(θ/5.6) | (dBW/m2∙ Hz) |
| 20.9° | < | θ |  |  | −182.6 | (dBW/m2∙ Hz) |

where θ is the minimum nominal geocentric orbital separation, in degrees, between the wanted and interfering space stations, taking into account the respective East-West station-keeping accuracies;

2 that in the frequency bands 5 725-5 850 MHz (Region 1), 5 850-6 725 MHz and 7 025-7 075 MHz (Earth-to-space), assignments for an FSS earth station with respect to other FSS networks do not have the potential to cause harmful interference if the pfd produced at the geostationary orbit location of the other FSS network under assumed free-space propagation conditions, does not exceed −204.0 dBW/m2 ∙ Hz, taking into account the respective East-West station-keeping accuracies;

3 that in the frequency bands 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz (Region 2), 12.2‑12.5 GHz (Region 3), 12.5-12.7 GHz (Regions 1 and 3) and 12.7‑12.75 GHz (space-to-Earth), assignments for an FSS or broadcasting-satellite service (BSS) space station with respect to other FSS or BSS networks do not have the potential to cause harmful interference if the pfd produced under assumed free-space propagation conditions, does not exceed the threshold values shown below, anywhere within the service area of the potentially affected assignment:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | θ | ≤ | 0.05° | −238.0 | (dBW/m2∙ Hz) |
| 0.05° | < | θ | ≤ | 3° | −238.0 + 20log(θ/0.05) | (dBW/m2∙ Hz) |
| 3° | < | θ | ≤ | 5° | −210.0 + 0.95 ∙ θ2 | (dBW/m2∙ Hz) |
| 5° | < | θ | ≤ | 20.9° | −187.2 + 25log(θ/5) | (dBW/m2∙ Hz) |
| 20.9° | < | θ |  |  | −171.9 | (dBW/m2∙ Hz) |

where θ is the minimum nominal geocentric orbital separation, in degrees, between the wanted and interfering space stations, taking into account the respective East-West station-keeping accuracies;

4 that in the frequency band 13.75-14.5 GHz (Earth-to-space), assignments for an FSS earth station with respect to other FSS networks do not have the potential to cause harmful interference if the pfd produced at the geostationary orbit location of the other FSS network under assumed free-space propagation conditions, does not exceed −208 dBW/m2 ∙ Hz, taking into account the respective East-West station-keeping accuracies;

5 that when the Bureau, under No. **11.32A**, conducts its examination of the probability of harmful interference in accordance with this Resolution, the above criteria shall be used.

NOTE – FSS and BSS networks are also subject to other relevant limits of the RR, including, but limited to, Nos. 21.16 and 21.17.

Issue B: Regulatory and procedural considerations in respect of *resolves* 2 of Resolution 756 (WRC‑12)

APPENDIX 5 (REV.WRC‑12)

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

MOD AFCP/28A23A1A2/7

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. **9.7** GSO/GSO | A station in a satellite network using the geostationary-satellite orbit (GSO), in any space radiocommunication service, in a frequency band and in a Region where this service is not subject to a Plan, in respect of any other satellite network using that orbit, in any space radiocommunication service in a frequency band and in a Region where this service is not subject to a Plan, with the exception of the coordination between earth stations operating in the opposite direction of transmission | 1) 3 400-4 200 MHz 5 725-5 850 MHz (Region 1) and 5 850-6 725 MHz 7 025-7 075 MHz | i) Bandwidth overlap, and  ii) any network in the fixed-satellite service (FSS) and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±6° of the nominal orbital position of a proposed network in the FSS |  | With respect to the space services listed in the threshold/condition column in the bands in 1), 2), 3), 4), 5), 6), 7) and 8), an administration may request, pursuant to No. **9.41**, to be included in requests for coordination, indicating the networks for which the value of Δ*T*/*T* calculated by the method in § 2.2.1.2 and 3.2 of Appendix **8** exceeds 6%. When the Bureau, on request by an affected administration, studies this information pursuant to No. **9.42**, the calculation method given in § 2.2.1.2 and 3.2 of Appendix **8** shall be used |
| 2) 10.95-11.2 GHz 11.45‑11.7 GHz  11.7-12.2 GHz  (Region 2) 12.2-12.5 GHz  (Region 3) 12.5‑12.75 GHz (Regions 1 and 3) 12.7‑12.75 GHz (Region 2) and  13.75‑14.5 GHz | i) Bandwidth overlap, and  ii) any network in the FSS or broadcasting-satellite service (BSS), not subject to a Plan, and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±5° of the nominal orbital position of a proposed network in the FSS or BSS, not subject to a Plan |

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