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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 toDocument 130(Add.22)-E** |
|  | **16 October 2015** |
|  | **Original: English** |
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| Angola (Republic of)/Botswana (Republic of)/Lesotho (Kingdom of)/Madagascar (Republic of)/Malawi/Mauritius (Republic of)/Mozambique (Republic of)/Namibia (Republic of)/Democratic Republic of the Congo/Seychelles (Republic of)/South Africa (Republic of)/Swaziland (Kingdom of)/Tanzania (United Republic of)/Zambia (Republic of)/Zimbabwe (Republic of) |
| Proposals for the work of the conference |
|  |
| 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**

Introduction

The use of orbit spectrum resources is increasing and the difficulties in getting access to spectrum for new satellite networks is increasing accordingly. For these reasons, improved ways to accommodate new networks and facilitating more efficient use of the spectrum resources are sought while at the same time ensuring adequate protection of existing networks operating in accordance with the Radio Regulations (RR).

WRC-12 decided to reduce the coordination arc in the 6/4 GHz and 14/10/11/12 GHz frequency ranges, but also decided to further study the issue in accordance with Resolution 756 (WRC-12). It calls for studies regarding additional reductions in the coordination arcs in RR Appendix **5** (Rev.WRC-12),as well as to examine the effectiveness and appropriateness of the current criterion (Δ*T*/*T* > 6%) used in the application of RR No. 9.41and consider any other possible alternatives, in order to facilitate coordination between FSS networks. Ultimately, WRC-15 agenda item 9.1, issue 9.1.2 is aiming to eliminate cases of “unnecessary coordination”, limit the number of administrations/networks involved in the coordination process, and reduce administrative correspondence.

Proposals

The SADC member states support Option 1A and 2A proposed in the CPM text.

**Reasons** : Effectiveness in technical criteria and reduction of coordination arc will lead to efficiency in satellite coordination which will result in facilitating access to new satellite networks.

OPTION 1B

NOC AGL/BOT/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/SWZ/TZA/ZMB/
 ZWE/130A22A2/1

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:** No changes to the provisions of RR Article **9** in respect of Option 1B.

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 AGL/BOT/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/SWZ/TZA/ZMB/
 ZWE/130A22A2/2

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, 14*bis* or     (WRC‑2000)

NOC

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14 11.32A.1

ADD AGL/BOT/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/SWZ/TZA/ZMB/
 ZWE/130A22A2/3

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14*bis* 11.32А.2 The calculation method to assess harmful interference and the criteria for the formulation of the findings of the Bureau for the coordination under No. **9.7** are contained in Appendix **8**.

MOD AGL/BOT/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/SWZ/TZA/ZMB/
 ZWE/130A22A2/4

APPENDIX 5 (REV.WRC‑15)

Identification of administrations with which coordination is to be effected or
agreement sought under the provisions of Article 9[[1]](#footnote-1)

MOD AGL/BOT/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/SWZ/TZA/ZMB/ZWE/130A22A2/5

TABLE 5-1     (Rev.WRC‑15)

Technical conditions for coordination

(see Article 9)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ReferenceofArticle 9 | Case | Frequency bands(and Region) of the service for which coordinationis 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 MHz5 725-5 850 MHz (Region 1) and5 850-6 725 MHz7 025-7 075 MHz | i) Bandwidth overlap, andii) 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 ±8° 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 C/*I* calculated by the method in § [XXX] of Appendix **8** is lower than the appropriate criterion (C/I< C/N+7 dB). When the Bureau, on request by an affected administration, studies this information pursuant to No. **9.42**, the calculation method given in § [XXX] of Appendix **8** shall be used. |
| 2) 10.95-11.2 GHz11.45‑11.7 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, andii) 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 ±7° of the nominal orbital position of a proposed network in the FSS or BSS, not subject to a Plan |

TABLE 5-1 (*continued*)     (Rev.WRC‑15)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ReferenceofArticle 9 | Case | Frequency bands(and Region) of the service for which coordinationis sought | Threshold/condition | Calculation method | Remarks |
| No. **9.7**GSO/GSO(*cont.*) |  | 3) 17.7‑20.2 GHz,(Regions 2 and 3), 17.3-20.2 GHz (Region 1) and27.5‑30 GHz | i) Bandwidth overlap, andii) any network in the FSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS |  |  |
|  |  | 4) 17.3‑17.7 GHz (Regions 1 and 2) | i) Bandwidth overlap, andii) a) any network in the FSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the BSS, or b) any network in the BSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS |  |  |

TABLE 5-1 (*continued*)     (Rev.WRC‑15)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ReferenceofArticle 9 | Case | Frequency bands(and Region) of the service for which coordinationis sought | Threshold/condition | Calculation method | Remarks |
| No. **9.7**GSO/GSO(*cont.*) |  | 5) 17.7‑17.8 GHz | i) Bandwidth overlap, andii) a) any network in the FSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the BSS, or b) any network in the BSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSSNOTE – No. **5.517** applies in Region 2. |  |  |
|  |  | 6) 18.0-18.3 GHz (Region 2) 18.1-18.4 GHz (Regions 1 and 3)  | i) Bandwidth overlap, andii) any network in the FSS or meteorological-satellite service and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS or the meteorological-satellite service |  |  |

TABLE 5-1 (*continued*)     (Rev.WRC‑15)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ReferenceofArticle 9 | Case | Frequency bands(and Region) of the service for which coordinationis sought | Threshold/condition | Calculation method | Remarks |
| No. **9.7**GSO/GSO(*cont.*) |  | 6*bis*) 21.4-22 GHz (Regions 1 and 3)7) Bands above 17.3 GHz, except those defined in § 3) and 6) | i) Bandwidth overlap; andii) any network in the BSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±12° of the nominal orbital position of a proposed network in the BSS (see also Resolutions **554 (WRC‑12)** and **553 (WRC‑12)**).i) Bandwidth overlap, andii) any network in the FSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS (see alsoResolution **901 (Rev.WRC‑07)**) |  | No. **9.41** does not apply. |
|  |  | 8) Bands above 17.3 GHz except those defined in § 4), 5) and 6*bis*) | i) Bandwidth overlap, andii) any network in the FSS or 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 ±16° of the nominal orbital position of a proposed network in the FSS or BSS, not subject to a Plan, except in the case of a network in the FSS with respect to a network in the FSS (see also Resolution **901 (Rev.WRC‑07)**) |  |  |

TABLE 5-1 (*continued*)     (Rev.WRC‑15)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ReferenceofArticle 9 | Case | Frequency bands(and Region) of the service for which coordinationis sought | Threshold/condition | Calculation method | Remarks |
| No. **9.7**GSO/GSO(*cont.*) |  | 9) All frequency bands, other than those in 1), 2), 3), 4), 5), 6), 6*bis),* 7) and 8), allocated to a space service, and the bands in 1), 2), 3), 4), 5), 6), 6*bis),* 7) and 8) where the radio service of the proposed network or affected networks is other than the space services listed in the threshold/ condition column, or in the case of coordination of space stations operating in the opposite direction of transmission | i) Bandwidth overlap, andii) Value of C/I < C/N+7 dB | Appendix **8** | In application of Article 2A of Appendix **30** for the space operation functions using the guardbands defined in § 3.9 of Annex 5 of Appendix **30**, the threshold/condition specified for the FSS in the bands in 2) applies.In application of Article 2A of Appendix **30A** for the space operation functions using the guardbands defined in § 3.1 and 4.1 of Annex 3 of Appendix **30A**, the threshold/condition specified for the FSS in the bands in 7) applies |

**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.

APPENDIX 8 (REV.WRC‑03)

Method of calculation for determining if coordination is required between geostationary-satellite networks sharing the same frequency bands

ADD AGL/BOT/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/SWZ/TZA/ZMB/
 ZWE/130A22A2/6

# [XXX] Calculation methodology for calculating C/I ratios in respect of determination of probability of harmful interference between space networks

This method would be the same as Option 1C, but based upon C/I = C/N + 7 dB.

OPTION 2A

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 AGL/BOT/LSO/MDG/MWI/MAU/MOZ/NMB/COD/SEY/AFS/SWZ/TZA/ZMB/ZWE/130A22A2/7

TABLE 5-1     (Rev.WRC‑12)

Technical conditions for coordination

(see Article 9)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ReferenceofArticle 9 | Case | Frequency bands(and Region) of the service for which coordinationis 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 MHz5 725-5 850 MHz (Region 1) and5 850-6 725 MHz7 025-7 075 MHz | i) Bandwidth overlap, andii) 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 GHz11.45‑11.7 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, andii) 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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1. See Resolution [B912] (WRC-15). [↑](#footnote-ref-1)