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| **World Radiocommunication Conference (WRC-19)Sharm el-Sheikh, Egypt, 28 October – 22 November 2019** |  |
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| PLENARY MEETING | **Addendum 5 toDocument 58(Add.19)-E** |
|  | **10 October 2019** |
|  | **Original: English** |
|  |
| Canada/United States of America |
| Proposals for the work of the conference |
|  |
| Agenda item 7(E) |

7 to consider possible changes, and other options, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, an advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks, in accordance with Resolution **86 (Rev.WRC-07)**, in order to facilitate rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit;

7(E) Issue E - Resolution related to RR Appendices **30B**

Introduction

Canada and the United States support a solution under this Issue that addresses the concern for administrations having no assignment in the RR Appendix **30B** List which will allow these administrations to convert their national allotments into assignments with characteristics outside the envelope of the allotment or make a submission for a new network provided that the assignment are limited to national service area. Canada and the United States therefore support the single method as contained in the CPM Report with an amendment to the single method that aligns Appendix 1 of the Attachment to the WRC Resolution with the Canadian and United States proposal under Issue F.

MOD CAN/USA/58A19A5/1

APPENDIX 30B (REV.WRC‑-19)

Provisions and associated Plan for the fixed-satellite service
in the frequency bands 4 500-4 800 MHz, 6 725-7 025 MHz,
10.70-10.95 GHz, 11.20-11.45 GHz and 12.75-13.25 GHz

**Reasons:** To provide a WRC Resolution as a measure and special procedure applied once only, to facilitate processing its submission in accordance with Appendix **30B** of the RR and to enhance equitable access of developing countries to spectrum / orbital resources.

MOD CAN/USA/58A19A5/2#50092

ARTICLE 6     (REV.WRC‑19)

Procedures for the conversion of an allotment into an assignment, for
the introduction of an additional system or for the modification of
an assignment in the List1, 2, [[1]](#footnote-1)2*bis*     (WRC‑19)

**Reasons:** To allow administrations to convert their national allotments into assignments with characteristics outside the envelope of the allotment or make a submission for a new network provided that the assignments are limited to national service area.

ADD CAN/USA/58A19A5/3#50093

Draft New Resolution [CAN/USA/A7(E)-AP30B] (WRC‑19)

Additional measures for satellite networks in the fixed-satellite service
in frequency bands subject to Appendix 30B for the enhancement
of equitable access to these frequency bands

The World Radiocommunication Conference (Sharm el-Sheikh, 2019),

considering

*a)* that WARC Orb‑88 created an allotment Plan for the use of the frequency bands 4 500‑4 800 MHz, 6 725-7 025 MHz, 10.70-10.95 GHz, 11.20-11.45 GHz and 12.75-13.25 GHz;

*b)* that WRC‑07 revised the regulatory regime governing the use of the frequency bands mentioned in *considering a)* above,

considering further

*a)* the additional regulatory measures for the enhancement of equitable access included in Resolution **553 (WRC‑15)**;

*b)* that the Rule of Procedure on No. **9.6** of the Radio Regulations states that “the intent of Nos. **9.6** (**9.7** to **9.21**), **9.27** and Appendix **5** is to identify to which administrations a request for coordination is to be addressed, and not to state an order of priorities for rights to a particular orbital position”,

recognizing

*a)* that Article 44 of the ITU Constitution lays down the basic principles for the use of the radio-frequency spectrum and the geostationary-satellite and other satellite orbits, taking into account the needs of developing countries;

*b)* that the “first-come first-served” concept can restrict and sometimes prevent access to and use of certain frequency bands and orbit positions;

*c)* the relative disadvantage for developing countries in coordination negotiations due to various reasons such as a lack of resources and expertise;

*d)* that Resolution **2 (Rev.WRC‑03)** resolves that “the registration with the Radiocommunication Bureau of frequency assignments for space radiocommunication services and their use do not provide any permanent priority for any individual country or groups of countries and do not create an obstacle to the establishment of space systems by other countries”*,*

recognizing further

*a)* that information provided by the Bureau into ITU‑R studies indicate that significant numbers of Appendix **30B** submissions have been received by the Bureau in the time period 1 January 2013 until 30 June 2018 and that the table below summarizes the data provided by the Bureau into those studies and shows the variations for the number of networks at the various stages;

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Request for conversion without change of initial allotment national service area | Request for conversion with changes within the envelope of initial allotment national service area | Request for conversion with changes outside the envelope of initial allotment national service area | Request for conversion with changes outside the envelope of initial allotment supra national service area | Request for additional use national service area | Request for additional use, with supra national service area and global coverage\*\* |
| 2012 Q1 + Q2 | 0 | 0 | 0 | 0 | 3 | 20 |
| 2012 Q3 + Q4 | 1 | 0 | 2 | 0 | 2 | 23 |
| 2013 Q1 + Q2 | 1 | 0 | 0 | 0 | 4 | 27 |
| 2013 Q3 + Q4 | 1 | 0 | 0 | 0 | 0 | 17 |
| 2014 Q1 + Q2 | 1 | 0 | 0 | 0 | 2 | 30 |
| 2014 Q3 + Q4 | 0 | 0 | 0 | 0 | 7 | 20 |
| 2015 Q1 + Q2 | 0 | 0 | 1 | 0 | 1 | 30 |
| 2015 Q3 + Q4 | 0 | 0 | 0 | 0 | 0 | 26 |
| 2016 Q1 + Q2 | 0 | 1 | 0 | 0 | 0 | 23 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2016 Q3 + Q4 | 0 | 0 | 0 | 0 | 1 | 24 |
| 2017 Q1 + Q2 | 0 | 0 | 0 | 0 | 4 | 34 |
| 2017 Q3 + Q4 | 0 | 1 | 0 | 0 | 0 | 25 |
| 2018 Q1 + Q2 | 0 | 0 | 0 | 0 | 6 | 20 |
| 2018 Q3 + Q4 | 0 | 0 | 0 | 0 | 0 | 10 |
| \*\* Notices for additional use with service area and coverage beyond the national territory of notifying administration.\*\*\* The above table needs to be replaced by that to be provided by the Bureau before the start of WRC‑19. |

*b)* that the number of Appendix **30B** submissions made by some administrations is large, which may not be realistic;

*c)* that the use of certain combinations of technical parameters in submissions (e.g. high-gain receiving space station antennas) can make the systems/submissions overly sensitive to interference in such a way that subsequent submissions for conversion from allotment into assignments with change would cause interference to those systems,

taking into account

that the majority of Appendix **30B** submissions under § 6.1 have global coverage and service area, which is typically changed limited service area with considerably wider coverage area at the time of § 6.17 submission, notwithstanding the Note to Appendix **4** data item B.3.b.1 which states “Taking due account of applicable technical restrictions and allowing some reasonable degree of flexibility for satellite operations, administrations should, to the extent practicable, align the areas the satellite steerable beams could cover with the service area of their networks with due regard to their service objectives” and this is complicating coordination for administrations attempting to convert their national allotments into assignments or introducing an additional system for national use in a technically and economically viable manner,

resolves

that as of the date *(yet to be decided by WRC-19)*, the special procedure described in the Attachment to this Resolution for processing of submissions received by the Bureau under Article 6 of Appendix **30B** for conversion of the allotment of an administration into an assignment with modifications which are outside the envelope of the initial allotment while restricted to provide service to its national territory designated by test points as contained in the corresponding allotment, or submission by an administration of an additional system the service area of which is limited to its national territory designated by test points as contained in the allotment, in the frequency bands 4 500-4 800 MHz, 6 725-7 025 MHz, 10.70-10.95 GHz, 11.20-11.45 GHz and 12.75-13.25 GHz shall be applied if requested by an administration in respect of its submission as specified in the Attachment below.

ATTACHMENT TO Draft New RESOLUTION [CAN/USA/A7(E)-AP30B] (WRC‑19)

Additional measures for satellite networks in the fixed-satellite service in frequency bands subject to Appendix 30B for the enhancement
of equitable access to these frequency bands

1 The special procedure described in this Attachment can only be applied once by an administration having no assignment in the List of Appendix **30B** or assignment submitted under § 6.1 of Appendix **30B**.

2 With regard to the latter case, in order to benefit from application of the special procedure, the submitting Administration may either withdraw or modify its submission previously sent to the Bureau under § 6.1 of Appendix **30B**.

3 Administrations seeking to apply this special procedure shall submit their request to the Bureau, with the information specified in § 6.1 of that Appendix. Specifically, this information shall contain:

a) in the cover letter to the Bureau, the information that the administration requests the use of this special procedure;

b) a service area limited to the territory as contained in its national allotment or submitted in the case that a new Member State of the Union does not have an allotment in the Plan and has not submitted a request under § 7.2 of Article **7** of Appendix **30B**;

c) a minimum ellipse determined by the test points which designate the service area. An administration may request the Bureau to create such diagram. See *resolves* section of the Resolution.

4If the information sent under § 3 above is found to be incomplete, the Bureau shall immediately seek from the administration concerned any clarification required and information not provided.

5 An administration using this special procedure shall effect coordination with other administrations as required in § 6 below before:

i) submitting a request under § 6.17 of Appendix **30B** to have the satellite network entered into the Appendix **30B** List, and

ii) bringing into use a frequency assignment.

6 Following the successful application of §§ 1 to 4 above, the Bureau shall, ahead of submissions not yet processed under § 6.3 of Appendix **30B**, promptly:

a) examine the information with respect to its conformity with § 6.3of Appendix **30B**;

b) identify, in accordance with Appendix 1of this Attachment, any administration with which coordination may need to be effected[[2]](#footnote-2)1;

c) include their names in the publication under d) below;

d) publish[[3]](#footnote-3)2, as appropriate, the complete information in the International Frequency Information Circular (BR IFIC) within the time-limit as specified in Appendix **30B**;

e) inform the administrations concerned of its actions and communicate the results of its calculations, drawing attention to the relevant BR IFIC.

7 In applying §§ 6.5, 6.12, 6.14, 6.21 and 6.22 of Appendix **30B**, the criteria in Annex 4 of Appendix **30B** shall be replaced by those given in Appendix 1 of this Attachment.

8 The provisions in this Attachment are supplementary to the provisions of Article 6 ofAppendix **30B**.

appendix 1 to aTTACHMENT TO Draft New
RESOLUTION [CAN/USA/A7(E)-AP30B] (WRC‑19)

Criteria for determining whether an assignment is considered to be affected by networks submitted to Appendix 30B under this Resolution

The criteria as contained in Annex 4 of Appendix **30B** continue to apply in order to determine if a proposed new assignment applying the procedures of this Attachment affects:

a) national allotments in the Plan;

b) an assignment stemming from the conversion of an allotment into an assignment without modification or with modification inside the envelope of the allotment;

c) allotment requested under Article 7 of Appendix **30B** by a new Member State of the Union which has received unfavourable findings under Article 7 and has been subsequently treated as a submission under § 6.1 of Appendix **30B**;

d) assignments stemming from the application of § 6.35 of Appendix **30B**;

e) assignments for which the procedures of this Resolution have been previously applied.

An assignment which appears in the List or which the Bureau has previously examined after receiving complete information and published under § 6.7 of Appendix **30B**, which does not fall into any of the above categories and which is not applying the procedures of this Attachment is considered as being affected by a proposed new assignment that is applying the procedures of this Attachment:

1) if the orbital spacing between its orbital position and the orbital position of the proposed new assignment is equal to or less than:

1.1) 7° in the 4 500-4 800 MHz (space-to-Earth) and 6 725-7 025 MHz (Earth-to-space) frequency bands;

1.2) 6° in the 10.70-10.95 GHz (space-to-Earth), 11.20-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) frequency bands;

2) however, an administration is considered as not being affected by a proposed new assignment that is applying the procedures of this Attachment if the conditions listed in 2.1 or 2.2 are satisfied:

2.1) the calculated[[4]](#footnote-4)3 Earth-to-space single-entry carrier-to-interference (*C*/*I*)*u* value at each test point associated with the assignment under consideration is greater than or equal to a reference value that is 27 dB, or (*C*/*N*)*u* + 6 dB[[5]](#footnote-5)4, or any already accepted Earth-to-space single entry (*C/I*), whichever is the lowest and the calculated3 space-to-Earth single-entry (*C*/*I*)*d* value everywhere within the service area of the assignment under consideration is greater than or equal to a reference value[[6]](#footnote-6)5 that is 23.65 dB, or (*C*/*N*)*d* + 8.65 dB[[7]](#footnote-7)6, or any already accepted value whichever is the lowest, and

 the calculated3 overall aggregate (*C*/*I*)*agg* value at each test point associated with the assignment under consideration, is greater than or equal to a reference value that is 21 dB, or (*C*/*N*)*t* + 7 dB[[8]](#footnote-8)7, or any already accepted overall aggregate (*C*/*I*)*agg* value, whichever is the lowest, with a tolerance of 0.45 dB[[9]](#footnote-9)8 in the case of assignments not stemming from the conversion of an allotment into an assignment without modification, or when the modification is within the envelope characteristics of the initial allotment;

2.2) in the 4 500-4 800 MHz (space-to-Earth) frequency band 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 | −240.5 | dB(W/(m2 ∙ Hz)) |
| 0.09 | < | θ | ≤ | 3 | −240.5 + 20log(θ/0.09) | dB(W/(m2 ∙ Hz)) |
| 3 | < | θ | ≤ | 5.5 | −216.8 + 0.75 ∙ θ2 | dB(W/(m2 ∙ Hz)) |
| 5.5 | < | θ | ≤ | 7 | −193.8 + 25log(θ/5.6) | dB(W/(m2 ∙ Hz)) |

 where θ denotes nominal geocentric separation (degrees) between interfering and interfered with satellite networks;

 in the 6 725-7 025 MHz (Earth-to-space) the pfd produced at the location in the geostationary-satellite orbit of the potentially affected assignment under assumed free-space propagation conditions does not exceed −201.0 - GRx dB(W/(m2 ∙ Hz) where *GRx* is the relative space station uplink receive antenna gain of the potentially affected assignment at the location of the interfering earth station);

 in the 10.7-10.95 and 11.2-11.45 GHz (space-to-Earth) frequency bands, 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 | −235.0 | dB(W/(m2 ∙ Hz)) |
| 0.05 | < | θ | ≤ | 3 | −235.0 + 20log(θ/0.05) | dB(W/(m2 ∙ Hz)) |
| 3 | < | θ | ≤ | 5 | −207.9 + 0.95 ∙ θ2 | dB(W/(m2 ∙ Hz)) |
| 5 | < | θ | ≤ | 6 | −184.2 + 25log(θ/5) | dB(W/(m2 ∙ Hz)) |

 where θ denotes nominal geocentric separation (degrees) between interfering and interfered with satellite networks;

 in the 12.75-13.25 GHz (Earth-to-space) frequency band, the pfd produced at the location in the geostationary-satellite orbit of the potentially affected assignment under assumed free-space propagation conditions does not exceed −205.0 dB - GRx (W/(m2 ∙ Hz) where *GRx* is the relative space station uplink receive antenna gain of the potentially affected assignment at the location of the interfering earth station).

In addition to the above, and as a consequence of the reduced coordination arc in 1) above as compared to that in Annex 3 to Appendix **30B**, the following limits shall be applied, instead of the limits contained in Annex 3 to Appendix **30B**,for submissions made under this Resolution.

Under assumed free-space propagation conditions, the power flux-density (space-to-Earth) of a proposed new allotment or assignment produced on any portion of the surface of the Earth shall not exceed:

– −131.4 dB(W/(m2 · MHz)) in the 4 500-4 800 MHz frequency band; and

– −118.4 dB(W/(m2 · MHz)) in the 10.70-10.95 GHz and 11.20-11.45 GHz frequency bands.

Under assumed free-space propagation conditions, the power flux-density (Earth-to-space) of a proposed new allotment or assignment shall not exceed:

– −140.0 dB(W/(m2 · MHz)) towards any location in the geostationary-satellite orbit located more than 7° from the proposed orbital position in the 6 725-7 025 MHz frequency band; and

– −133.0 dB(W/(m2 · MHz)) towards any location in the geostationary-satellite orbit located more than 6° from the proposed orbital position in the 12.75-13.25 GHz frequency band.

appendix 2 to aTTACHMENT TO Draft New
RESOLUTION [CAN/USA/A7(E)-AP30B] (WRC‑19)

Protection criteria for new incoming network

|  |  |  |
| --- | --- | --- |
| Incoming network | Allotments or assignments to be protected | Protection criteria |
| Assignment applying the special procedure  | Allotment in the Plan | Annex 4 |
| Assignment converted from allotment without modification  | Annex 4 |
| Assignment converted from allotment with modification within the envelope of the allotment | Annex 4 |
| Assignment converted from allotment with modification outside the envelope of the allotment and the special procedure applied | Annex 4 |
| Assignment converted from allotment with modification outside the envelope of the allotment and the special procedure NOT applied | New criteria |
| Former existing system | New criteria |
| Additional system for which the special procedure applied | Annex 4 |
| Additional system for which the special procedure NOT applied | New criteria |
| Request under Article 7 but transferred to Article 6 | Annex 4 |
| New allotment through the application of § 6.35 | Annex 4 |
| Conversion of allotment or new additional system for which the special procedure NOT applied | All  | Annex 4 |

**Reasons:** To convert their national allotment included in Appendix **30B** of the RR into an assignment with characteristics that exceed the initial allotment or wish to introduce a new network.

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1. 2*bis* Draft new Resolution **[CAN/USA/A7(E)-AP30B] (WRC‑19)** applies. [↑](#footnote-ref-1)
2. 1 The Bureau shall also identify the specific satellite networks with which coordination needs to be effected. [↑](#footnote-ref-2)
3. 2 If the payments are not received in accordance with the provisions of Council Decision 482, as amended, on the implementation of cost recovery for satellite network filings, the Bureau shall cancel the publication, after informing the administration concerned. The Bureau shall inform all administrations of such action and that the network specified in the publication in question no longer has to be taken into consideration by the Bureau and other administrations. The Bureau shall send a reminder to the notifying administration not later than two months prior to the deadline for the payment in accordance with the above-mentioned Council Decision 482 unless the payment has already been received. [↑](#footnote-ref-3)
4. 3 Including a computational precision of 0.05 dB. [↑](#footnote-ref-4)
5. 4 *(C*/*N)u* is calculated as in Appendix 2 to Annex 4 of Appendix **30B**. [↑](#footnote-ref-5)
6. 5 The reference values within the service area are interpolated from the reference values on the test points. [↑](#footnote-ref-6)
7. 6 *(C*/*N*)*d* is calculated as in Appendix 2 to Annex 4 of Appendix **30B**. [↑](#footnote-ref-7)
8. 7 *(C*/*N)t* is calculated as in Appendix 2 of Annex 4 of Appendix **30B**. [↑](#footnote-ref-8)
9. 8 Inclusive of the 0.05 dB computational precision. [↑](#footnote-ref-9)