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| **Radiocommunication Study Groups** |  |
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| **9 September 2022** |
| **English only** |
| Saudi Arabia (Kingdom of) |
| material for Preliminary DRAFT CPM TEXT FOR WRC-23 agenda item 7, Topic h(Enhanced protection of RR AP**30**/**30A**/**30B)** |
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The May 2022 meeting of Working Party 4A agreed to develop draft CPM Text on the subject of improving protection of assignments in the so-called Planned Bands. This contribution proposes some improvements to that draft text, as attached, specifically:

– to structure the material into background, issues, and a summary of method(s), and

– to make minor edits to the proposed method.

**Attachment:** 1

aTTACHMENT

CHAPTER 4

Satellite issues

(Agenda items 1.15, 1.16, 1.17, 1.18, 1.19, 7)

Agenda item 7

(WP 4A / -)

*7 to consider possible changes, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, on 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 the rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit;*

Resolution **86 (Rev.WRC‑07)** – *Implementation of Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference*

# 4/7/8  Topic H – Enhanced protection of RR Appendices 30/30A in Regions 1 and 3 and RR Appendix 30B

## 4/7/8.1 Executive summary

[Text of the executive summary, not more than half a page of text to describe briefly the purpose of Topic G, summarize the results of the studies carried out and, most importantly, provide a brief description of the method(s) identified that may satisfy Topic G. See also §A2.1 of Annex 2 to [Resolution ITU-R 2-8](http://www.itu.int/pub/R-RES-R.2-8-2019)]

## 4/7/8.2 Background

Before WRC-15, in accordance with § 4.1.10 of Article 4 of RR Appendix **30/30A**, an administration that has not notified its comments either to the administration seeking agreement or to the Bureau within a period of four months following the date of its BR IFIC referred to in § 4.1.5 shall be deemed to have agreed to the proposed assignment. This concept of “implicit agreement” since WRC-2000 had led to a situation in which the reference situation (EPM – equivalent protection margin) of many assignments in the BSS Plans has severely been degraded.

WRC-15 modified the above-mentioned § 4.1.10 indicating that an Administration that has not notified its agreement within a period of four months following the date of the BR IFIC referred to in § 4.1.5 shall be deemed to have not agreed to the proposed assignment unless the provisions of §§ 4.1.10a to 4.1.10d and § 4.1.21 are applied.

However, if the provisions of §§ 4.1.10a to 4.1.10d and § 4.1.21 are applied, the use of the concept of “implicit agreement” would lead to the same situation in which the “reference situation” (EPM – equivalent protection margin) of many assignments in the BSS Plans would severely be degraded. It is noted that § 4.1.10d provides only 30 days to an Administration to react.

The revision of the Regions 1 and 3 Plan by WRC-2000 was accompanied with an increase in the equivalent downlink protection margin from 0.25 dB to a value of 0.45 dB to facilitate the replan. However, after revising the Plans the tolerance was maintained at 0.45 dB, despite Plan allotments holding a higher status than List assignments.

In respect of RR Appendix **30B**, a similar situation can also occur when an administration intends to convert an allotment into an assignment or when an administration, or one acting on behalf of a group of named administrations, intends to introduce an additional system or modify the characteristics of assignments in the List that have been brought into use in accordance with the RR Appendix **30B**.In that case the administration shall submit to the Radiocommunication Bureau all required information as specified in RR Appendix **4**. Then, the Bureau determines administrations whose allotments in the Plan, or assignments in the List or pending assignments are considered as being affected by this assignment under § 6.5 of RR Appendix **30B**.

Affected administrations have 4 months after the publication of the Special Section of this assignment to comment it (§ 6.10) plus an additional period of 1-month subject to application of § 6.13. If, after this period, despite several reminders sent by the Bureau (i.e., § 6.9, § 6.11, § 6.14, § 6.14*bis*), the affected administration has not given a decision, this administration is considered as given its implicit agreement to this assignment under § 6.15.

## 4/7/8.3 Summary and analysis of the results of ITU-R studies

It is well-known that many assignments in the Plans have been degraded due to the additional of “List” networks, some to the extent of preventing any effective use of those assignments.

Statistics provided by the Bureau to ITU-R studies have demonstrated that for the case of both Regions 1 and 3 BSS Plan (RR Appendices **30/30A**) assignments and for RR Appendix **30B** allotments, the reference situation can be degraded due to the “implicit agreement” aspect of these Appendices, leading to a situation where these assignments/allotments become effectively unusable. The tables below provide some examples of the impact that the implicit agreement aspect of the Plans can have over time on the reference situation for the assignments/allotments in those Plans.

Examples of Change in EPM for downlink Appendix 30/30A
Plan assignments over time

| Adm | WRC-2000 | Oct. 2021 |
| --- | --- | --- |
| Position(deg.E) | Min.EPM(dB) | Max.EPM(dB) | Min.EPM(dB) | Max.EPM(dB) |
| AFG | 50 | −0.5 | 5.68 | −14.24 | −4.52 |
| AFS | 4.8 | 4.54 | 10.68 | −18.8 | −16.6 |
| ALB | 62 | 8.55 | 36.43 | −21.37 | −17.78 |
| ARM | 22.8 | 0.43 | 5.42 | −18.38 | −12.63 |
| ARS | 17 | −0.39 | 10.31 | −21.38 | 0.1 |
| ARS | 17 | 1.98 | 7.83 | −14.53 | 1.59 |
| AZE | 23.2 | −0.05 | 7.7 | −18.82 | −15.22 |
| BDI | 11 | 3.03 | 6.26 | −17.72 | −15.37 |
| BEL | 38.2 | 1.73 | 5.78 | −19.35 | −16.7 |
| BEN | −19.2 | 2.61 | 6.07 | 1.83[[1]](#footnote-1) | 5.33 |
| BIH | 56 | 5.88 | 8.43 | −14.14 | −11.31 |
| BLR | 37.8 | 1.33 | 5.39 | −11.92 | −6.67 |
| BOT | −0.8 | 0.85 | 4.29 | −21 | −17.81 |
| BRM | 104 | −0.08 | 8.38 | −12.31 | 1.15 |
| BRU | 74 | 4.48 | 7.03 | −17.29 | −16.2 |
| BTN | 86 | 8.87 | 14.55 | −10.78 | −7.42 |
| CAF | −13.2 | 1.35 | 7.3 | −13.61 | −4.68 |
| CBG | 86 | 9.65 | 13.31 | −9.78 | −1.98 |
| ZWE | −0.8 | 2.59 | 8.46 | −23.25 | −20.86 |

Examples of impact of implicit agreement on
AP30B Allotments over time for 10/11-12/13 GHz bands

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Adm | Nominal orbital position (degrees) | Difference in Min aggregate *C/I* ration (dB) (2009 - 2021) | Difference in Max aggregate *C/I* ration (dB) (2009 - 2021) | Comment |
| AND | −41 | −36.64 | −36.64 | Degradation due to implicit agreement applied |
| ATG | −77.7 | −24.49 | −24.49 | Degradation due to implicit agreement applied |
| BDI | −3.5 | −27.91 | −29.46 | Degradation due to implicit agreement applied |
| BOT | 21.2 | −7.97 | −9.00 | Degradation due to implicit agreement applied |
| BRB | −29.6 | −27.98 | −27.98 | Degradation due to implicit agreement applied |
| BTN | 59.1 | −18.12 | −17.84 | Degradation due to implicit agreement applied |
| CLN | 121.5 | −17.37 | −17.61 | Degradation due to implicit agreement applied |
| COG | −16.35 | −28.09 | −28.76 | Degradation due to implicit agreement applied |
| CVA | 59 | −19.52 | −19.52 | Degradation due to implicit agreement applied |

These findings highlight the problems created by the addition of List systems in the various Plans.

## 4/7/8.4 Methods to satisfy Topic H

### 4/7/8.4.1 Method H1: No Change (NOC)

### 4/7/8.4.2 Method H2

Remove the assumption of “implicit agreement” in the case of Plan assignments, to ensure that the rights of an administration to use its Planned allotments are fully protected.

For the RR Appendices **30**/**30A** Plansis applied , instead of 0.45 dB. This is due to the fact that an assignment in the Plan is for future use and that it has higher status than an assignment in the List stemming from an additional use.

4/7/8.5 Regulatory and procedural considerations

APPENDIX 30 (REV.WRC‑19)\*

Provisions for all services and associated Plans and List1 for
the broadcasting-satellite service in the frequency bands
11.7-12.2 GHz (in Region 3), 11.7-12.5 GHz (in Region 1)
         and 12.2-12.7 GHz (in Region 2)    (WRC‑03)

ARTICLE 4     (Rev.WRC‑19)

Procedures for modifications to the Region 2 Plan or
for additional uses in Regions 1 and 33

## 4.1 Provisions applicable to Regions 1 and 3

…

4.1.10a After the same time period as specified in § 4.1.10, the notifying administration may, pursuant to § 4.1.21, request the Bureau to assist in respect of an administration which has not replied within this time period.     (WRC-15)

4.1.10b The Bureau, acting under § 4.1.10a, shall send a reminder to the administration which has not replied, together with the results of its previously published compatibility analysis, containing the change in the values referred to in paragraph 1b of Annex 1 to Appendix **30**, requesting a decision.     (WRC-15)

4.1.10c Fifteen days before the expiry of the 30-day period referred to in § 4.1.10d, the Bureau shall send a reminder to the above-mentioned administration drawing its attention to the consequence of no reply.     (WRC-15)

4.1.10d If no decision is communicated to the Bureau within 30 days after the date of dispatch of the reminder under § 4.1.10b, it shall be deemed that the administration which has not given a decision has agreed to the proposed assignment.    (WRC-15)

ADD

4.1.10e The course of action described in §§ 4.1.10a to 4.1.10d do not apply to an assignment in the Plan in Regions 1 and 3 or an assignment intended to enter in the Regions 1 and 3 Plan.    (WRC-23)

ANNEX 1     (REV.WRC‑19)

Limits for determining whether a service of an administration is affected
by a proposed modification to the Region 2 Plan or by a proposed
new or modified assignment in the Regions 1 and 3 List
or when it is necessary under this Appendix to seek
the agreement of any other administration25

MOD

# 1 Limits for the interference into frequency assignments in conformity with the Regions 1 and 3 Plan or with the Regions 1 and 3 List or into new or modified assignments in the Regions 1 and 3 List

…

*b)* the effect of the proposed new or modified assignments in the List is that the equivalent downlink protection margin27 corresponding to a test point of its assignment in the Regions 1 and 3 Plan or List, or for which the procedure of Article 4 has been initiated, including cumulative effect of any previous modification to the List or any previous agreement, does not fall more than 0.45 dB[[2]](#footnote-2)XX below 0 dB or, if already negative, more than 0.45 dBXX below the value resulting from:

– the Regions 1 and 3 Plan and List as established by WRC‑2000; *or*

– a proposed new or modified assignment to the List in accordance with this Appendix; *or*

– a new entry in the Regions 1 and 3 List as a result of successful application of Article 4 procedures.

NOTE – In performing the calculation, the effect at the receiver input of all the co-channel and adjacent-channel signals is expressed in terms of one equivalent co-channel interfering signal. This value is usually expressed in decibels.     (WRC‑03)

APPENDIX 30A (REV.WRC‑19) \*

Provisions and associated Plans and List1 for feeder links for the broadcasting-satellite service (11.7-12.5 GHz in Region 1, 12.2-12.7 GHz
in Region 2 and 11.7-12.2 GHz in Region 3) in the frequency bands
14.5-14.8 GHz2 and 17.3-18.1 GHz in Regions 1 and 3,
and 17.3-17.8 GHz in Region 2     (WRC‑03)

ARTICLE 4     (Rev.WRC‑19)

Procedures for modifications to the Region 2 feeder-link Plan
or for additional uses in Regions 1 and 3

## 4.1 Provisions applicable to Regions 1 and 3

…

4.1.10a After the same time period as specified in § 4.1.10, the notifying administration may, pursuant to § 4.1.21, request the Bureau to assist in respect of an administration which has not replied within this time period.     (WRC-15)

4.1.10b The Bureau, acting under § 4.1.10a, shall send a reminder to the administration which has not replied, together with the results of its previously published compatibility analysis, containing the change in the values referred to in paragraph 4 of Annex 1 to Appendix **30A**, requesting a decision.     (WRC-15)

4.1.10c Fifteen days before the expiry of the 30-day period referred to in § 4.1.10d, the Bureau shall send a reminder to the above-mentioned administration drawing its attention to the consequence of no reply.     (WRC-15)

4.1.10d If no decision is communicated to the Bureau within 30 days after the date of dispatch of the reminder under § 4.1.10b, it shall be deemed that the administration which has not given a decision has agreed to the proposed assignment.     (WRC-15)

ADD

4.1.10e The course of action described in §§ 4.1.10a to 4.1.10d do not apply to an assignment in the Regions 1 and 3 Plan or an assignment intended to enter in the Plan in Regions 1 and 3.    (WRC-23)

ANNEX 1     (Rev.WRC‑19)

Limits for determining whether a service of an administration is considered
to be affected by a proposed modification to the Region 2 feeder-link Plan
or by a proposed new or modified assignment in the Regions 1 and 3
feeder-link List or when it is necessary under this Appendix to seek
the agreement of any other administration     (Rev.WRC‑03)

MOD

# 4 Limits to the interference into frequency assignments in conformity with the Regions 1 and 3 feeder-link Plan or with the Regions 1 and 3 feeder-link List or proposed new or modified assignments in the Regions 1 and 3 feeder-link List     (WRC‑03)

…

However, an administration is not considered as being affected if, under assumed free-space propagation conditions, the effect of the proposed new or modified assignments in the feeder-link List is that the feeder-link equivalent protection margin35 corresponding to a test point of its assignment in the feeder-link Plan or the feeder-link List or for which the procedure of Article 4 has been initiated, including the cumulative effect of any previous modification to the feeder-link List or any previous agreement, does not fall more than 0.45 dB[[3]](#footnote-3)XX1 below 0 dB, or, if already negative, more than 0.45 dBXX1 below the value resulting from:

– the Regions 1 and 3 feeder-link Plan and List as established by WRC‑2000; *or*

– a proposed new or modified assignment to the feeder-link List in accordance with this Appendix; *or*

– a new entry in the Regions 1 and 3 feeder-link List as a result of the successful application of Article 4 procedures.     (WRC‑03)

For a proposed new or modified assignment to the feeder-link List, in the interference analysis, for each test point, the antenna characteristics described in § 3.5 of Annex 3 shall apply.     (WRC‑03)

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

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, 2*bis*     (WRC‑19)

…

6.13 After the same time period as specified in § 6.10, the notifying administration may request the Bureau to assist in respect of an administration which has not replied within this time period.

6.14 The Bureau, acting on a request for assistance under § 6.13, shall send a reminder to the administration which has not replied, together with the results of its previously published compatibility analysis, containing the change in the values referred to in paragraph 2.3 of Annex 4 to Appendix **30B**, requesting a decision.      (WRC‑15)

6.14*bis* Fifteen days before the expiry of the 30-day period referred to in § 6.15, the Bureau shall send a reminder to the above-mentioned administration drawing its attention to the consequence of no reply.

6.15 If no decision is communicated to the Bureau within thirty days after the date of dispatch of the reminder under § 6.14, it shall be deemed that the administration which has not given a decision has agreed to the proposed assignment.

MOD

6.15*bis* The course of action described in §§ 6.13 to 6.15 do not apply to the agreement requested under § 6.6 or to allotments in the Plan or an assignment treated under Article 6 in accordance with § 7.7 of Article 7.     (WRC‑23)

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1. Temporary increase following the cancellation of some assignments in the List. [↑](#footnote-ref-1)
2. XX For the protection of an assignment in the Regions 1 and 3 Plan, a value of 0.25 dB shall be used instead. [↑](#footnote-ref-2)
3. XX1 For protection of an assignment in the Regions 1 and 3 feeder-link Plan, a value of 0.25 dB shall be used instead. [↑](#footnote-ref-3)