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|  | ASIA-PACIFIC TELECOMMUNITY | Document No: |
| **The 6th Meeting of the APT Conference Preparatory Group for WRC-23 (APG23-6)** | **APG23-6/OUT-46** |
| 14 – 19 August 2023, Brisbane, Australia | 19 August 2023 |

Working Party 4

**APT VIEW and Preliminary APT Common Proposal**

**on WRC-23 agenda item 7 (TOPIC F)**

**Agenda Item 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.*

# Topic F: Exclusion of feeder-link/uplink service & coverage areas in AP30A/30B

**1. Background**

* Provision 3.4 of Article 3 of RR Appendix **30A** stipulates that: “The Regions 1 and 3 feeder-link Plan is based on national coverage from the geostationary-satellite orbit. The associated procedures contained in this Appendix are intended to promote long-term flexibility of the Plan and to avoid monopolization of the planned bands and orbit by a country or a group of countries”.
* Provision 2.6bis of RR Appendix **30B** stipulates that: “When submitting additional system(s), administrations shall fully comply with the requirements stipulated in Article 44 of the ITU Constitution. In particular, these administrations shall limit the number of orbital positions and associated spectrum so that:
* the orbital/spectrum natural resources are used rationally, efficiently and economically; and
* the use of multiple orbital locations to cover the same service area is avoided.       (WRC‑07)”.
* In view of the purpose of the planned space services together with their associated procedures, the intent of this Topic is to address the issue of submissions with global uplink coverage area or the coverage area extending beyond the service area which poses an obstacle for an administration or a group of named administrations to deploy its national system or their sub-regional systems.
* With regard to the downlink service area of the interfered-with network situated outside the excluded territories of notifying administration(s), shaped beam technology could be applied to meet the protection criteria with respect to the interfered-with network (existing). The shaped beam is to be applicable to the satellite network of those notifying administrations and is thus independent of the administration of the interfered-with satellite network (existing).
* With regard to the feeder-link/uplink, the interference is normally calculated at the output of receiving satellite antenna of an interfered-with satellite network. It is therefore dependent on the satellite receiving antenna coverage of the interfered-with satellite and the location of interfering earth stations of the other satellite network.
* There are 4 methods shown in Section 4/7/6.4 of the [final CPM Report](https://www.itu.int/dms_pub/itu-r/md/19/cpm23.2/r/R19-CPM23.2-R-0001!!MSW-E.docx):
* Method F1: No change to the Radio Regulations.
* Method F2: making amendments to provisions of Appendix 30A/Appendix 30B to request notifying administration of network with high receiving sensitivity (relative satellite antenna gain of at least -20 dB) over territory of other administration to accept uplink interference coming from territory of other administration, and to remove right to claim protection from harmful interference, from territory of administration that has not agreed to be included in service area
* Method F3: making amendments to provisions of Appendix 30A/Appendix 30B to allow relocation of test points from excluded territory to new location, and to request notifying administration of a satellite network having relative satellite antenna gain derived from the minimum ellipse required to cover the service area of equal to or less than -20 dB over territory of other administration, to accept uplink interference coming from territory of other administration
* Method F4: to allow an administration to request the exclusion of its territory from the feeder-link service area of a satellite network of other administrations under Appendix 30A, and to include definition of feeder link coverage area in Annex 3 of Appendix 30A. In this Method the Bureau will generate coverage diagrams for List assignments based on the minimum ellipse determined by the set of test points of the satellite network[[1]](#footnote-1)36, [[2]](#footnote-2)37 and the reference antenna patterns used for replanning at WRC 97 of § 3.7.3 of Annex 3 to this Appendix, using the relevant BR software applications

**2. Documents**

* Input Documents AP23-6/[INP-39(J)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-39_Japan_WP4_Views_WRC-23_Agenda_Item_7.docx), [INP-56(SNG)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-56_Singapore_WP4_PACP_WRC-23_Agenda_Items_0.docx), [INP-61(THA)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-61_Thailand_WP4_PACP_WRC-23_Agenda_Items.docx), [INP-68(IRN)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-68_Iran_WP4_Preliminary_Views_on_WRC-23_Agenda_Items.docx), [INP-83(AUS)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-83_Australia_WP4_PACP_WRC-23_Agenda_Items.docx), [INP-90(Rev.1)(KOR)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-90R1_KOR_WP4_PACP_WRC-23_Agenda_Items.docx), [INP-106(CHN)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-106_China_WP4_PACP_WRC-23_Agenda_Items.docx), [INP-112(MLA)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-112_Malaysia_WP4_PACP_WRC-23_Agenda_Items.docx), [INP-120(VTN)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-120_VietNam_WP4_PACP_WRC-23_Agenda_Items.docx), [INP-123(MNG)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-123_Mongolia_WP4_PACP_WRC-23_Agenda_Item_7.docx)
* Information Documents APG23-6/[INF-28(GSOA)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-28_GSOA_Positions_on_WRC-23_Agenda_Items_0.docx), [INF-35(Chairs of DG 7)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-35_Brief_on_AI_7.docx), [INF-45(RCC)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-45_Status_of_RCC_preparation_to_WRC-23.pdf), [INF-46(CEPT)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-46_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf), [INF-52(CITEL)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-52_CITEL_preparation_for_WRC-23.pdf)

**3. Summary of discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 Japan - Document APG23-6/INP-39**

* For **Topic F**, Japan supports the subjects of excluding the territory of an administration from the uplink service area and defining the coverage area to be the smallest area which encompasses the service area in RR Appendix **30A** for Regions 1 and 3, while Japan has no intention on extending the latter idea to RR Appendix **30B**.
* Japan supports Method F4 in the CPM Report.

**3.1.2 Singapore (Republic of) - Document APG23-6/INP-56**

* + Supports developing specific measures to avoid creating obstacles to other administrations wishing to establish satellite networks over their territories, taking into account the need for the roll-off of the space station receive beam to be fully protected. The regulatory and technical solutions should be implementable and not unduly restrict the operations of other satellite networks, in particular those already in operation.
  + It is noted that alignment of the coverage area with the service area is not always technically feasible.
  + Supports Method F3 in making amendments to provisions of Appendix **30A**/Appendix **30B** to allow relocation of test points from excluded territory to new location, and to request notifying administration of a satellite network having relative satellite antenna gain derived from the minimum ellipse required to cover the service area of equal to or less than −20 dB over territory of other administration, to accept uplink interference coming from territory of other administration.

**3.1.3 Thailand (Kingdom of) – Document APG23-6/INP-61**

* + Thailand supports Method F3 in the CPM Report to exclude uplink service area in RR Appendix **30A** for Regions 1 and 3 and RR Appendix **30B**.



**3.1.4 Iran (Islamic Republic of) – Document APG23-6/INP-68**

* + I.R. of Iran supports the exclusion of the territory of a country from the service area of feeder link of another country and the adjustment of coverage area to the smallest to be aligned with the service area of feeder link under RR AP **30A**.
  + I.R. of Iran supports developing specific measures to avoid creating obstacles to those administrations wishing to establish satellite networks of RR AP **30B** over their territories, taking into account the roll-off of the receiving beams of adjacent satellite networks. Further studies on the adjustment of the coverage area to the smallest to be aligned with the service area of the RR AP **30B** submissions under consideration is required, since the alignment of the coverage area with the service area may not be always feasible, especially when the satellite network is already in operation.
  + I.R. of Iran is of the view that relevant elements of provision 6.16 of RR Appendix **30B** should also be included in the final method, allowing an administration that at any time before, during, or after the publication to request exclusion of its territory from the feeder-link service area of a satellite network of other administrations.
  + Even if, an administration does not request coordination, that administration allow to ask exclusion under provision 6.16 of the Appendix **30B** as stated in the following:

***Quote***

*“6.16 An administration may at any time during or after the above-mentioned four-month period inform the Bureau about its objection to being included in the service area of any assignment, even if this assignment has been entered in the List. The Bureau shall then inform the administration responsible for the assignment and exclude the territory and test points[[3]](#footnote-3)6bis that are within the territory of the objecting administration from the service area. The Bureau shall update the reference situation without reviewing the previous examinations.     (WRC‑19)”*

***Unquote***

* I.R. of Iran supports Method F2 as contain in draft CPM23-2 Report

**3.1.5 Australia – Document APG23-6/INP-83**

* Australia is yet to arrive at a position on this agenda item.
* Australia does not propose a Preliminary APT Common Proposal for this topic.

**3.1.6 Korea (Republic of) – Document APG23-6/INP-90(Rev.1)**

* As the Republic of Korea supports excluding the territory of a country from the service area of the feeder link of RR AP **30A** and adjustment of coverage area of the feeder link to the smallest service area of that submission under RR AP **30A**, as well as adjustment of coverage area to the smallest to be aligned with the service area of the submissions under RR AP **30B**, among the methods presented in the CPM Report, Methods F2 or F3 can be supported.

**3.1.7 China (People’s Republic of) – Document APG23-6/INP-106**

* China supports the exclusion of the territory of a country from the service area of feeder link of another country and the adjustment of coverage area to the smallest to be aligned with the service area of feeder link under RR AP **30A**.
* China also supports developing specific measures to avoid creating obstacles to those administrations wishing to establish satellite networks of RR AP **30B** over their territories, taking into account the roll-off of the receiving beams of adjacent satellite networks. Further studies on the adjustment of the coverage area to the smallest to be aligned with the service area of the RR AP **30B** submissions under consideration is required, since the alignment of the coverage area with the service area may not be always feasible, especially when the satellite network is already in operation.

**3.1.8 Malaysia – Document APG23-6/INP-112**

* Malaysia supports development of appropriate regulatory measure for facilitation of equitable feeder-link/uplink spectrum access while taking into consideration existing assignment and allotments in RR Appendices **30A** and **30B**.
* Malaysia further supports the development of a procedure that allows exclusion of the territory of an administration from the feeder-link service area of a satellite network of other administrations when requested.

**3.1.9 Viet Nam (Socialist Republic of) – Document APG23-6/INP-120**

* Vietnam is of the view to support method F4. This method consists of two elements.
* In respect of RR Appendix **30A**:
  + a new provision under Article 4 of RR Appendix **30A** to allow an administration to request the exclusion of its territory from the feeder-link service area of a satellite network of other administrations;
  + amend Annex 3 of RR Appendix **30A** to include a definition of the feeder link coverage area.

*Reason: to establish adequate mechanisms to prevent one administration from creating an obstacle to the establishment of space systems by other countries in the feeder-link.*

**3.1.10 Mongolia – Document APG23-6/INP-123**

* Mongolia supports Method F4 of the CPM Report for Topic F.

**3.2 Summary of issues raised during the meeting**

* Some APT Members are of the view that relevant elements of provision **6.16** of RR Appendix **30B** should also be included in the final method of this Topic, allowing an administration that at any time before, during, or after the publication to request exclusion of its territory from the feeder-link service area of a satellite network of other administrations.

**4. APT View(s)**

* APT Members support the exclusion of the territory of a country from the service area of feeder link of another country and the adjustment of coverage area to the smallest to be aligned with the service area of feeder link under RR AP **30A**.
* APT Members support developing specific measures to avoid creating obstacles to those administrations wishing to establish satellite networks of RR AP **30B** over their territories, taking into account the roll-off of the receiving beams of adjacent satellite networks. Further studies on the adjustment of the coverage area to the smallest to be aligned with the service area of the RR AP **30B** submissions under consideration is required, since the alignment of the coverage area with the service area may not be always feasible, especially when the satellite network is already in operation.
* APT Members do not support Method F1 of the CPM Report.

**5. Preliminary APT Common Proposal**

* None.

**6. Issues for Consideration at APG Coordination Meeting at WRC-23 (if any)**

* None.

**7. Views from Other Organisations**

**7.1 Regional Groups**

**7.1.1 ASMG – (as of February 2023)**

* Support the introduction of provisions in Appendices 30A and 30B to establish regulatory and technical measures that allow administrations to use their assignments and encourage progressive between notifying administrations. Notwithstanding, the deployment of national or sub-regional satellite networks in accordance with Appendices 30A and 30B shall not be impeded. Taking into account the current operational satellite networks.

**7.1.2 ATU – (as of February 2023)**

* Note that for the down-link, there are provisions that facilitate an Administration or a group of named Administrations to coordinate the downlink. Nevertheless, it has not yet been the case for the feeder-link/up-link.
* Note that there is no provision for the feeder-link/uplink to prevent one Administration from creating an obstacle to the establishment of space systems by other countries in the feeder-link/uplink.
* Consider the following for satisfying this Topic:
* Introducing a provision in RR Appendix 30A that allows an Administration to request the exclusion of its national territory from the service area of satellite networks of other Administrations.
* Adding a footnote to that new provision and § 6.16 of Article 6 of Appendix 30B to request a notifying administration of a satellite network having high receiving sensitivity (relative satellite antenna gain of at least -20 dB) over territory of other Administration to accept uplink interference emanating from the territory of other Administration if so requested.
* Mandate WG4B to prepare the common African contribution proposing CPM text of the Topic to the next Working Party 4A.
  + 1. **CEPT – Document APG23-6/INF 46**
* Considering high level of completed coordination in Resolution 559 (WRC-19) between administrations, CEPT supports bilateral coordination solutions or national licensing conditions to address potential encountered problems on a case-by-case basis.
* CEPT considers that the current regulatory provisions are adequate to address this Topic and supports No Changes to the Radio Regulations.
* CEPT notes that, as an example, aligning the coverage area with the service area is not always technically feasible.
* CEPT encourages administrations involved in Resolution 559 (WRC-19) coordinations to make utmost efforts to communicate with requesting administrations and to timely reply in order to complete coordination.

**7.1.4 CITEL – Document APG23-6/INF-52**

**Preliminary Proposals (PP)**

* An Administration supports no change to the provisions of Appendix 30B based on Method F1 of the CPM report for Topic F.
* Another Administration supports:
  + The addition of a new provision in Article 4 of RR Appendix 30A to allow an Administration to request the exclusion of its territory from the feeder-link service area of a satellite network of other Administrations;
  + The addition of a new footnote in Article 4 of RR Appendix 30A and the revision of an existing footnote in Article 6 of RR Appendix 30B to allow the relocation of test points from the excluded territory to a new location within the remaining part of the feeder-link service area, and
  + The addition of new provisions in Article 4 of RR Appendix 30A and Article 6 of Appendix 30B to request a notifying administration of a satellite network having relative satellite antenna gain equal to or less than -20 dB over territory of other Administration to accept uplink interference emanating from the territory of other Administration if so requested.

**7.1.5 RCC – Document APG23-6/INF-45**

* Support further ITU-R studies on the impact of excluding feeder-link/up-link service and coverage areas in the bands subject to the RR Appendices 30A and 30B. No specific Method

**7.2 International Organisations**

**7.2.1 IARU R3**

* None.

**7.2.2 ICAO**

* None.

**7.2.3 IMO**

* None.

**7.2.4 WMO**

* None.

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1. 36 For assignments where Resolution **49** information has been received by the Bureau, the Bureau will use the set of test points as of the time of receipt of the Resolution **49** information. [↑](#footnote-ref-1)
2. 37 For assignments entered into the Regions 1 and 3 feeder-link List before [16 December 2023], the Bureau will use the coverage diagram as contained in the List. [↑](#footnote-ref-2)
3. 6*bis* The administration responsible for the assignment may request to relocate the downlink test points from the excluded territory to a new location within the remaining part of its service area.     (WRC‑19) [↑](#footnote-ref-3)