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| **The 4th Meeting of the APT Conference Preparatory**  **Group for WRC-23 (APG23-4)** | **APG23-4/OUT-33** |
| 15 – 20 August 2022, Bangkok, Thailand | 20 August 2022 |

Working Party 4

**PRELIMINARY VIEWs on WRC-23 agenda item 7**

**Topics A, b, C, D, E, F, G, H, I, J AND K**

**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.*

# General Aspect

1. Background

* In the implementation of Resolution **86** (Rev. Marrakesh, 2002), WRC-23 is invited by Resolution **86** (Rev. WRC-07) to consider, under the standing Agenda Item 7, any proposals which deal with deficiencies and improvements in the Regulatory/Procedural matters for frequency assignments pertaining to space service, ensuring these procedures, and the related Appendices of the Radio Regulations support latest technologies and regulatory practices, as far as possible.
* Working Party (WP) 4A, is the ITU-R group responsible for WRC-23 agenda item 7 (AI 7). To date, six WP 4A meetings and five Correspondence Group (CG) meetings have been held.
* During the sixth meeting of WP 4A held from 11-20 May 2022, the Ad-Hoc of the Plenary on WRC-23 AI 7 identified 5 new Topics i.e. H, I, J, K, L and 2 new sub topics i.e. D2 and D3. The final list of WRC-23 AI 7 Topics established by WP 4A is shown in the table below:

| **Agenda item 7 Topic** | **Status** |
| --- | --- |
| Topic A – Non-GSO Orbital tolerances | See Doc. 4A/691 Annex [32](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N32!MSW-E.docx) for preliminary draft CPM text  See Doc. 4A/691 Annex [25](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N25!MSW-E.docx) for current WD |
| Topic B – Post-milestone reporting | See Doc. 4A/691 Annex [33](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N33!MSW-E.docx) for preliminary draft CPM text  See Doc. 4A/691 Annex [26](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N26!MSW-E.docx) for current WD |
| Topic C – 7/8 & 20/30 GHz GSO MSS protection | See Doc. 4A/691 Annex [34](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N34!MSW-E.docx) for preliminary draft CPM text  See Doc. 4A/691 Annex [27](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N27!MSW-E.docx) for current WD |
| Topic D –  D1 – Mod to App 1 to Annex 4 of RR AP**30B**  D2 – New AP4 parameters for Rec. S.1503 updates  D3 – BR reminders for BIU/BBIU | See Doc. [4A/392 Annex 35](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0392!N35!MSW-E.docx) for draft CPM text  No current draft. Use Doc. [4A/657](https://www.itu.int/md/R19-WP4A-C-0657/en) for source material  No current draft. Use Doc. [4A/668](https://www.itu.int/md/R19-WP4A-C-0668/en) for source material |
| Topic E – AP30B Improved procedures for new Member States | Use Documents [4A/392N20](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0392!N20!MSW-E.docx) and [4A/483](https://www.itu.int/md/R19-WP4A-C-0483/en) for some draft CPM text source material |
| Topic F – Excluding uplink service area in AP30A for R1&3 and AP30B | Use Documents 4A/[479](https://www.itu.int/md/R19-WP4A-C-0479/en), [512](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP4A-C-0512), [664](https://www.itu.int/md/R19-WP4A-C-0664/en), [672](https://www.itu.int/md/R19-WP4A-C-0672/en) for some draft CPM text source material |
| Topic G – Amendments to Res. **770 (WRC-19)** | See Doc. 4A/691 Annex [35](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N35!MSW-E.docx) for preliminary draft CPM text  See Doc. 4A/691 Annex [3](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N03!MSW-E.docx) for WD-PDNR |
| Topic H – Enhanced protection of RR Appendices **30/30A** in R1&3 and RR Appendix **30B** | See Doc. 4A/691 Annex [36](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N36!MSW-E.docx) for preliminary draft CPM text |
| Topic I – Special agreements under RR Appendix **30B** | No current draft. Use Doc. [4A/641](https://www.itu.int/md/R19-WP4A-C-0641/en) for source material |
| Topic J – MODs to Res. **76 (Rev.WRC-15)** | See Doc. 4A/691 Annex [37](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N37!MSW-E.docx) for preliminary draft CPM text |
| Topic K – MODs to Res. **553 (Rev.WRC-15)** | No current draft. Use Doc. [4A/558](https://www.itu.int/md/R19-WP4A-C-0558/en) for source material |
| Topic L – TT&C for non-GSO in-orbit servicing | No current draft. Use Doc. [4A/663](https://www.itu.int/md/R19-WP4A-C-0663/en) for source material |

* Document [4A/691](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!!MSW-E.docx) - Report on the meeting of WP 4A (11-20 May 2022) and its associated annexes covers the current work on AI 7.
* The updated Work Plan for WP 4A could be found in Document [4A/691 (Annex 42)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N42!MSW-E.docx). Since the May 2022 meeting was the deadline to finalise the AI 7 Topics, the next WP 4A meeting in September 2022 will be dedicated to finalizing the draft CPM text for all WRC-23 AI 7 Topics.

2. Documents

* Input Documents AP23-4/INP[10(J)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [17(AUS)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [87(MNG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-87_Mongolia_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)
* Information Documents APG23-4/[INF02(ATU)](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx), [03(WMO)](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-03_WMO_Positions.docx), [21(ASMG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf), [28 (CITEL)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf), [44(RCC)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf), [48(CEPT)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)

3. Summary of discussions

**3.1 Summary of APT Members’ views**

**3.1.1 Japan** - **Document APG23-4/INP-10**

* Japan supports to review an advance publication, coordination, notification and recording procedures of satellite networks subject to this agenda item in accordance with Resolution 86 (Rev. Marrakech, 2002). Japan is of the view that the principle that satellite networks should be brought into use after conducting necessary frequency coordination should be maintained and that the procedures and associated regulations would be reviewed not by comprehensive way which may cause adverse impact on existing and future satellite networks, but by careful consideration of each issue under this agenda item respectively taking into account rational and efficient use of orbit/spectrum resources.

**3.1.2 Australia** - **Document APG23-4/INP-17**

* Australia supports consideration of possible changes to improve advance publication, coordination, notification and recording procedures for space services in the Radio Regulations in accordance with Resolution **86 (Rev.WRC 07)**, provided that such changes do not result in modification of frequency allocations in Article 5 of the Radio Regulations.

**3.1.3 Mongolia** - **Document APG23-4/INP-87**

* The Administration of Mongolia supports retaining the current process of continuing evolution at successive WRCs of the regime governing space services. However, Mongolia also supports the review of any RR provision which can bring accurate solutions to specific detected inconsistencies and develop new improved provisions with emphasis on solving the most urgent issues, i.e., well characterized issues whose improvement is urgent and impacting.

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

* None.

4. APT Preliminary View(s)

APT Members support consideration of possible changes to improve advance publication, coordination, notification and recording procedures for space services in the Radio Regulations in accordance with Resolution **86 (Rev.WRC-07)**, provided that such changes do not result in modification of frequency allocations in Article **5** of the Radio Regulations, except for the provisions in the footnotes of the Table of Frequency Allocations in Article **5** relating to advance publication, coordination, notification and recording procedures.

5. Other View(s) from APT Members

* None.

6. Issues for Consideration at Next APG Meeting

* None.

7. Views from Other Organisations

**7.1 Regional Groups**

7.1.1 ATU (as of August 2022) - Document APG23-4/INF-02

* None.

7.1.2 ASMG (as of August 2022) - Document APG23-4/INF-21

* None.

7.1.3 CEPT (as of August 2022) - Document APG23-4/INF-48

* CEPT supports retaining the current process of continuing evolution at successive WRCs of the regime governing space services. CEPT also favours a stable and predictable regulatory framework for efficient use of spectrum and orbit resources. CEPT intends to develop specific positions susceptible to bring improvement to the regulatory process.
* CEPT favours the review of any RR provision which can bring accurate solutions to specific detected inconsistencies and develop new improved provisions with emphasis on solving the most urgent issues, i.e., well characterized issues whose improvement is urgent and impacting.

7.1.4 CITEL (as of August 2022) - Document APG23-4/INF-28

* None.

7.1.5 RCC (as August 2022) - Document APG23-4/INF-44

* None.

**7.2 International Organisations**

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as of August 2022)

* None.

7.2.3 WMO (as of August 2022) - Document APG23-4/INF-03

* WMO does not support changes to the Radio Regulations that would impose unnecessary constraints on MetSat and EESS systems or that would overcomplicate the regulatory procedures for the corresponding ITU filings for the frequency bands that are used by these systems. WMO will follow the development of Agenda Item 7 issues as they are identified and studied.

7.2.3 IARU R3 (as of August 2022)

* None.

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# Topic A: Tolerances for Certain Orbital Characteristics of Non-GSO Space Stations in the FSS, BSS and MSS

1. Background

* WRC-19 invited the ITU-R to study “as a matter of urgency, tolerances for certain orbital characteristics of non-GSO space stations of the fixed-satellite, mobile-satellite or broadcasting satellite services to account for potential differences between the notified and deployed orbital characteristics for the inclination of the orbital plane, the altitude of the apogee of the space station, the altitude of the perigee of the space station and the argument of the perigee of the orbital plane.”[[1]](#footnote-1)
* The objective of these studies would be to determine the allowable differences between the values recorded in the MIFR for the specified orbital characteristics of non‑GSO space stations operating on notified frequency assignments and those representative of the actual deployment of these non-GSO space stations. Studies of tolerances arise from the obligations stipulated in the RR No. **11.44C** and No. **11.49.2** (and its associated sub-footnotes)**,** Resolution **35 (WRC-19)** and RR Appendix **4**.
* The concept of orbital tolerances for a space station on board a GSO satellite already exists with, in particular, item A.4.a.2 (Orbital tolerances) and its associated sub items, A.4.a.2.a (the planned longitudinal tolerance easterly limit), A.4.a.2.b (the planned longitudinal tolerance westerly limit) and A.4.a.2.c (the planned inclination excursion). Effective limits on some of these tolerances are contained elsewhere in the Radio Regulations (e.g., the constraint on E/W longitudinal tolerances for GSO satellites operating in unplanned bands in Section III of RR Article **22**). However, there are no equivalent limits for tolerances in RR Appendix **4** for a space station on board a non-GSO satellite. This difference was recognized during discussions at WRC-19 on the BIU of frequency assignments to non-GSO satellite systems and on the milestone-based approach for the implementation of frequency assignments to space stations in a non-geostationary orbit satellite system in specific frequency bands and services. This recognition led to the invitation for study mentioned above.

**Information on on-going ITU-R Study**

* The first WP 4A virtual meeting (28-29 May 2020) established Correspondence Group 5 (CG #5) and developed the associated Terms of Reference (ToR) for this CG, in order to advance the work on this Topic by electronic means, in the periods between WP 4A meetings. 2 CG meetings were held in 2020.
* During the third WP 4A virtual meeting (22 February – 3 March 2021), the meeting considered 2 inputs from the US that were consolidated into the Working Document (WD) towards a Preliminary Draft New Report on WRC-23 Agenda Item 7, Topic A. This WD is a compilation of inputs received so far from Luxembourg, Canada, US, China, Russia and Norway.
* During the fourth WP 4A virtual meeting (14 – 28 July 2021), there were inputs from US and Canada that were merged with the existing WD, but not discussed due to lack of time. The WD is found in Document [4A/392 (Annex 13](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0392!N13!MSW-E.docx)).
* During the fifth WP 4A virtual meeting (27 October – 4 November 2021), there were inputs from Canada and US that were merged into the existing WD, but there was no discussion on the WD due to lack of time. The merged WD is found in Document [4A/522 (Annex 22)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0522!N22!MSW-E.docx).
* During the sixth WP 4A virtual/hybrid meeting (11-20 May 2022), there was no introduction of documents or discussions due to lack of time. There was some offline work whereby the input from Canada was merged into the WD (Document [4A/691(Annex 25)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N25!MSW-E.docx)) and the US/Canada inputs were used to form the preliminary draft CPM text (Document [691(Annex32)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N32!MSW-E.docx)).
* Currently, there are 4 methods shown in the preliminary draft CPM text:
  + - Method 7A-1: No change to the Radio Regulations.
    - Method 7A-2: A draft new WRC-23 Resolution on the implementation of tolerances for satellites of non-GSO FSS/BSS or MSS systems to be referred to in   
      Nos. **11.44C.1, 11.49.2** and **11.51.**
    - Method 7A-3: Modify Nos. **11.44C.1**, **11.49.2** and **11.51** referring to the most recent version of an ITU-R Recommendation on the implementation of tolerances for satellites of non-GSO FSS/BSS or MSS systems.
    - Method 7A-4: New footnotes in Art. 11, and a draft new WRC-23 Resolution, applicable to the Res. **35 (WRC-19)** bands, calling for periodic reporting on the altitude of deployed satellites and providing provisions for ensuring that deviations do not increase interference or require additional protection.

2. Documents

* Input Documents: APG23-4/INP[10(J)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [17(AUS)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [27(IRN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-27_IRN_WP4_Preliminary_Views_on_WRC-23_Agenda_Item_7Topics_A_B_C_D1_F_H_and_K.docx), [37(KOR)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx), [43(CHN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-43_China_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [48(THA)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-48_Thailand_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.17_and_7.docx), [57(SNG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-57_SNG_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_and_7.docx), [78(VTN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)
* Information Documents APG23-4/[INF02(ATU)](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx), [03(WMO)](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-03_WMO_Positions.docx), [21(ASMG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf), [28 (CITEL)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf), [44(RCC)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf), [48(CEPT)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)

3. Summary of discussions

3.1 Summary of APT Members’ views

3.1.1 Japan – Document APG23-4/INP-10

* Japan generally supports the on-going ITU-R studies carried out by WP4A regarding Topic A.

**3.1.2 Australia – Document APG23-4/INP-17**

* Australia supports studies. The scope of any studies should be limited to the differences between the notified and deployed non-GSO orbital characteristics for the inclination of the orbital plane, the altitude of the apogee of the space station, the altitude of the perigee of the space station and the argument of the perigee of the orbital plane

**3.1.3 Iran (Islamic Republic of) – Document APG23-4/INP-27**

* Islamic Republic of Iran supports to address the refinements envisaged by WRC-19 as referred to above. However, while this administration is supporting, such action it is not in favor of over regulations. The reasons for such principle is that opportunity should be provided to every administration, on an equal and equitable basis, to deploy such systems irrespective of the stage of development of their projects.
* While this administration has not yet decided on any Method, however, it is ready to consider all proposed Methods, after the last ITU-R meetings before the deadline established by CPM23-1, as amended. However, this administration is of the strong views that the selected Method should:

1. Avoid over regulating the process;
2. Providing equal and fair opportunity to all administrations to implement and their systems irrespective of their design and deployment stage(s);
3. Support defining the tolerances limits to the four orbital characteristics;
4. Provide necessary flexibility for the deployment of the projects;
5. Not to be retroactively applicable;
6. Include temporary exceedance in tolerance(s) together with some transitional arrangements to allow the compliance with the values.

**3.1.4 Korea (Republic of) – Document APG23-4/INP-37**

* The Republic of Korea supports the development of the definition of tolerances of non-geostationary-satellite orbit (non-GSO) space stations in the FSS, BSS and MSS.
* The Republic of Korea is of the view that the development of the definition of tolerances of non-GSO space stations in the FSS, BSS and MSS, needs to be limited to the inclination of the orbital plane, the altitude of the apogee of the space station, the altitude of the perigee of the space station and the argument of the perigee of the orbital plane, to account for potential differences between the notified and deployed orbital characteristics.
* The Republic of Korea is also of the view that appropriate regulatory consequences/measures need to be developed taking into account the operational aspects of the non-GSO space stations in the FSS, BSS and MSS, if the operations are beyond the specified allowable tolerances. These regulatory measures should not have retroactive application. Moreover, necessary transitional measures for application of the decision of WRC-23 may need to be developed.

**3.1.5 China (People’s Republic of) – Document APG23-4/INP-43**

* China supports the development of the definition of tolerances limited to the four orbital characteristics of non-GSO space stations in FSS, BSS and MSS.
* China is of the view that the development of tolerances under this topic for the orbital characteristics of non-GSO space stations should not outside those frequency assignments in FSS, BSS and MSS.
* China supports the development of these tolerances in the context of RR notification and recording of frequency assignments procedures such as BIU and the milestone-based approach.
* China also supports the development of appropriate regulatory consequences for frequency assignments to non-GSO space stations if it operates beyond the specified allowable tolerances.

**3.1.6 Thailand (Kingdom of) – Document APG23-4/INP-48**

* Thailand supports the development of the definition of tolerances for certain orbital characteristics of non-GSO space stations in the fixed-satellite service (FSS), broadcasting satellite service (BSS) and mobile-satellite service (MSS). To consider potential differences between the notified and deployed orbital characteristics and to ensure no significant change in interference environment made by a non‑GSO system, the ITU-R study shall take into account the orbital characteristics of the inclination of the orbital plane, the altitude of the apogee, the altitude of the perigee and the argument of the perigee of the orbital plane.
* Thailand is of the view that the relevant ITU-R studies should take into account consequences on existing non-GSO space stations in FSS, BSS and MSS and develop appropriate transitional regulatory measures after WRC-23 with regard to the non-compliance of orbital tolerances.

**3.1.7 Singapore (Republic of) – Document APG23-4/INP-57**

* Singapore does not support No change to the Radio Regulations (Method 7A-1) and has the following preliminary views:
  + supports the development of the definition of tolerances limited to the four orbital characteristics of non-GSO space stations in FSS, BSS and MSS identifying a “notified orbital plane”.
  + does not support the development of tolerances under this topic for the orbital characteristics of non-GSO space stations whose frequency assignments belong to services other than the FSS, BSS and MSS.
  + supports the development of these tolerances in the context of ITU regulatory procedures such as BIU and the milestone-based approach. In the absence of such tolerances it is unclear whether the requirements of Resolution **35 (WRC-19)** are met.
  + to avoid collision with another non-GSO space station or to permit reorganisation of satellites in an orbit-plane after a launch of new non-GSO space stations, supports specific regulatory measures to temporary exceed the defined tolerances if final tolerances definition could not address such operational requirements.
  + supports the development of appropriate regulatory consequences for frequency assignments to non-GSO space stations that do not maintain these to-be-developed orbital tolerances.

**3.1.8 Vietnam (Socialist Republic of) – Document APG23-4/INP-78**

* Viet Nam supports the development of the definition of tolerances of non-GSO space stations that operate in the FSS, BSS and MSS, limited to the differences between the notified and deployed non-GSO orbital characteristics for the inclination of the orbital plane, the altitude of the apogee of the space station, the altitude of the perigee of the space station and the argument of the perigee of the orbital plane.
  1. **Summary of issues raised during the meeting**
* While discussing Document APG23-4/INP-27, the meeting agreed with the principles outlined in the paper which mentioned that the selected Method for Topic A:
  + - should not over regulate the process; and
    - should provide equal and fair opportunity to all administrations to implement and their systems irrespective of their design and deployment stage(s).
* The rest of the principles mentioned in Document APG23-4/INP-27 were already reflected in the APT Preliminary View(s) in Section 4.

4. APT Preliminary View(s)

* APT Members support the development of the definition of tolerances of non-geostationary-satellite orbit (non-GSO) space stations in the FSS, BSS and MSS. APT Members support the development of these tolerances in the context of ITU regulatory procedures such as bringing into use (BIU) and the milestone-based approach.
* APT Members are of the view that the development of the definition of tolerances of non-geostationary-satellite orbit (non-GSO) space stations in the FSS, BSS and MSS, should be limited to the inclination of the orbital plane, the altitude of the apogee of the space station, the altitude of the perigee of the space station and the argument of the perigee of the orbital plane, to account for potential differences between the notified and deployed orbital characteristics.
* APT Members are also of the view that appropriate regulatory consequences/measures should be developed taking into account the operational aspects of the non-GSO space stations in the FSS, BSS and MSS, if the operations are beyond the specified allowable tolerances. These regulatory measures should not have retroactive application. Moreover, necessary transitional measures for application of the decision of WRC-23 may need to be developed.

5. Other View(s) from APT Members

* Some APT Members are of the view that the selected Method for Topic A:
  + - should not over regulate the process; and
    - should provide equal and fair opportunity to all administrations to implement and their systems irrespective of their design and deployment stage(s).
* .

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

**7.1 Regional Groups**

7.1.1 ATU (as of August 2022) – Document APG23-4/INF-02

* Support studies on identifying acceptable tolerances for the following orbital characteristics: for the inclination of the orbital plane, the altitude of the apogee of the space station, the altitude of the perigee of the space station and the argument of the perigee of the orbital plane;
* Decide that specific regulatory measures for tolerances ought to be taken in order to avoid collision with another non-geostationary space station. Tolerances for the orbital characteristics should on one hand provide flexibility of satellite operators to maneuver their satellites without wasting too much fuel on the other hand provide no room for abuse to go out of the notified orbital characteristics;
* Decide that special cases in the orbiting phase should be taken into account. Regulatory procedures should clearly define this.
* Decide that appropriate regulatory provisions ought to be developed for frequency assignments to non-GSO space stations that do not maintain or exceed the orbital tolerances and the effects that will result from these exceedances on the file submitted to the ITU.

7.1.2 ASMG (as of August 2022) – Document APG23-4/INF-21

* Support studies on acceptable tolerances for the following orbital characteristics:
  + - The inclination of the orbital plane
    - The altitude of the apogee of the space station
    - The altitude of the perigee of the space station and
    - The argument of the perigee of the orbital plane
* The development of tolerances under this topic will be limited to the FSS, BSS and MSS systems.
* Develop regulatory measures to determine tolerances with respect to orbital characteristics, provided granting flexibility for satellite operators to manage their satellites, and prevent non-compliance with the reported orbital characteristic

7.1.3 CEPT (as of August 2022) - Document APG23-4/INF-48

* CEPT supports the development of the definition of tolerances limited to the four orbital characteristics of non-GSO space stations in FSS, BSS and MSS identifying a “notified orbital plane”.
* CEPT does not support the development of tolerances under this topic for the orbital characteristics of non-GSO space stations whose frequency assignments belong to services other than the FSS, BSS and MSS.
* CEPT supports the development of these tolerances in the context of ITU regulatory procedures such as BIU and the milestone-based approach. In the absence of such tolerances it is unclear whether the requirements of Resolution 35 (WRC-19) are met.
* To avoid collision with another non-GSO space station or to permit reorganisation of satellites in an orbit-plane after a launch of new non-GSO space stations, CEPT supports specific regulatory measures to temporary exceed the defined tolerances if final tolerances definition could not address such operational requirements.
* CEPT supports the development of appropriate regulatory consequences for frequency assignments to non-GSO space stations that do not maintain these to-be-developed orbital tolerances.

7.1.4 CITEL (as of August 2022) – Document APG23-4/INF-28

* With respect to WRC-23 AI 7, Topic A (non-GSO tolerances), some CITEL countries support the study into the need for such tolerances, and are of the view that the study of tolerances for the characteristics of notified orbital planes for non-GSO FSS, BSS and MSS systems should be limited to the four parameters identified in the minutes of the Plenary of WRC-19: inclination of the orbital plane, the altitude of the apogee of the space station, the altitude of the perigee of the space station and the argument of the perigee of the orbital plane. Depending upon the results of these studies, allowable differences between the orbital characteristics of the notified orbital plane, as defined in No. 11.44C.1, and the actual deployed orbital plane of a non-GSO space station could be determined.

7.1.5 RCC (as of August 2022) – Document APG23-4/INF-44

* Only fixed-satellite, mobile-satellite or broadcasting satellite services and only satellite systems with altitudes of apogee above 15000 km should be considered.
* Tolerances for the inclination of plane, the altitude of the apogee, the altitude of the perigee and the argument of the perigee of the orbital plane should depend on the type of the space station.

**7.2 International Organisations**

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as August 2022)

* None.

7.2.3 WMO (as of August 2022)

* None.

7.2.4 IARU R3 (as of August 2022)

* None.

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# Topic B: Post-milestone reporting procedure for non-GSO systems

1. Background

* WRC-19 discussed at length and ultimately agreed on Resolution **35 (WRC-19)**, “A milestone-based approach for the implementation of frequency assignments to space stations in a non-geostationary-satellite system in specific frequency bands and services.” This Resolution contains a detailed procedure to be followed by administrations and the Radiocommunication Bureau (BR) when recording and maintaining in the Master International Frequency Register (MIFR) frequency assignments for non-geostationary satellite (non-GSO) systems to which the Resolution applies. One aspect raised but not addressed in a regulatory sense in the Resolution relates to the case where a non-GSO system has completed the milestone process and subsequently experiences an intermediate- or long-term reduction of the number of satellites deployed. To set the stage for potential future consideration of a procedure for such cases, and to generate data not now available to the BR, WRC-19 included *resolves* 19 in Resolution **35 (WRC-19)**, which requires administrations to inform the BR, for information purposes only, of the date when the number of satellites capable of transmitting or receiving the recorded frequency assignments deployed falls below a specified threshold. Further, if appropriate and applicable, the same *resolves* states that the notifying administration should also inform the BR of the date on which the deployment of the total number of satellites was resumed. The BR is to publish all information received under *resolves* 19 on its website.
* In arriving at an agreement on *resolves* 19, WRC-19 also agreed that certain related text should be included in the minutes of a WRC-19 Plenary session as follows: “in considering agenda item 7 Issue A, WRC-19 invites ITU-R to study, as a matter of urgency, possible development of a post‑milestone procedure taking into account the reporting defined in § 18 of the Resolution   
  **35 (WRC-19)** (WRC‑19 Documents [500](https://www.itu.int/md/R16-WRC19-C-0500/en) and [571](https://www.itu.int/md/R16-WRC19-C-0571/en)).” Note that when the WRC Plenary minutes text was agreed, what is now *resolves* 19 in the Finals Acts version of Resolution **35 (WRC-19)** was actually *resolves* 18. The change occurred in going from the provisional version to the final version of the Final Acts, and renumbering the provisional *resolves* 3*bis* to 4 and the consequential renumbering of all later *resolves.*

**Information on on-going ITU-R Study**

* The first WP 4A virtual meeting (28-29 May 2020) established Correspondence Group 5 (CG #5) and developed the associated Terms of Reference (ToR) for this CG, in order to advance the work on this Topic by electronic means, in the periods between WP 4A meetings. 2 CG meetings were held in 2020.
* During the third WP 4A virtual meeting (22 February – 3 March 2021), the meeting considered 1 input from the US that was consolidated into the Working Document (WD) on Non-GSO System Post Milestone Reporting. This WD is a compilation of inputs received so far from Luxembourg and US.
* During the fourth WP 4A virtual meeting (14 – 28 July 2021), there were inputs from US, Russia and Canada that were merged with the existing WD, but not discussed due to lack of time. The WD is found in Document [4A/392 (Annex 14)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0392!N14!MSW-E.docx).
* the France/Luxembourg input contained preliminary draft CPM text which proposes to suppress resolves 19 for Resolution 35 (WRC-19) and to develop a new draft Resolution, based on the suspension provisions of No. **11.49**. The WD towards draft CPM text is found in Document [4A/392 (Annex 36)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0392!N36!MSW-E.docx).
* During the fifth WP 4A virtual meeting (27 October – 4 November 2021), there were inputs from Canada, Luxembourg and US that were merged into the existing WD on this Topic (Document [4A/522 (Annex23)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0522!N23!MSW-E.docx)) as well as the WD towards the draft CPM text (Document [4A/522 (Annex 29)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0522!N29!MSW-E.docx)), but there was no discussion due to lack of time.
* During the sixth WP 4A virtual/hybrid meeting (11-20 May 2022), there was no introduction of documents or discussions due to lack of time. There was some offline work whereby the input from US was merged into the WD (Document [4A/691(Annex 26)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N26!MSW-E.docx)) and the US/Luxembourg (on behalf of CEPT)/Russia inputs were merged into preliminary draft CPM text (Document [4A/691(Annex 33)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N33!MSW-E.docx)).
* Currently, there are 2 methods shown in the preliminary draft CPM text:
* Method A: No change to the Radio Regulations.
* Method B: Changes to Resolution **35 (WRC-19)** to remove *resolves 19* and adoption of changes to RR Article **11** and a new resolution to capture the post-milestone procedure for systems subject to Resolution **35 (WRC-19)** (there are several options under this Method) such as:
* Option A1: to address all frequency bands under Topic B
* Option A2: to address frequency bands subject to Resolution **35** (**WRC-19**) under Topic B
* Option B1: fixed percentage of the total number of satellites independent of the number of satellites in the system; current proposed numbers are [95/P]%
* Option B2: different percentage of the total number of satellites based on the number of satellites in the system:

For *N* <50 *X* = *N* \* 50% – 1 satellite

For 50 ≤ *N* < 550 *X* = *N* \* 90% – 1 satellite

For 550 ≤ *N* < 5 000 *X* = *N* \* 93% – 1 satellite

For *N* > 5 000 *X* = *N* \* 95% – 1 satellite,

where

*N* the number of satellites in the non-GSO system.

2. Documents

* Input Documents: APG23-4/INP[10(J)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [17(AUS)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [27(IRN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-27_IRN_WP4_Preliminary_Views_on_WRC-23_Agenda_Item_7Topics_A_B_C_D1_F_H_and_K.docx), [37(KOR)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx), [43(CHN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-43_China_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [57(SNG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-57_SNG_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_and_7.docx), [78(VTN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)
* Information Documents APG23-4/[INF02(ATU)](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx), [21(ASMG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf), [28 (CITEL)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf), [44(RCC)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf), [48(CEPT)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)

3. Summary of discussions

**3.1 Summary of APT Members’ views**

**3.1.1 Japan** – **Document APG23-4/INP-10**

* Japan generally supports the on-going ITU-R studies carried out by WP4A regarding Topic B.

**3.1.2 Australia – Document APG23-4/INP-17**

* Australia supports the development of the final post-milestone procedures at WRC-23 to supplement what was considered the temporary post-milestone procedures as contained in resolves **19** of Resolution **35 (WRC-19)**.

**3.1.4 Iran (Islamic Republic of) – Document APG23-4/INP-27**

* While this administration has not yet decided on any Method, however, it is ready to consider all proposed Methods, after the last ITU-R meetings, before the deadline established by CPM23-1, as amended. However, this administration is of the strong views that the selected Method should:

a) Avoid over regulating the process;

b) Providing equal and fair opportunity to all administrations to implement and their systems irrespective of their design and deployment stage(s).

c) Provide necessary regulatory procedure including some temporary flexibility on the real number of deployed satellites against those recorded in the MIFR;

**3.1.5 Korea (Republic of) – Document APG23-4/INP-37**

* The Republic of Korea supports the development of the post-milestone procedures for non-GSO satellite systems in FSS, BSS and MSS subject to Resolution **35 (WRC-19)**.
* The Republic of Korea is of the view that the studies for developing final post-milestone procedures at WRC-23 need to take into account the reporting procedure defined in *resolves* 19 of Resolution **35 (WRC-19)**.
* The Republic of Korea is also of the view that when developing the post-milestone procedures, some degree of operational flexibility which is necessary for the maintenance of the non-GSO satellite system in the FSS, BSS and MSS subject to Resolution **35 (WRC-19)**, may need to be duly considered.

**3.1.6 China (People’s Republic of) – Document APG23-4/INP-43**

* China supports to develop a new Resolution to replace resolves 19 of Resolution **35 (WRC-19)**, to suppress resolves 19 of Resolution 35 (WRC-19) and leave the rest of the Resolution **35 (WRC-19)** as is otherwise.
* China supports the development of appropriate regulatory consequences for frequency assignments to non-GSO space stations which cannot comply with the provisions contained in the developing post-milestone procedure.

**3.1.7 Singapore (Republic of) – Document APG23-4/INP-57**

* Singapore supports Method B Options A2 & B1 with a fixed percentage of 95% according to the following preliminary views:

Supports to only address frequency bands subject to Resolution **35** (**WRC-19**) under this Topic B (i.e. Option A2).

Supports the adoption of a new Resolution to replace *resolves* 19 of Resolution **35** **(WRC-19)** at WRC-23 suppressing *resolves* 19 of Resolution **35** **(WRC-19)** and leaving the rest of the Resolution **35** **(WRC-19)** as is otherwise.

Supports a regulatory solution aligning the post milestone procedures in this new Resolution with No. **11.49** and Resolution **35 (WRC-19)** allowing some operational flexibilities:

* + - Possibility to operate a minimum 95% of the number of satellites notified in the MIFR without regulatory impact (i.e. Option B1).
    - Possibility to operate less than 95% of the number of satellites notified in the MIFR for a maximum period of 3 years without regulatory impact.
    - Considering the process to duly notify the Bureau based on similar regulatory mechanism as in No. **11.49.**

Supports a reduction in the number of satellites notified in the MIFR if the deployed number of satellites falls below 95% of that which was notified in the MIFR for a continuous period exceeding 3 years.

Considers the application of only No. **13.6** by the BR insufficient as a solution for this Topic.

**3.1.8 Vietnam (Socialist Republic of) – Document APG23-4/INP-78**

* Viet Nam supports the development of the post-milestone procedures for NGSO satellite systems in FSS, BSS and MSS.
* Viet Nam also supports the development of appropriate regulatory consequences for frequency assignments to non-GSO space stations that do not comply with the procedures with respect to post-milestone.

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

* While discussing Document APG23-4/INP-27, the meeting agreed with the principles outlined in the paper which mentioned that the selected Method for Topic B:
  + - should not over regulate the process; and
    - should provide equal and fair opportunity to all administrations to implement and their systems irrespective of their design and deployment stage(s).
* The third principle mentioned in Document APG23-4/INP-27 regarding some degree of operational flexibility was already reflected in the APT Preliminary View(s) in Section 4.
  + The meeting also took note of the proposal from Document APG23-4/INP-57 on applying the regulatory mechanism in No. **11.49** to NGSO systems, so that these NGSO systems have the flexibility to operate for a maximum period of 3 years without any regulatory impact, when their number of satellites fall below the required threshold.

4. APT Preliminary View(s)

* APT Members support the development of the post-milestone procedures for NGSO satellite systems in FSS, BSS and MSS subject to Resolution **35 (WRC-19)**.
* APT Members are of the view that the studies for developing final post-milestone procedures at WRC-23 need to take into account the reporting procedure defined in *resolves* 19 of Resolution **35 (WRC-19)**.
* APT Members support the adoption of a new Resolution to replace *resolves* 19 of Resolution **35** **(WRC-19)** at WRC-23, suppressing *resolves* 19 of Resolution **35** **(WRC-19)** and leaving the rest of the Resolution **35** **(WRC-19)** as is otherwise.
* APT Members are also of the view that when developing the post-milestone procedures, some degree of operational flexibility which is necessary for the maintenance of the non-GSO system in the FSS, BSS and MSS, may need to be duly considered.
* APT Members also support the development of appropriate regulatory measures for frequency assignments to non-GSO space stations that do not comply with the post-milestone requirements/procedures.

5. Other View(s) from APT Members

* Some APT Members are of the view that the selected Method for Topic B:
  + - should not over regulate the process;
    - should provide equal and fair opportunity to all administrations to implement and their systems irrespective of their design and deployment stage(s); and
    - provide necessary regulatory procedure including some temporary flexibility on the real number of deployed satellites against those recorded in the MIFR.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

* 1. **Regional Groups**

7.1.1 ATU (as of August 2022) – Document APG23-4/INF-02

* Support the studies to have non-GSO system post milestone reporting procedure in order to ensure that the real number of deployed non-GSO satellite system in the space is reflected in the MIFR taking into consideration the complexity of the operation of NGSO systems.
* Consider when developing the post-milestone reporting procedures, some operational flexibility which is necessary for the maintenance of the non-GSO system in the FSS, BSS and MSS, may need to be duly considered without allowing any abuse.

7.1.2 ASMG (as of August 2022) – Document APG23-4/INF-21

* Support developing Resolution 35 (WRC-19) to replace resolves 19 to ensure that the content of the MIFR for non-GSO systems closely aligns with what is actually deployed in space
* Allow the deployed satellites to be reduced by a percentage of the number of satellites recorded in the MIFR for a specified period (to be determined) without affecting the MIFR entries, bearing in mind that this percentage depends on the total number of satellites in the system, taking into account that flexibility should be granted to allow operational requirements of Non-GSO systems when the mile-stone approach is duly established while no overruns allowed
* Support the developing regulatory provisions to handle frequency assignments of Non-GSO satellites that do not comply with these procedures to be developed under this topic.

7.1.3 CEPT (as of August 2022) - Document APG23-4/INF-48

* CEPT supports the adoption of a new Resolution to replace *resolves 19* of Resolution **35 (WRC-19)** at WRC-23 suppressing *resolves 19* of Resolution **35 (WRC-19)** and leaving the rest of the Resolution **35 (WRC-19)** as is otherwise.
* CEPT supports a regulatory solution aligning the post milestone procedures in this new Resolution with No. **11.49** and Resolution **35 (WRC-19)** allowing some operational flexibilities:
  + Possibility to operate a minimum [95%] of the number of satellites notified in the MIFR without regulatory impact.
  + Possibility to operate less than [95%] of the number of satellites notified in the MIFR for a maximum period of 3 years without regulatory impact. (A suspension process analogue to the GSO case is proposed.)
  + Considering the process to duly notify the Bureau based on similar regulatory mechanism as in No. **11.49**.
* CEPT supports a reduction in the number of satellites notified in the MIFR if the deployed number of satellites falls below [95%] of that which was notified in the MIFR for a continuous period exceeding 3 years.
* CEPT considers that the application of No. **13.6** by the BR is not an adequate solution for Topic B.

7.1.4 CITEL (as of August 2022) – Document APG23-4/INF-28

* One administration is of the view that final post-milestone procedures should be developed at WRC-23 to replace resolves 19 of Resolution 35 (WRC-19). Brazil suggests to only replace resolves 19 of Resolution 35 with a new Resolution, and for WRC-23 to perform no other modifications to the rest of the Resolution 35. Brazil thereby wants to underline that it doesn’t consider application of only No. 13.6 by the BR as an adequate solution for Topic B.
* As in Topic A, this administration is of the view that the development of new Resolution should also permit some temporary flexibilities on the real number of non-GSO satellites deployed compared to the number of satellites contained in the Master Register in order to allow some operational flexibility. This administration is also of the view that the development of appropriate regulatory consequences for frequency assignments to non-GSO space stations that do not respect the requirements in the new Resolution on post-milestone procedures is beneficial.
* A second administration is of the view that additional provisions similar to No. 11.49 (suspension) are required in the RR in order to provide time to non-GSO satellite operators not operating in accordance with the characteristics of their recorded frequency assignments to make the proper adjustments.

7.1.5 RCC (as of August 2022) – Document APG23-4/INF-44

* The specificities of operation of non-GSO systems with a small number of satellites should still be taken into account.
* The post-milestone procedure should not impose additional constrains on the non-GSO satellite systems using highly-elliptical orbit.

**7.2 International Organisations**

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as August 2022)

* None.

7.2.3 WMO (as of August 2022)

* None.

7.2.4 IARU R3 (as of August 2022)

* None.

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# Topic C: 7/8 & 20/30 GHz GSO MSS protection

1. Background Information

* Topic C under agenda item 7 was established to verify the effectiveness of the regulatory protection of geostationary satellite orbit (GSO) mobile-satellite service (MSS) from interference caused by non-GSO systems and networks, and to identify possible inconsistencies in the RR provisions of the Radio Regulations (RR) applicable to the frequency bands:
* 7 250-7 750 MHz (space-to-Earth);
* 7 900-8 025 MHz (Earth-to-space);
* 20.2-21.2 GHz (space-to-Earth); and
* 30-31 GHz (Earth-to-space).

**Information on on-going ITU-R Study**

* The July 2021 meeting of WP 4A considered two input documents towards the development of the Working Document towards on WRC-23 Agenda Item 7 Topic C. Due to lack of time, the meeting agreed to carry forward the merged document as Annex 15 to Chairman’s Report (Document [4A/392 Annex 15](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0392!N15!MSW-E.docx)) for consideration by the CG and the next meeting of WP 4A, as appropriate.
* There were three input contributions to the October / November 2021 meeting of WP 4A. Due to lack of time, the meeting agreed to carry forward the merged document as Annex 24 to Chairman’s Report (Document [4A/522 Annex 24](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0522!N24!MSW-E.docx)) for consideration by the CG and the next meeting of WP 4A, as appropriate.
* WRC-23 Agenda Item 7 Topic C was also discussed during the WP 4A Correspondence Group 5 (CG#5) discussion on 11 March 2022. The CG concluded that more discussion was required on this Topic at the next meeting of WP 4A.
* The May 2022 meeting of WP 4A received two input documents towards the development of the Working Document towards on WRC-23 Agenda Item 7 Topic C and two input documents towards the preliminary draft CPM text. Due to lack of time, these documents plus the carry forward document were not reviewed or discussed during the May 2022 meeting. The meeting agreed to carry forward the merged Working Document towards on WRC-23 Agenda Item 7 Topic C as Annex 27 to Chairman’s Report (Document [4A/691 Annex 27](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N27!MSW-E.docx)) and the preliminary draft CPM text as Annex 34 to Chairman’s Report (Document [4A/691 Annex 34](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N34!MSW-E.docx)).
* Currently, a threefold approach has been identified for non-GSO systems being filed after a favourable decision at WRC-23 to protect GSO MSS network:
  + - * 1. Comprising new or modified footnotes extending the application of concept of provisions of RR No. 22.2 to provide protection for GSO satellite networks operating in the MSS in the identified frequency bands.

Option 1:

* + - * A modification of the RR No. 5.461 is proposed covering the cases subject to the coordination provision of RR No. 9.21.
      * An additional RR No. **5.46X** is proposed extending RR No. **22.2** to the remainingfrequency ranges under this agenda item.

Option 2:

* + - * A modification of the RR No. **5.461** is proposed covering the cases subject to the coordination provision of RR No. **9.21**.
      * Extension of GSO MSS protection in the 7/8 GHz and 20/30 GHz frequency bands by an addition of a new provision in RR Article **22**, namely RR No. **22.2***bis*.
        1. New Appendix **4** parameters for non-GSO satellite system, and
        2. A clarification of the process for non-GSO satellite systems to protect the GSO networks in the identified frequency bands.
* There will be further discussion WRC-23 Agenda Item 7 Topic C at the next virtual informal discussion of WRC-23 AI 7 Topics A, B, C on 28 July 2022.

2. Documents

* Input Document(s):[INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (J), [INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (AUS), [INP-27](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-27_IRN_WP4_Preliminary_Views_on_WRC-23_Agenda_Item_7Topics_A_B_C_D1_F_H_and_K.docx) (IRN), [INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx) (KOR), [INP-43](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-43_China_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (CHN), [INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx) (VTN)
* Information Document(s): [INF-02](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx) (ATU), [INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf) (ASMG), [INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf) (CEPT), [INF-44](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf) (RCC)

3. Summary of discussions

3.1 Summary of APT Members’ views

3.1.1 Japan - Document APG23-4/[INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Japan supports protection of geostationary satellite networks in the mobile-satellite service operating in the 7/8 GHz and 20/30 GHz bands from emissions of non-geostationary satellite systems operating in the same frequency bands and identical directions, by means of appropriate regulatory solutions.

3.1.2 Australia - Document APG23-4/[INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Australia supports studies.

3.1.3 Iran (Islamic Republic of) - Document APG23-4/[INP-27](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-27_IRN_WP4_Preliminary_Views_on_WRC-23_Agenda_Item_7Topics_A_B_C_D1_F_H_and_K.docx)

* Islamic Republic of Iran supports the identification and definition of criteria, extensions and addition of provisions in order to quantify the protection of GSO networks operating in the MSS from interference caused by non‐GSO networks or systems operating in the same frequency bands 7250‐7750 MHz (space‐to‐Earth), 7900‐8025 MHz (Earth‐to‐space), 20.2‐21.2 GHz (space‐to‐Earth) and 30‐31 GHz (Earth‐to‐space) and in identical directions.
* To this effect the following two alternative approaches are proposed:

**Alternative 1:**

Modify RR No. **5.461** to include text from RR No. **22.2** indicating that MSS in the frequency bands mentioned in the footnote shall not cause unacceptable interference to and, unless otherwise specified in the RRs, shall not claim protection from assignments pertaining to GSO. RR No. **5.43A** does not apply.

**Alternative 2:**

Create a new provision RR No**. 22.2*bis*** using the same text as contained in RR No. **22.2** replacing FSS and BSS by MSS in the frequency bands mentioned in alternative 1.

3.1.4 Korea (Republic of) - Document APG23-4/[INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx)

* The Republic of Korea is of the view that existing regulations and its effectiveness to protect GSO satellite networks in the MSS operating in the bands 7/8 GHz and 20/30 GHz from emissions of non-GSO satellite systems operating in the same bands and in same direction, need to be verified by ITU-R WP 4A.
* The Republic of Korea supports the method developed by ITU-R WP 4A to apply the concept of No. **22.2** of the Radio Regulations (RR) through possible modifications to footnotes of Article **5** to the MSS in the bands 7/8 GHz and 20/30 GHz.

3.1.5 China (People's Republic of) - Document APG23-4/[INP-43](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-43_China_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* China supports to develop and clarify regulatory provisions applying of conception of No. **22.2** for protection geostationary-satellite networks in the mobile-satellite service from interference caused by non-GSO networks or systems operating in 7/8 & 20/30 GHz, considering modifying existing provisions or adding new provisions.

3.1.6 Viet Nam (Socialist Republic of) - Document APG23-4/[INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)

* Viet Nam supports the development of regulatory provisions for protection geostationary-satellite networks in the mobile-satellite service from interference caused by non-GSO networks or systems operating in 7/8 and 20/30 GHz.

3.2 Summary of issues raised during the meeting

* None.

4. APT Preliminary View(s)

* APT Members are of the view that existing regulations and its effectiveness to protect geostationary-satellite networks in the mobile-satellite service operating in the bands 7/8 GHz and 20/30 GHz from emissions of non-geostationary-satellite networks operating in the same bands and in same direction, need to be verified by ITU-R Working Party 4A.
* APT Members support application of concept of No. **22.2** of the Radio Regulations for MSS in the bands 7/8 GHz and 20/30 GHz.
* APT Members are considering two alternatives at this stage:

**Alternative 1:**

Modify RR No. **5.461** to include text from RR No. **22.2** indicating that non-GSO systems in the appropriate frequency bands shall not cause unacceptable interference to and, unless otherwise specified in the RRs, shall not claim protection from assignments pertaining to GSO MSS. RR No. **5.43A** does not apply.

**Alternative 2:**

Create a new provision RR No.**22.2*bis*** using the same text as contained in RR No. **22.2** replacing FSS and BSS by MSS in the appropriate frequency bands.

However, this issue is being discussed at ITU-R in its September 2022 meeting.

See section 5 for details.

5. Other View(s) from APT Members

* Some APT Members consider two alternative approaches:

**Alternative 1:**

***Option 1 -*** Modify RR No. **5.461** to include text from RR No. **22.2** indicating that non-GSO systems in the frequency bands 7/8 GHz shall not cause unacceptable interference to and, unless otherwise specified in the RRs, shall not claim protection from assignments pertaining to GSO MSS. RR No. **5.43A** does not apply.

***Option 2 -*** Modify RR No. **5.461** to include text from RR No. **22.2** indicating that non-GSO systems in the frequency bands 7/8 GHz and 20/30 GHz shall not cause unacceptable interference to and, unless otherwise specified in the RRs, shall not claim protection from assignments pertaining to GSO MSS. RR No. 5.43A does not apply.

**Alternative 2:**

***Option 1 -*** Create a new provision RR No. **22.2*bis*** using the same text as contained in RR No. **22.2** replacing FSS and BSS by MSS in the frequency bands 7/8 GHz mentioned in Alternative 1 Option 1.

***Option 2 -*** Create a new provision RR No. **22.2*bis*** using the same text as contained in RR No. **22.2** replacing FSS and BSS by MSS in the frequency bands 7/8 GHz and 20/30 GHz mentioned in Alternative 1 Option 2.

At the 4th meeting of APG23, some APT Members expressed preference for Alternative 1 Option 2 and Alternative 2 Option 2.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

7.1 Regional Groups

7.1.1 ATU (as of August 2022 (APG23-4/[INF-02](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx)))

* Support the studies on assessing the protection of GSO MSS operating in 7/8 and 20/30 GHz from emissions of non-geostationary satellite systems in the frequency bands:
* 7 250-7 375 MHz (space-to-Earth),
* 7 900-8 025 MHz (Earth-to-space),
* 20.2-21.2 GHz (space-to-Earth), and
* 30-31 GHz (Earth-to-space).

7.1.2 ASMG (as of August 2022 (APG23-4/[INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf)))

* Support the inclusion of new or modified footnotes in the Table of Frequency Allocations to broaden the scope of application of the provisions of No. 22.2 of the Radio Regulations to provide protection for GSO networks operating in the mobile-satellite service in the frequency bands defined in 7/8 and 20/30 GHz from satellite system emissions Non-GSO operating in the same frequency bands and directions.

7.1.3 CEPT (as of August 2022 (APG23-4/[INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)))

* CEPT supports the identification and definition of criteria, extensions and additions of provisions in order to quantify the protection of GSO networks operating in the MSS from interference caused by non-GSO networks or systems operating in the same frequency bands 7250-7750 MHz (space-to-Earth), 7900-8025 MHz (Earth-to-space), 20.2-21.2 GHz (space-to-Earth) and 30-31 GHz (Earth-to-space) and in identical directions.

7.1.4 CITEL (as of August 2022 (APG23-4/[INF-28](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf)))

* None.

7.1.5 RCC (as of August 2022 (APG23-4/[INF-44](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf)))

* Support technical and regulatory measures for the protection of GSO mobile-satellite systems operating in 7/8 and 20/30 GHz from emissions of non-geostationary satellite systems operating in the same frequency bands and identical directions without limitation of existing GSO and non-GSO satellite systems/networks of mobile satellite service.

7.2 International Organisations

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as of August 2022)

* None.

7. 2.3 WMO (as of August 2022)

* None.

7. 2.4 IARU R3 (as of August 2022)

* None.

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# Topic D1: Mod to App 1 to Annex 4 of RR AP30B

## 1. Background Information

* WRC-19 adopted modifications to §§ 1.1 and 1.2 of Annex 4 of RR Appendix**30B** by replacing 10 and 9 degrees stipulated for orbital separation by 7 and 6 degrees, respectively. However, in § 2 of Appendix 1 to Annex 4 of RR Appendix **30B**, there is still a reference to 10 and 9 degrees for the calculation of the aggregate C/I ratio at a given downlink test point.
* WRC-23 agenda item 7 Topic D1 considers this discrepancy and a method toalign the values of orbital separation with those in §§ 1.1 and 1.2 of of the Annex 4 of RR Appendix**30B** adopted by WRC-19.

**Information on on-going ITU-R Study**

* The July 2021 meeting of WP 4A considered three input documents towards the development of the Working Document on Draft CPM text for WRC-23 Agenda Item 7 Topic D, particularly on the Executive Summary. Due to lack of time, the meeting agreed to carry forward the merged document as Annex 35 to Chairman’s Report (Document [4A/392 Annex 35](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0392!N35!MSW-E.docx)) for consideration by the CG and the next meeting of WP 4A, as appropriate.
* There was no new contribution to the October / November 2021 meeting of WP 4A and May 2022 meeting of WP 4A. Hence, the merged document from the July 2021 meeting of WP 4A remains as the baseline working document.
* Considered as a straightforward issue, there is a single method to address WRC-23 agenda item 7 Topic D1, that is to modify Section 2 of Appendix 1 to Annex 4 of RR Appendix **30B** to reflect the values of the minimum orbital separation as adopted by WRC-19 in sections 1.1 and 1.2 of Annex 4 of RR Appendix **30B**.

2. Documents

* Input Document(s):[INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (J), [INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (AUS), [INP-27](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-27_IRN_WP4_Preliminary_Views_on_WRC-23_Agenda_Item_7Topics_A_B_C_D1_F_H_and_K.docx) (IRN), [INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx) (KOR), [INP-43](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-43_China_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (CHN), [INP-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-48_Thailand_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.17_and_7.docx) (THA), [INP-69](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-69_MLA_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.16_and_7D.docx) (MLA), [INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx) (VTN), [INP-82](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-82_Indonesia_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_and_7.docx) (INS)
* Information Document(s): [INF-02](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx) (ATU), [INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf) (ASMG), [INF-28](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf) (CITEL), [INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf) (CEPT), [INF-44](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf) (RCC)

3. Summary of discussions

3.1 Summary of APT Members’ views

3.1.1 Japan - Document APG23-4/[INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Japan supports the on-going ITU-R studies carried out by WP4A.

3.1.2 Australia - Document APG23-4/[INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Australia is monitoring developments on this Topic.

3.1.3 Iran (Islamic Republic of) - Document APG23-4/[INP-27](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-27_IRN_WP4_Preliminary_Views_on_WRC-23_Agenda_Item_7Topics_A_B_C_D1_F_H_and_K.docx)

* Islamic Republic of Iran supports the single method, to modify Section 2 of Appendix 1 to Annex 4 of RR Appendix **30B** to reflect the values of the minimum orbital separation as adopted by WRC-19 in sections 1.1 and 1.2 of Annex 4 of RR Appendix **30B,** as stipulated in draft CPM text ([Annex 35 to 4A/392](https://www.itu.int/md/R19-WP4A-C-0392/en)).

3.1.4 Korea (Republic of) - Document APG23-4/[INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx)

* The Republic of Korea supports modifications to Appendix 1 to Annex 4 of RR Appendix (AP) **30B** to reflect the values of the minimum orbital separation as adopted by WRC-19 in §§ 1.1 and 1.2 of Annex 4 of RR AP **30B**.

3.1.5 China (People's Republic of) - Document APG23-4/[INP-43](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-43_China_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* China supports correcting the values of the coordination arc in Appendix 1 to Annex 4 of RR AP**30B** based on the coordination arc reductions decided at WRC-19.

3.1.6 Thailand (Kingdom of) - Document APG23-4/[INP-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-48_Thailand_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.17_and_7.docx)

* Thailand supports the single method developed by ITU-R to modify § 2 of Appendix 1 to Annex 4 of Appendix 30B of the Radio Regulations to reflect the values of the minimal orbital separation as adopted by WRC-19 in § 1.1 and §1.2 of Annex 4 of RR Appendix 30B.

3.1.7 Malaysia - Document APG23-4/[INP-69](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-69_MLA_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.16_and_7D.docx)

* Malaysia supports the modification to Appendix 1 to Annex 4 of Appendix 30B of the Radio Regulations to reflect the values of the minimum orbital separation as adopted by WRC-19.

3.1.8 Viet Nam (Socialist Republic of) - Document APG23-4/[INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)

* Viet Nam supports the single method developed by ITU-R.

3.1.9 Indonesia (Republic of) - Document APG23-4/[INP-82](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-82_Indonesia_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_and_7.docx)

* Indonesia is of the view to support the single method developed by ITU-R to modify Section 2 of Appendix 1 to Annex 4 of RR Appendix **30B** to reflect the values of the minimum orbital separation as adopted by WRC-19 in sections 1.1 and 1.2 of Annex 4 of RR Appendix **30B**.

3.2 Summary of issues raised during the meeting

* None.

4. APT Preliminary View(s)

* APT Members support the single method to modify Section 2 of Appendix 1 to Annex **4** of Appendix **30B** of the Radio Regulations to reflect the values of the minimum orbital separation as adopted by WRC-19 in § 1.1 and § 1.2 of Annex **4** of RR Appendix **30B**.

5. Other View(s) from APT Members

* None.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

7.1 Regional Groups

7.1.1 ATU (as of August 2022 (APG23-4/[INF-02](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx)))

* Support the only method identified under this topic.

7.1.2 ASMG (as of August 2022 (APG23-4/[INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf)))

* Support the only method specified under this topic for modifications to Appendix 1 to Annex 4 of Appendix 30B of the Radio Regulations to reflect minimum orbital separation values as approved by WRC-19 in §§ 1.1 and 2.1 of Annex 4 of Appendix 30B of the RR.

7.1.3 CEPT (as of August 2022 (APG23-4/[INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)))

* CEPT supports correcting the values of the coordination arc in the aggregate C/I calculation in Appendix 1 to Annex 4 of RR Appendix **30B** based on the coordination arc reductions decided at WRC-19.

7.1.4 CITEL (as of August 2022 (APG23-4/[INF-28](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf)))

* Some CITEL countries are of the view that it is important to correct the values of the coordination arc to be used in the aggregate C/I calculation in Appendix 1 to Annex 4 of RR Appendix 30B to reflect those adopted by WRC-19. As a result, these CITEL countries support the incorporation in the Radio Regulations of the rule of procedures on Appendix 1 to Annex 4 of Appendix 30B as adopted by the Radio Regulation Board at its 85th meeting.

7.1.5 RCC (as of August 2022 (APG23-4/[INF-44](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf)))

* Support the modification of the value of the coordination arc in Appendix 1 to Annex 4 to Appendix 30B of the RR to align it with the value of the coordination arc adopted at WRC-19 for Appendix 30B of the RR.

7.2 International Organisations

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as of August 2022)

* None.

7. 2.3 WMO (as of August 2022)

* None.

7. 2.4 IARU R3 (as of August 2022)

* None.

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# Topic D2: New AP4 parameters for Rec. S.1503 updates

## 1. Background Information

* Recommendation ITU-R S.1503 defines an algorithm that can be used to determine whether a non‑GSO FSS network meets the equivalent power flux-density (epfd) limits in Article **22** of the Radio Regulations (RR).
* A revision to this Recommendation from version S.1503-2 to S.1503-3 was approved at the October 2017 meeting of Study Group 4. Several of the changes proposed to Recommendation ITU-R S.1503 would require additional data elements to allow the BR to be able to undertake an examination of a non-GSO system to ensure that it is compatible with the EPFD limits in Article **22** of the Radio Regulations.
* As agreed by WRC-19, the new parameters is be included in RR Appendix **4** as mandatory parameters, a similar approach that was taken in previous revisions to Recommendation ITU-R S.1503. Hence, WRC-23 agenda item 7 Topic D2 is established to develop the proposed modifications to RR Appendix **4** describing the data elements required by the revision to Recommendation ITU-R S.1503. Draft changes to RR Appendix **4** are proposed in the Annex, but the exact changes needed will depend on the contents of the revision to Recommendation ITU-R S.1503 as agreed by WP 4A.

**Information on on-going ITU-R Study**

* The October/November 2021 meeting of WP 4A considered one input document which proposed to establish a new Topic under AI 7 to address inclusion of additional data elements in RR Appendix **4** as a consequence of revisions being considered to Recommendation ITU-R S.1503. There was no concern with the idea of creating such a Topic under AI 7 as a consequence of revisions to the Recommendation once those revisions are considered stable. However, it was felt that it may be a bit early to identify this as a Topic at this meeting, and it would be best to see how the discussion of revisions to the Recommendation proceed at the next meeting.
* Further to the understanding from the last WP4A meeting, that there was no opposition on the proposal for a new new Topic under AI 7, and that it was decided to wait for further stability on the specific revisions to Recommendations ITU-R S.1503 before creating this Topic, since that stability was achieved at the May 2022 meeting of WP 4A, the meeting agreed to create this as a straightforward topic.
* The single input document (Document [4A/657](https://www.itu.int/md/R19-WP4A-C-0657/en)) to the May 2022 meeting of WP 4A will be used as the baseline working document towards the development of the Working Document on Draft CPM text for WRC-23 Agenda Item 7 Topic D2. Draft changes to RR Appendix **4** are proposed in the Annex of the input document, but the exact changes required will be subject to the contents of the revision to Recommendation ITU-R S.1503 as agreed by WP 4A.

2. Documents

* Input Document(s):[INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (J), [INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (AUS), [INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx) (KOR), [INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx) (VTN)
* Information Document(s): [INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf) (ASMG), [INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf) (CEPT)

3. Summary of discussions

3.1 Summary of APT Members’ views

3.1.1 Japan - Document APG23-4/[INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Japan supports the on-going ITU-R studies carried out by WP4A.

3.1.2 Australia - Document APG23-4/[INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Australia is monitoring developments on this Topic.

3.1.3 Korea (Republic of) - Document APG23-4/[INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx)

* The Republic of Korea supports on-going ITU-R studies for the possible modifications to RR AP **4** in consequence to the updates to Recommendation ITU-R S.1503 based on ITU-R studies.

3.1.4 Viet Nam (Socialist Republic of) - Document APG23-4/[INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx) (VTN)

* Viet Nam supports the on-going ITU-R studies carried out by WP4A.

3.2 Summary of issues raised during the meeting

* None.

4. APT Preliminary View(s)

* APT Members support ITU-R studies for the possible modifications to RR Appendix **4** resulting from the updates to Recommendation ITU-R S.1503 based on ITU-R studies.

5. Other View(s) from APT Members

* None.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

7.1 Regional Groups

7.1.1 ATU (as of August 2022 (APG23-4/[INF-02](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx)))

* None.

7.1.2 ASMG (as of August 2022 (APG23-4/[INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf)))

* Support for the proposed changes to Recommendation ITU-R S.1503 to require additional data elements. In order for the BR to perform an examination of a Non-GSO system for compliance with the EPFD limits in Article 22 of the Radio Regulations while ensuring the protection of the FSS.

7.1.3 CEPT (as of August 2022 (APG23-4/[INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)))

* CEPT supports making modifications to Appendix 4 in consequence to the update to Recommendation ITU-R S.1503.
* CEPT acknowledges the existence of other methods that could allow administrations to provide the additional parameters required by updates to Recommendation ITU-R S.1503, e.g. by defining new fields in the.xml file that describes a non-GSO system operating parameters.

7.1.4 CITEL (as of August 2022 (APG23-4/[INF-28](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf)))

* None.

7.1.5 RCC (as of August 2022 (APG23-4/[INF-44](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf)))

* None.

7.2 International Organisations

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as of August 2022)

* None.

7. 2.3 WMO (as of August 2022)

* None.

7. 2.4 IARU R3 (as of August 2022)

* None.

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# Topic D3: BR reminders for BIU/BBIU

## 1. Background Information

* To assist administrations in managing their ITU satellite system filings under the Radio Regulations, World Radiocommunication Conference (WRC), Radio Regulations Board (RRB) and the Radiocommunication Bureau (BR) have, over time, included in the Radio Regulations (RR) or Rules of Procedures (RoP) reminders for most of the provisions with strict time limits for submission of mandatory information. These reminders exist for most key provisions of the RR, under No. **9.47** or No. **9.62** for acknowledgement of receipt of a request for coordination or absence of reply or decisions on a coordination request, or No. **11.44** and No. **11.49** for bringing into use or bringing back into use of frequency assignments, or No. **11.47** for provisionally recorded assignments, under No. **13.6**, all footnotes referring to the payments under Decision **482**, and under many similar other occurrences in the Appendices **30**/**30A** and **30B**, and numerous resolutions e.g. Resolution **35 (WRC-19)**.
* One critical time limit however does not include a formal BR reminder. This is the confirmation of bringing into use or bringing back into use of frequency assignments, under No. **11.44B**. No. **11.44C**,No. **11.44D** and No. **11.44E**, where the notifying administration shall inform the Bureau within 30 days of the end of the 90-day period after the bringing into use or bringing back into use that a space station in the geostationary-satellite or non-geostationary-orbit having the capability to transmit or receive on that assigned frequency, has been deployed and maintained at the notified orbital position or one of the notified orbital planes, as appropriate, for a continuous period of 90 days.
* In this case, the BR, as an internal practice, has been sending a message recalling the 90-day obligation under No. **11.44B** or No. **11.44C** to administrations informing them of their satellite system bringing into use, that reads:

*“The Radiocommunication Bureau acknowledges receipt of your communication in reference above, in which your Administration indicated that the frequency assignments to the [xxx] satellite network were brought into use on [date of BIU] and notes that the continuous period of 90 days established under* *[No.* ***11.44B****][No.* ***11.44C****] of the Radio Regulations will soon be reached.*

*Your Administration is requested, under [No.* ***11.44B****][No.* ***11.44C****], to confirm the bringing into use of the frequency assignments to the [xxx] satellite network and to inform the Bureau that a space station with the capability of transmitting or receiving the frequency assignments has been deployed and maintained at the notified orbital position for a continuous period of 90 days, starting from the notified date of bringing into use. In this respect, kindly note that the date of bringing into use shall be in conformity with [No.* ***11.44B****][No.* ***11.44C****], …*

*In the absence of the confirmation of the bringing into use of the frequency assignments to the [xxx] satellite network within 120 days from the end of the period provided under No.****11.44****, in accordance with the Rules of Procedure relating to [No.* ***11.44B****][No.* ***11.44C****], these provisionally recorded frequency assignments will be considered as not having been brought into use before the end of the period provided under No.* ***11.44*** *and will be cancelled from the Master Register, in accordance with No.* ***11.48****.”*

* In order to ensure proper response within the regulatory timeframe, e.g., as soon as the date of receipt of the bringing or bringing back into-use information, it was deemed that the message should be sent sufficiently early e.g., as soon as the date of receipt of the bringing or bringing back into-use information. It seems that for some cases, the dispatch of this message has occurred almost at the end of the 120-day period which provides little flexibility to the notifying administration to respond to the BR message timely.

**Information on on-going ITU-R Study**

* The May 2022 meeting of WP 4A considered one input document which proposed formalizing a BR reminder for the case of an administration confirming the bringing into use or bringing back into use of frequency assignments, under Nos. **11.44B**, **11.44C** (…and **11.44D** and **E**) within 30 days of the end of the 90-day BIU or BBIU period. As noted in the document, this process of reminding the administration of such obligation is currently more of an informal practice of the BR.
* The input document proposes that, to avoid possible arguments on the actual date of receipt of this useful internal BR practice on No. **11.44B** or No. **11.44C**, it was believed that such BR informative letter should be transformed into a formal reminder in the RR, to be included e.g., below an example of the possible footnote to Nos. **11.44B**, **11.44C**, **11.44D** and **11.44E**:

“x *Together with acknowledging receipt of the information on the bringing into use [or bringing back into use] of frequency assignments to a satellite network or system in accordance with No.* ***11.44*** *[No.* ***11.49****], the Bureau shall send a reminder to the notifying administration on the confirmation of the date of bringing into use under Nos.* ***11.44B****,* ***11.44C****,* ***11.44D*** *and* ***11.44E****, as appropriate.”’*

* The meeting agreed to identify this as an AI 7 Topic and the single input document (Document [4A/668](https://www.itu.int/md/R19-WP4A-C-0668/en)) to the May 2022 meeting of WP 4A will be used as the baseline working document towards the development of the Working Document on Draft CPM text for WRC-23 Agenda Item 7 Topic D3.

2. Documents

* Input Document(s): [INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (J), [INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (AUS), [INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx) (KOR), [INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx) (VTN)
* Information Document(s): [INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf) (ASMG), [INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf) (CEPT)

3. Summary of discussions

3.1 Summary of APT Members’ views

3.1.1 Japan - Document APG23-4/[INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Japan supports the on-going ITU-R studies carried out by WP4A.

3.1.2 Australia - Document APG23-4/[INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Australia is monitoring developments on this Topic.

3.1.4 Korea (Republic of) - Document APG23-4/[INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx)

* The Republic of Korea supports on-going ITU-R studies for the possible modifications to the relevant regulatory provisions to add a procedure of sending reminder by the BR for the case of an administration confirming the bringing into use or bringing back into use of frequency assignments under Nos. **11.44B**, **11.44C**, **11.44D** and **11.44E**.

3.1.6 Viet Nam (Socialist Republic of) - Document APG23-4/[INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx) (VTN)

* Viet Nam supports the on-going ITU-R studies carried out by WP4A.

3.2 Summary of issues raised during the meeting

* None.

4. APT Preliminary View(s)

* APT Members support ITU-R studies for the possible modifications to the relevant regulatory provisions to add a procedure for the sending of reminders by the BR for the case of an administration confirming the bringing into use or bringing back into use of frequency assignments under RR Nos. **11.44B**, **11.44C**, **11.44D** and **11.44E**.

5. Other View(s) from APT Members

* None.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

7.1 Regional Groups

7.1.1 ATU (as of August 2022 (APG23-4/[INF-02](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx)))

* None.

7.1.2 ASMG (as of August 2022 (APG23-4/[INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf)))

* Support that the Radio Bureau sending a reminder to the notifying administration regarding the confirmation of the BIU/BBIU date under Nos. 11.44B , 44.11C, 44.11D, and 44.11E, as applicable.

7.1.3 CEPT (as of August 2022 (APG23-4/[INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)))

* CEPT supports to establish reminders for confirming the bringing into use or bringing back into use of a satellite network or system under Nos. **11.44B**, **11.44C**, **11.44D** and **11.44E**.

7.1.4 CITEL (as of August 2022 (APG23-4/[INF-28](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf)))

* None.

7.1.5 RCC (as of August 2022 (APG23-4/[INF-44](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf)))

* None.

7.2 International Organisations

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as of August 2022)

* None.

7. 2.3 WMO (as of August 2022)

* None.

7. 2.4 IARU R3 (as of August 2022)

* None.

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# Topic E: Improved procedures under RR Appendix 30B for new ITU Member States

## 1. Background Information

* WRC-19 adopted Resolution **170 (WRC-19)** in which administrations, which do not have any assignments in the Appendix **30B** List, or under coordination, have a one-off chance to file for assignments in the List and have this filing processed ahead of regular filings waiting to be processed. Moreover, in determining coordination requirements for the filings under Resolution **170 (WRC-19)**, criteria more preferential to the filing administration are used.
* WRC-07 revised Article 7 of Appendix **30B**, which provides provisions for new ITU Member States to obtain allotments in the Plan. Like those of Resolution **170** **(WRC-19)**, these procedures prescribe that the filings under Article 7 (Rev.WRC-07) will be processed ahead of regular filings waiting to be processed. However, unlike Resolution **170** **(WRC-19)**, Article 7 (Rev.WRC-07) identifies coordination requirements using the regular criteria as contained in Annex 4 to Appendix **30B**. This would give rise to a larger number of coordination requirements being identified than if the criteria used in Resolution **170** **(WRC-19)** had been used.
* Moreover, while the procedure in Resolution **170 (WRC-19)** is available also to new ITU Member States, there is nothing in Article **7 (Rev.WRC-07)** bringing this possibility to their attention. Given this discrepancy between the procedures for the addition of a new allotment to the Plan for a new Member State of the Union, and the procedures for converting allotments into assignments for those Member States which do not have any assignments in the Appendix **30B** List, or under coordination, and the similarities between these two cases for Member States, it is proposed to find a way to better align the procedures for these two cases.

**Information on on-going ITU-R Study**

* At the May 2022 meeting of WP 4A, the Chairman highlighted the results of the Correspondence Group 5 (CG#5) discussion on 11 March 2022 on this Topic, that we were contained in Document [4A/539](https://www.itu.int/md/R19-WP4A-C-0539/en), with the main result being that Document [4A/483](https://www.itu.int/md/R19-WP4A-C-0483/en) proposed draft CPM text with a specific detailed Method. There were some specific concerns raised with the Method, and that all of the measures in this Method were combined together, while there could be benefit in breaking them into pieces. The meeting also noted that this document will need to be merged with the previously developed regulatory text example in Annex 20 to Chairman’s Report (Document [4A/392 Annex 20](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0392!N20!MSW-E.docx)).
* The meeting considered a multi-country input document [4A/648](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP4A-C-0648) which presented the results of three case studies with a view to assess the appropriateness or otherwise of the use of only Resolution **170 (WRC-19)** criteria as a possible method to satisfy Topic E. The results of the cases considered indicated that it appears that the use of only Resolution **170 (WRC-19)** relaxed protection criteria is insufficient to resolve all of the degradation associated with incoming submissions for new Member States.
* The other input document considered was [4A/647](https://www.itu.int/md/R19-WP4A-C-0647/en) which noted the recent decision from the 89th meeting of the RRB regarding submissions from new Member States whereby the RRB requested “*the Bureau to implement similar measures for submissions under Resolution* ***559 (WRC-19)*** *at the 84th Board meeting.*” The document noted that as a consequence of this decision any additional power in the Article 7 submissions for new Member States compared to standard power of an allotment Plan in accordance with Annex 1 to RR Appendix **30B**, would not be justified. The document then presented detailed analysis for each of the seven cases of submissions from new Member States and suggested that if ultimately all coordination efforts fail, the only solution would be to identify an alternative orbital location. From the discussion, the meeting further noted that,

1. new Member States are not looking for more than what is in Annex 1 to Appendix **30B**,
2. while the Resolution **170 (WRC-19)** solution may help, it may not be enough,
3. additional use systems impacted by new Member State submission may have to consider more flexibility in accommodating these submissions realizing that operational systems may not come into use for some time,
4. there may be no “one size fits all” solution as each case is unique.

The meeting recommended that these points should be considered as administrations prepare draft CPM text for this Topic for the next meeting of WP 4A.

* As of the May 2022 meeting, the previously developed regulatory text example in Annex 20 to Chairman’s Report (Document [4A/392 Annex 20](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0392!N20!MSW-E.docx)) and Document [4A/483](https://www.itu.int/md/R19-WP4A-C-0483/en) will be the basis for some draft CPM text source.

2. Documents

* Input Document(s): [INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (J), [INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (AUS), [INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx) (KOR), [INP-43](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-43_China_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (CHN), [INP-57](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-57_SNG_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_and_7.docx) (SNG), [INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx) (VTN)
* Information Document(s): [INF-02](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx) (ATU), [INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf) (ASMG), [INF-28](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf) (CITEL), [INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf) (CEPT), [INF-44](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf) (RCC)

3. Summary of discussions

3.1 Summary of APT Members’ views

3.1.1 Japan - Document APG23-4/[INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Japan supports the on-going ITU-R studies carried out by WP4A.

3.1.2 Australia - Document APG23-4/[INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Australia is monitoring developments on this Topic.

3.1.4 Korea (Republic of) - Document APG23-4/[INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx)

* The Republic of Korea supports on-going ITU-R studies for granting new ITU Member States the same right as those granted to other Member States in RR AP **30B**, based on principles stipulated in Article 44 of the Constitution, Resolution **2 (Rev.WRC-03)** and those contained in Article **1** of RR AP **30B**.

3.1.5 China (People's Republic of) - Document APG23-4/[INP-43](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-43_China_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* China supports the efforts to grant new ITU Member States the same privilege as those granted to other Member States in AP**30B**, in order to ensure equitable access to orbits and frequencies resources.
* China supports finding a solution on a case by case basis, which could be compatible with allotments in the Plan and assignments in the List of AP**30B,** to meet the interference criteria defined in § 1.4 of Annex 1 to AP**30B** for this new ITU Member State.

3.1.6 Singapore (Republic of) - Document APG23-4/[INP-57](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-57_SNG_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_and_7.docx)

* Supports the possibility to grant new ITU Member States the same right as those granted to administrations having no assignments in the Appendix **30B** List, or under coordination, as adopted in Resolution **170 (WRC-19)**.
* Supports technical assessments and understanding of the interference scenarios for new ITU Member States so that the possible solution does not adversely impact the existing/future operations in the Appendix 30B bands.
* Supports finding a solution on a case by case basis, which is implementable to protect additional systems in the List, instead of a generic solution which could not address specific cases.
* Supports that submissions by new ITU Member States shall be adjusted to respect the carrier-to-noise ratio (C/N) contained in § 1.2 of Annex 1 to Appendix 30B.
* Supports finding a solution on a case by case basis to meet the interference criteria defined in § 1.4 of Annex 1 to Appendix **30B** for this new ITU Member State.

3.1.7 Viet Nam (Socialist Republic of) - Document APG23-4/[INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)

* Viet Nam supports ITU-R studies to improve the procedures under Appendix **30B** of the Radio Regulations for new ITU Member States.

3.2 Summary of issues raised during the meeting

* None.

4. APT Preliminary View(s)

* APT Members support granting new ITU Member States the same right as those granted to other Member States in Appendix **30B**, based on principles stipulated in Article **44** of the Constitution, Resolution **2 (Rev.WRC-03)** and those contained in Article **1** of AP**30B**, taking into accountResolution **170 (WRC-19).**
* APT Members support ITU-R studies to improve procedures under Appendix **30B** of the Radio Regulations for new ITU Member States.
* APT Members support technical assessments of the interference scenarios for new ITU Member States so that the possible solution, to the extent possible, does not affect the existing allotments in the Plan and assignments in the List of Appendix **30B**.
* APT Members encourage new ITU Member States to adjust the submissions in order to comply with the requirements as contained in § 1.2 of Annex 1 to Appendix **30B**.
* APT Members support finding a solution on a case by case basis, which could be compatible with allotments in the Plan and assignments in the List of Appendix **30B,** to meet the interference criteria defined in § 1.4 of Annex 1 to Appendix **30B** for this new ITU Member State.

5. Other View(s) from APT Members

* None.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

**7.1 Regional Groups**

7.1.1 ATU (as of August 2022 (APG23-4/[INF-02](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx)))

* Support the on-going studies to improve procedures under Appendix 30B of the Radio Regulations for new ITU Member States, in order to ensure equitable access to orbits and frequencies resources.
* Support ideas proposed in the option three that was submitted to the Fourth meeting of WP4A that took place in July 2021 by the Administrations concerned by Article 7 including South Sudan, while taking into account allotments and assignments arising from conversion of allotments into assignments with national service area with assistance from the BR.

7.1.2 ASMG (as of August 2022 (APG23-4/[INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf)))

* Support ongoing studies to improve procedures under Appendix 30B of the Radio Regulations for new ITU Member States, in order to ensure equitable access to orbital and frequency resources, while emphasizing that no restrictions are imposed on the allotments and assignments of Appendix 30B of the current Member States taking into account the decision of the Radio Regulations Board at its 89th meeting.
* The need for conducting additional studies to analyse all possible interference scenarios to enable these countries to obtain orbits slots and allotments under Appendix 30B.
* Encourage effective coordination and cooperation discussions between new ITU Member States and affected administrations to resolve any issues.

7.1.3 CEPT (as of August 2022 (APG23-4/[INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)))

* CEPT supports the possibility to grant new ITU Member States the same conditions as those granted to administrations having no assignments in the Appendix **30B** List, or assignments listed under 6.1, as adopted in Resolution **170 (WRC-19)**.
* CEPT supports that a comprehensive understanding of the interference scenarios for new ITU Member States can be achieved through additional technical analysis.
* CEPT encourage new ITU Member States and the resulting affected administrations to actively undertake and cooperate in coordination discussions to resolve any interference cases in addition to consider RR changes.

7.1.4 CITEL (as of August 2022 (APG23-4/[INF-28](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf)))

* With respect to WRC-23 AI 7, Topic E (Appendix 30B procedures for new ITU Member States), One administration is of the view that new ITU Member States seeking to obtain an allotment under Article 7 of Appendix 30B, should be granted the same privilege as those granted to administrations having no assignments in the Appendix 30B List, or under coordination, as adopted in Resolution 170 (WRC-19). This administration is further of the view that additional technical analysis is needed to reach a  
  comprehensive understanding of the interference scenarios for new ITU Member States but this administration would also encourage new ITU Member States and affected Administrations to actively undertake and cooperate in coordination discussions to resolve any interference cases.

7.1.5 RCC (as of August 2022 (APG23-4/[INF-44](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf)))

* Support efforts aimed at solving problems related to access to the radio frequency spectrum and satellite orbits for new Member States of the Union within the parameters of Appendix 30B.

7.2 International Organisations

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as of August 2022)

* None.

7. 2.3 WMO (as of August 2022)

* None.

7. 2.4 IARU R3 (as of August 2022)

* None.

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# 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.

**Information on on-going ITU-R Study**

* The fourth WP4A meeting (14 – 28 July 2021) considered the Japanese contribution [4A/369](https://www.itu.int/md/R19-WP4A-C-0369/en) and the multi-county contribution [4A/375R1](https://www.itu.int/md/R19-WP4A-C-0375/en) on the related subjects of excluding the territory of an administration from the uplink service area in RR Appendix 30A for Regions 1 and 3, and on implementing a regulatory solution for addressing the implications of this exclusion while extending this to RR Appendix 30B. It was agreed that these two subjects are closely related and should be studied together as a new Topic F under AI 7.
* As Document 4A/375R1 included discussion of both aspects of the Topic it was agreed to carry that document forward as a placeholder WD for this new Topic, with the following possible solutions:
* Introduce 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 Administration.
* Require the notifying Administration of an interfered-with satellite network to shape the coverage of the satellite receiving antenna of the interfered-with satellite network outside its service area in order not to create an obstacle for the deployment of national or sub-regional satellite networks of other countries in both RR Appendix 30A and Appendix 30B.”
* The WD on Topic F found in Annex 21 to the WP 4A Chairman’s Report [(Doc 4A/392 (Annex 21))](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0392!N21!MSW-E.docx).
* During the fifth WP 4A virtual meeting (27 October – 4 November 2021), there were inputs from Japan (Doc 4A/512), Luxembourg and a multi African country input that were not introduced during the meeting, due to lack of time.
* During the sixth WP 4A virtual/hybrid meeting (11-20 May 2022), there was an input from Saudi Arabia (Doc 4A/664), proposing methods for the draft CPM text. There was also an input from Japan (Doc 4A/545) that explained the protection in the area between the coverage area and the service area. Nevertheless, there were concerns raised on the inability to adjust/modify the uplink coverage area of an operational, or soon to be launched, satellite should an administration exclude their territory from the service area late in the process. Also, the proposal from Saudi Arabia suggesting coordination based on territory is an entirely new concept with no real technical basis to support it. The multi country input Doc 4A/672 provided examples of currently filed systems to highlight the difficulties faced under this Topic F.
* The draft CPM text has not been developed yet. These documents i.e. [4A/479](https://www.itu.int/md/R19-WP4A-C-0479/en), [4A/512](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP4A-C-0512), [4A/664](https://www.itu.int/md/R19-WP4A-C-0664/en), [4A/672](https://www.itu.int/md/R19-WP4A-C-0672/en) would be the source material for the draft CPM text.

2. Documents

* Input Documents: APG23-4/INP[10(J)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [17(AUS)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [27(IRN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-27_IRN_WP4_Preliminary_Views_on_WRC-23_Agenda_Item_7Topics_A_B_C_D1_F_H_and_K.docx), [37(KOR)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx), [43(CHN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-43_China_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [57(SNG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-57_SNG_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_and_7.docx), [78(VTN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)
* Information Documents APG23-4/[INF02(ATU)](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx), [21(ASMG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf), [28 (CITEL)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf), [44(RCC)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf), [48(CEPT)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)

3. Summary of discussions

**3.1 Summary of APT Members’ views**

**3.1.1 Japan - Document APG23-4/INP-10**

* 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** at this moment.

**3.1.2 Australia - Document APG23-4/INP-17**

* Australia is following developments on this Topic with a global focus related to the feeder-link/uplink coverage areas in RR Appendices **30A** and **30B**. It recognises the need to facilitate an Administration or a group of named Administrations in order to coordinate the feeder-link/uplink just as for regulatory provisions with regards to the downlink. Australia supports the need to find an 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**.

**3.1.3 Iran (Islamic Republic of) – Document APG23-4/INP-27**

* Islamic Republic of Iran supports further studies concerning the impact of exclusion of the territory from the service area and the coverage area for the feeder link/up-link in the frequency bands associated with RR Appendices **30A** and **30B** and in order to satisfy this topic is in view that, it is required to add:
* In respect of 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.
* In respect of Appendix **30B**:
* footnotes 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.

**3.1.4 Korea (Republic of) – Document APG23-4/INP-37**

* The Republic of Korea supports on-going ITU-R studies on the issue of 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**.
* The Republic of Korea also supports the exclusion of the territory of a country from the service area of feeder link of another country and further study on the adjustment of coverage area to the smallest to be aligned with the service area of feeder link under RR AP **30A**.

**3.1.5 China (People’s Republic of) – Document APG23-4/INP-43**

* 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 supports developing possible specific measures to avoid creating obstacles to those administrations wishing to establish satellite networks of AP**30B** over their territories, taking into account the ability for the roll-off of the receiving beams of adjacent satellite networks, and further study 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 needed.

**3.1.6 Singapore (Republic of) – Document APG23-4/INP-57**

* Singapore has the following preliminary views:
* Supports developing specific measures, if needed, to avoid creating obstacles to other administrations wishing to establish satellite networks over their territories; the regulatory and technical solutions should be implementable and not unduly restrict the operations of other satellite networks, in particular those already in operation.
* Supports developing specific measures taking into account the need for the roll-off of the space station receive beam to be fully protected. It is noted that alignment of the coverage area with the service area is not always technically feasible.

**3.1.7 Vietnam (Socialist Republic of) – Document APG23-4/INP-78**

* Viet Nam 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 Appendix **30A**.
* Viet Nam has no intention on the adjustment of the coverage area to the smallest to be aligned with the service area of the RR Appendix **30B** submissions under consideration.

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

* During the presentation of the Document APG23-4/INP-57, it was mentioned that the alignment of the coverage area with the service area is not always feasible, especially when the satellite network is already in operation.

4. APT Preliminary View(s)

* APT Members support on-going ITU-R studies on the issue of excluding the territory of a country from the service area of the feeder link of Appendix **30A** and adjustment of coverage area of the feeder link to the smallest service area of that submission under RR Appendix **30A**, as well as adjustment of coverage area to the smallest to be aligned with the service area of the submissions under RR Appendix **30B**.
* 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 Appendix **30A**.
* APT Members support developing specific measures to avoid creating obstacles to those administrations wishing to establish satellite networks of AP**30B** over their territories, taking into account the roll-off of the receiving beams of adjacent satellite networks.

5. Other View(s) from APT Members

* None.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

**7.1 Regional Groups**

7.1.1 ATU (as of August 2022) – Document APG23-4/INF-02

* 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.
* Propose considering the following for satisfying this Topic F:
* Introduce 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 Administration.
* Require the notifying Administration of an interfered-with satellite network to shape the coverage of the satellite receiving antenna of the interfered-with satellite network outside its service area in order not to create an obstacle for the deployment of national or sub-regional satellite networks of other countries in both RR Appendix 30A and Appendix 30B.

7.1.2 ASMG (as of August 2022) – Document APG23-4/INF-21

* 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.

7.1.3 CEPT (as of August 2022) - Document APG23-4/INF-48

* CEPT supports exploring if bilateral coordination solutions or national licensing conditions can address encountered problems on a case-by-case basis.
* CEPT supports developing specific measures, if needed, to avoid creating obstacles to establish satellite networks by other countries over their territories considering implementable regulatory and technical solutions that will not unduly restrict operations of other satellite networks, in particular satellite networks already in operation.
* CEPT notes that, as an example, aligning the coverage area with the service area is not always technically feasible.
* CEPT supports developing specific measures taking into account the required roll-off of the space station receive beam to be fully protected.
* 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 (as of August 2022) – Document APG23-4/INF-28

* With respect to WRC-23 AI 7, Topic F (Excluding uplink service area in AP 30A for R1&3 and aligning service area & coverage area in AP 30A and AP 30B), one administration is of the view that excluding the territory of an administration in AP30A from the uplink service area will not solve the problem addressed under this Topic, as the Test Points of the affected satellite networks is not used in the determination of the potential impact of the affecting satellite network. Furthermore, aligning the coverage area in AP30A & 30B with the service area is not always technically feasible. Furthermore, this administration would instead encourage to explore if bilateral coordination solutions or national licensing conditions could address encountered problems on a case-by-case basis.

7.1.5 RCC (as of August 2022) – Document APG23-4/INF-44

* support further studies concerning the impact of exclusion of the territory from the service area and the coverage area for the feeder link/up-link in the frequency bands associated with RR Appendices 30A and 30B.

**7.2 International Organisations**

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as August 2022)

* None.

7.2.3 WMO (as of August 2022)

* None.

7.2.4 IARU R3 (as of August 2022)

* None.

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# Topic G: Amendments to Res. 770 (WRC-19)

1. Background

* In addressing the *invites* of Resolution **770 (WRC-19)** to provide a functional description to implement the methodology contained in that Resolution, it has been determined that additional information is required to allow for a proper implementation. That is, corrections or clarifications need to be made to Resolution **770 (WRC-19)** before it can be consistently applied, some of which are regulatory in nature.
* The WD towards a preliminary draft new Recommendation ITU-R S.[RES 770] includes the compilation of relevant studies and results. Based on this work, it has been recognized that some modifications to Resolution **770 (WRC-19)** are required to allow for its implementation.
* ITU-R studies showed the need to implement such guidance in this Resolution.
* Include the value of speed of light: 2.99792458 x 105 km/s
* Modify the lower value for prain (unavailability of the link without interference) in (Step 0-10) as 0.01% instead of 0.001%
* Determine procedural and regulatory provisions to ensure that administrations having submitted CR/Cs and/or notifications before 15 December 2023 are given the opportunity to rectify the data already submitted (e.g. pfd and e.i.r.p. masks used to compute epfd statistics at the victim GSO receiver by applying the methodology contained in Recommendation ITU-R S.1503) based upon which the methodology in Resolution **770 (WRC-19)** is applied.

**Information on on-going ITU-R Study**

* During the fifth WP 4A virtual meeting (27 October – 4 November 2021), based on French input Doc 4A/493, the Intra-service sharing group has studied Resolution **770 (WRC-19)** and identified difficulties in application of this Resolution, along with possible solutions. A Note was prepared to the WP 4A Chairman, proposing this as a Topic under AI 7 (Document [4A/ 522 (Annex 42)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0522!N42!MSW-E.docx)). Since there was agreement on the technical aspects of these changes, the closing Plenary of WP 4A therefore agreed to establish a new AI 7 Topic to address the required changes in the Resolution.
* During the sixth WP 4A virtual/hybrid meeting (11-20 May 2022), the French input Doc 4A/625 proposed 2 Methods to address modifications to this Resolution **770 (WRC-19)** that was used to form the preliminary draft CPM text (Document [4A/691(Annex 35)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N35!MSW-E.docx)). In addition, that input also proposed some updates to the Preliminary Draft New Recommendation ITU-R S.[RES 770] (Document [4A/691(Annex 1)](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N01!MSW-E.docx)).
* Currently, there are 3 methods shown in the preliminary draft CPM text:
  + Method G1: No changes to Resolution **770 (WRC-19)**.
  + Method G2: Modify Resolution **770 (WRC-19)** to allow for its implementation.
  + Method G3: Remove Annex 2 from Resolution **770 (WRC-19)** and move it to a new Recommendation which would be incorporated by reference in Resolution **770 (WRC-19)**.

2. Documents

* Input Documents: APG23-4/INP[10(J)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [17(AUS)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [37(KOR)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx), [43(CHN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-43_China_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [78(VTN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)
* Information Documents APG23-4/[INF02(ATU)](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx), [21(ASMG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf), [28 (CITEL)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf), [44(RCC)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf), [48(CEPT)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)

3. Summary of discussions

**3.1 Summary of APT Members’ views**

**3.1.1 Japan - Document APG23-4/INP-10**

* Japan generally supports the on-going ITU-R studies carried out by WP4A regarding **Topic G**.

**3.1.2 Australia - Document APG23-4/INP-17**

* Australia is monitoring developments on this Topic.

**3.1.3 Korea (Republic of) – Document APG23-4/INP-37**

* The Republic of Korea supports possible modifications to Resolution **770 (WRC-19)** to make its implementation feasible based on results of ITU-R studies.

**3.1.4 China (People’s Republic of) – Document APG23-4/INP-43**

* The China supports to modify Resolution **770 (WRC-19)** to make its implementation feasible in line with the rain conditions to be considered and relevant C/N performance objectives.

**3.1.5 Vietnam (Socialist Republic of) – Document APG23-4/INP-78**

* Viet Nam supports the on-going ITU-R studies carried out by WP4A.

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

* None.

4. APT Preliminary View(s)

* APT Members support possible modifications to Resolution **770 (WRC-19)** to make its implementation feasible based on results of ITU-R studies.

5. Other View(s) from APT Members

* None.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

**7.1 Regional Groups**

7.1.1 ATU (as of August 2022) – Document APG23-4/INF-02

* None.

7.1.2 ASMG (as of August 2022) – Document APG23-4/INF-21

* Support amending Resolution 770, and follow the discussions on this subject to ensure that there is no impact on GSO systems

7.1.3 CEPT (as of August 2022) - Document APG23-4/INF-48

* CEPT supports Method 3 of the draft CPM text in ITU-R WP 4A in which Annex 2 of Resolution 770 (WRC-19) is included in a ITU-R Recommendation.

7.1.4 CITEL (as of August 2022) – Document APG23-4/INF-28

* None.

7.1.5 RCC (as of August 2022) – Document APG23-4/INF-44

* None.

**7.2 International Organisations**

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as August 2022)

* None.

7.2.3 WMO (as of August 2022)

* None.

7.2.4 IARU R3 (as of August 2022)

* None.

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# Topic H: Enhanced protection of RR Appendices 30/30A in R1&3 and RR Appendix 30B

1. Background

* Before WRC-15, in accordance with § 4.1.10 of Article 4 of 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 worth mentioning that § 4.1.10d provides only 30 days to an Administration to react.
* Furthermore, as an assignment in the Plan is for future use and that it has higher status than an assignment in the List stemming from additional use, it is also proposed to apply a tolerance of 0.25 dB instead of 0.45 dB in respect of its the equivalent downlink protection margin.
* It is further recalled that the value of 0.45 dB was merely used to facilitate the revision of the Regions 1 and 3 Plan by WRC-2000.
* A situation similar to that above can also occur in Appendix **30B** 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.

**Information on on-going ITU-R Study**

* In the ITU-R/WP-4A meeting, on 27 October- 4 November 2021, two documents submitted on behalf of 25 African countries, the first with specific proposals for addressing Resolution **559 (WRC-19)** coordination activities (Doc. [4A/480](https://www.itu.int/md/R19-WP4A-C-0480/en)), and the second with proposals for addressing long-term protection of BSS and FSS Plan assignments (Doc. [4A/477](https://www.itu.int/md/R19-WP4A-C-0477/en)) and also from the BR including [4A/401](https://www.itu.int/md/R19-WP4A-C-0401/en),[4A/403](https://www.itu.int/md/R19-WP4A-C-0403/en),[4A/404](https://www.itu.int/md/R19-WP4A-C-0404/en) and [4A/405](https://www.itu.int/md/R19-WP4A-C-0405/en), in connection with statistic of the new notices of satellite networks submitted under § 6.1 of Article 6 of RR Appendix 30B, Change in reference situation (EPM) between WRC-2000 and October 2021 for Regions 1 and 3 Plan assignments, Report on the coordination of submissions made in accordance with Resolution 559 (WRC-19), and statistics on submissions for additional uses under Article 4 of RR Appendices 30 and 30A in Regions 1 and 3 since WRC-2000, respectively.
* In the last ITU-R/WP-4A meeting, on 11-20 May 2022, several contributions was received in this regard, including [4A/679](https://www.itu.int/md/R19-WP4A-C-0679/en) (BR), [4A/680](https://www.itu.int/md/R19-WP4A-C-0680/en) (BR), [4A/683](https://www.itu.int/md/R19-WP4A-C-0683/en) (BR), [4A/557](https://www.itu.int/md/R19-WP4A-C-0557/en) (IRN), [4A/641](https://www.itu.int/md/R19-WP4A-C-0641/en) (Multi), [4A/671](https://www.itu.int/md/R19-WP4A-C-0671/en) (Multi). In the documents submitted on behalf of 25 African countries and also by I. R. of Iran, the introduction of which provided a detailed history of the evolution of the situation in the planned bands and proposed that long-term protection of the planned bands be identified as an AI 7 Topic. This led to a protracted exchange of views with a number of points being raised. The already heavy workload of WRC-23 was noted and it was suggested that such a complex issue should be a stand-alone WRC agenda item with a Resolution to properly frame the issue. In addition, the point was made that the proposal was overly broad and not well defined. In order to be dealt with truly effectively the issue of long-term protection needed more precision in its definition. One aspect of the proposal called for the RRB developing an RoP, but the point was made that there is no ambiguity in the current RR for which development of an RoP could be justified. On the other hand, the point was made that unless something is done soon the circumstances that led to the need for Resolution **559 (WRC-19)** would be repeated. The point of the apparent non-compliance with § 2.6*bis* of Article 2 of Appendix **30B** was again raised during this discussion. Having heard all of these views, and noting the impending end of the current session, the Chairman of the WP-4A requested all parties to reflect on what they have heard in order to conclude on this issue at a future session.
* The proponents of the above issue approached the Chairman of the WP-4A in the period before the next session and offered a proposed solution that the Chairman of the WP-4A offered to the next session. The proposed solution was as follows: A new AI 7 Topic would be identified to be limited in scope to the issues of addressing implicit agreement in Regions 1 and 3 Appendices **30/30A** and Appendix **30B**, and to reverting to a coordination protection trigger of 0.25 dB for assignments in the Regions 1 and 3 Plan, as opposed to the current trigger of 0.45 dB. The Chairman of the WP-4A offered this proposal to the next session, and with this limited and more clearly defined scope it was agreed to identify this as an additional AI 7 Topic, named Topic H.

2. Documents

* Input Documents: APG23-4/INP[10(J)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [17(AUS)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [27(IRN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-27_IRN_WP4_Preliminary_Views_on_WRC-23_Agenda_Item_7Topics_A_B_C_D1_F_H_and_K.docx), [37(KOR)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx), [57(SNG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-57_SNG_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_and_7.docx), [78(VTN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)
* Information Documents APG23-4/[INF02(ATU)](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx), [21(ASMG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf), [28 (CITEL)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf), [44(RCC)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf), [48(CEPT)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)

3. Summary of discussions

**3.1 Summary of APT Members’ views**

**3.1.1 Japan - Document APG23-4/INP-10**

* For **Topic H**, Japan supports the revision of implicit agreement provisions, but does not support to reduce the EPM degradation tolerance from 0.45 dB to 0.25dB, since it does not agree with the principle of WRC-2000 Plan.

**3.1.2 Australia - Document APG23-4/INP-17**

* Australia is monitoring developments on this Topic.

**3.1.3 Iran (Islamic Republic of) – Document APG23-4/INP-27**

* I.R. of Iran supports to create a new Topic H under agenda item 7 of WRC-23 to address:
* The rational, efficient and economically use of spectrum and orbital resources in the planned frequency bands (Appendices **30/30A** and **30B**) by strictly observing the principles stipulated in Article **44** of the ITU Constitution and those contained in Resolution **2 (Rev.WRC-03)** as well as principles contained in the above-mentioned Appendices in order to ensure the long-term protection of the above-mentioned Plans and their future developments for providing national services. Such protection includes, inter alia, strictly limiting the submission of “additional uses” as well as their ever increasing the number of such submissions in respect of the BSS and FSS Plans intended to enter in the List associated to these Plans.
* Statistics provided by the Bureau to ITU-R studies have demonstrated that for the case of both Regions 1 and 3 BSS Plan assignments and for 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 in BR contributions ([4A/403](https://www.itu.int/md/R19-WP4A-C-0403/en) and [4A/445](https://www.itu.int/md/R19-WP4A-C-0445/en)) 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.
* In order to satisfy the Topic H, the Article 4 of the Appendices **30/30A** and the Article 6 of the Appendix 30B are required to be modified, in appropriate manner.

**3.1.4 Korea (Republic of) – Document APG23-4/INP-37**

* The Republic of Korea supports the possible removal of the concept of the “implicit agreement” in the RR APs **30**, **30A** and **30B**.

**3.1.5 Singapore (Republic of) – Document APG23-4/INP-57**

* Singapore does not support the current CPM Method and has the following preliminary views:
* Supports to enhance the protection of Appendices **30/30A** in Regions 1 & 3 and Appendix **30B** for networks in the Plan and the List.
* Supports to replace the implicit agreement in case of no comments in due time of an affected Regions 1 and 3 BSS Plan assignments or Appendix **30B** allotments from an additional use/system, by a new regulatory solution allowing the administration of the additional use/system to operate until the national assignment/allotment is brought into use.
* Supports to not consider mutual interference between Regions 1 and 3 BSS Plan assignments or Appendix **30B** allotments and additional use/system networks using this new regulatory solution since they will not operate simultaneously the same frequency range over the same area.
* Does not support to reduce the EPM degradation tolerance in Appendices **30/30A** without any technical studies supporting the reasoning behind such a modification.

**3.1.6 Vietnam (Socialist Republic of) – Document APG23-4/INP-78**

* Viet Nam supports the on-going ITU-R studies carried out by WP4A.

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

* Japan indicated that regarding the reduction of the EPM (Equivalent Protection Margin) degradation tolerance from 0.45dB to 0.25dB, Japan submitted a contribution (Doc. 4A/545) and considered retaining the EPM degradation tolerance of 0.45 dB with the results of technical studies.
* Japan had requested some clarification regarding the “new regulatory solution” mentioned in the second bullet of the Preliminary View of Singapore (Republic of) in Section 3.1.5. Singapore informed that they were referring to the regulatory solution proposed in Document [4A/641](https://www.itu.int/md/R19-WP4A-C-0641/en) under Topic I concerning “Special agreements under RR Appendix **30B**” as summarized below:
* define a new type of agreement between a national allotment and an assignment. Under such agreement, the administration of the national allotment allows the assignment to operate until the bring into use of its national allotment. At that time, the administration of the assignment commits to respect the section 2.2 of Annex 4 pfd levels over the territory of national allotment. As national allotment and assignment will not operate simultaneously the same frequency over the same area, mutual interference is not considered.
* develop a new Resolution allowing national allotment, subject to agreements under § 6.15 of RR Appendix **30B**:
* to sign this new type of agreement with concerned assignments,
* to request the Bureau to update the reference situation without reviewing the previous examinations, and
* to request the notifying administrations of assignments for which procedures of Article 6 of RR Appendix **30B** have not yet been completed and which have been examined by the Bureau before the signature of such agreement to make their utmost efforts to take into account the new reference situations of this national allotment.
* During the discussion, it was indicated that depending on the outcome of the ITU-R studies on the regulatory solution proposed for Topic I, Singapore was of the view that there could be a possibility to implement similar regulatory solution for Topic H.
* Notwithstanding the conclusion of ITU-R studies, one possible option to address the difficulties arising from tacit agreement would be:
* Modifications to Article 4 of RR Appendix 30

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 Plan in Regions 1 and 3.

* Modifications to Article 4 of RR Appendix 30A

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 Plan in Regions 1 and 3.

* Modifications to Article 6 of RR Appendix 30B

**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 allotment in the Plan or an assignment treated under Article 6 in accordance with § 7.7 of Article 7.     (WRC‑23)

4. APT Preliminary View(s)

* APT Members support studies on the possible removal of the concept of “implicit agreement” from the Appendices **30**/**30A** and Appendix **30B**.

5. Other View(s) from APT Members

* Some APT Members do not support the reduction of the EPM degradation tolerance in Appendices **30/30A** without sufficient technical studies supporting such modification, since the studies were performed on the retention of 0.45 dB of the EPM degradation tolerance and its reduction would not be in accordance with the principles used to establish the WRC-2000 Plan.
* Some APT Members are of the view that before the establishment of the Regions 1 and 3 Plan in WRC-2000, the criteria used to identify affected administrations based on technical studies was 0.25 dB. In WRC-2000 that was changed to 0.45 dB without any technical studies. Therefore some administrations proposed to go back to 0.25dB, that was based on some studies.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

**7.1 Regional Groups**

7.1.1 ATU (as of August 2022) – Document APG23-4/INF-02

* None.

7.1.2 ASMG (as of August 2022) – Document APG23-4/INF-21

* Support studies related to this topic with aim to provide a reasonable solution to ensure the reference situation is not degraded due to the concept of “implicit agreement” in Appendices AP30/30A/30B, thus improving the status of allotments/assignments in the plans that are affected by the decline of the reference situation (EPM) so that These allotments/assignments are effectively usable by the concerned administrations wishing to access the AP30/30A/30B plans for the provision of the broadcasting-satellite service or the fixed-satellite service

7.1.3 CEPT (as of August 2022) - Document APG23-4/INF-48

* CEPT supports to enhance the protection of Appendices 30/30A in Regions 1 & 3 and Appendix 30B for networks in the Plan and the List.
* CEPT supports to replace the implicit agreement in case of no comments in due time of affected Regions 1 and 3 BSS Plan assignments or Appendix 30B allotments on an additional use/system, with a new regulatory solution allowing the administration of the additional use/system to operate until the national assignment/allotment is brought into use.
* CEPT supports to not consider mutual interference between Regions 1 and 3 BSS Plan assignments or Appendix 30B allotments and additional use/system networks using this new regulatory solution, since they will not operate the same frequency range over the same area simultaneously.
* CEPT does not support to reduce the EPM degradation tolerance in Appendices 30 and 30A without any technical studies supporting the reasoning behind such a modification.

7.1.4 CITEL (as of August 2022) – Document APG23-4/INF-28

* None.

7.1.5 RCC (as of August 2022) – Document APG23-4/INF-44

* None.

**7.2 International Organisations**

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as August 2022)

* None.

7.2.3 WMO (as of August 2022)

* None.

7.2.4 IARU R3 (as of August 2022)

* None.

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# Topic I: Special agreements under RR Appendix 30B

## 1. Background Information

* 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 RR Appendix **30B**, it shall submit to the Radiocommunication Bureau all required information as specified in RR Appendix **4**. Then, the Bureau is determining 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 on it under § 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.
* At the time of the Part B submission of this assignment under § 6.17 or § 6.25, as appropriate, the final characteristics of this assignment could impact the overall aggregate carrier-to-interference levels of the allotment of the administration which didn’t give their decision in due time. These overall aggregate carrier-to-interference levels are used to determine the protection of this allotment or assignment for future submission under § 6.1 and if an allotment can still be put into operation with decent services. Implicit agreements could lead to a situation that no decent services can be provided because of very low overall aggregate carrier-to-interference levels.
* It is also important to note that the same consequence would occur if the affected administration signed an explicit agreement and the targeting area for the assignment submitted under § 6.1 is close to the territory of this administration which signed an explicit agreement.
* According to current AP**30B** rules, the only solution for national allotments with low overall aggregate carrier-to-interference levels to restore adequate overall aggregate carrier-to-interference levels, is to convert their national allotment into an assignment at another orbital position under § 6.1 where adequate overall aggregate carrier-to-interference levels are afforded and to enter it in the List. After the 8 years period for bringing into use, as the assignment will not be brought into use, the assignment will be reinstated in the Plan at the new orbital position with adequate overall aggregate carrier-to-interference levels. The difficulty with this methodology is the fact that it may not be possible to find any suitable alternative orbital slots which could ensure an adequate overall aggregate carrier-to-interference levels. In addition, the converting administration would face challenges in frequency coordination as currently encountered by 7 Administrations that have requested new allotments under Article 7 of RR Appendix **30B**.

**Information on on-going ITU-R Study**

* The May 2022 meeting of WP 4A considered a multi-country input document [4A/641](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP4A-C-0641) on the possibility of special agreements between administrations under RR Appendix **30B**. The document proposes to define a new type of agreement between a national allotment and an incoming assignment, in which, under such agreement, the administration of the national allotment would allow the incoming assignments to operate until the bringing into use of its national allotment. At that time, the administration of the incoming assignment would commit to respect the section 2.2 of Annex 4 pfd levels over the territory of the national allotment. As the national allotment and the incoming assignment will not operate simultaneously the same frequency over the same area, mutual interference would not be considered.
* The input document proposes a possible regulatory solution to address this topic as follows:
* define a new type of agreement between a national allotment and an assignment. Under such agreement, the administration of the national allotment allows the assignment to operate until the bring into use of its national allotment. At that time, the administration of the assignment commits to respect the section 2.2 of Annex 4 pfd levels over the territory of national allotment. As national allotment and assignment will not operate simultaneously the same frequency over the same area, mutual interference is not considered.
* develop a new Resolution allowing national allotment, subject to agreements under § 6.15 of RR Appendix **30B**:
* to sign this new type of agreement with concerned assignments,
* to request the Bureau to update the reference situation without reviewing the previous examinations, and
* to request the notifying administrations of assignments for which procedures of Article 6 of RR Appendix **30B** have not yet been completed and which have been examined by the Bureau before the signature of such agreement to make their utmost efforts to take into account the new reference situations of this national allotment.
* The meeting agreed to consider this issue as a new AI 7 Topic, and that the single input document (Document [4A/641](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP4A-C-0641)) to the May 2022 meeting of WP 4A will be used as the baseline working document towards the development of the Working Document on Draft CPM text for WRC-23 Agenda Item 7 Topic I.

2. Documents

* Input Document(s): [INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (J), [INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (AUS), [INP-57](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-57_SNG_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_and_7.docx) (SNG), [INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx) (VTN)
* Information Document(s): [INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf) (ASMG), [INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf) (CEPT)

3. Summary of discussions

3.1 Summary of APT Members’ views

3.1.1 Japan - Document APG23-4/[INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Japan supports the on-going ITU-R studies carried out by WP4A.

3.1.2 Australia - Document APG23-4/[INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Australia is monitoring developments on this Topic.

3.1.6 Singapore (Republic of) - Document APG23-4/[INP-57](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-57_SNG_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_and_7.docx)

* Supports the development of a regulatory solution based on a specific agreement, on a voluntary basis, allowing an administration suffering from low reference protection margin for its national allotment in Appendix **30B** due to agreements under § 6.15, to retrieve adequate reference protection margin.
* Supports the possibility to sign a specific agreement between an additional system and a national allotment in Appendix **30B** permitting the additional system to cover the territory of the national allotment in Appendix **30B** until the BIU of this national allotment in Appendix **30B**.
* Supports the adaptation of the additional system operations to not create harmful interference and to fully protect the operations of the national allotment with which the specific agreement was signed.

3.1.6 Viet Nam (Socialist Republic of) - Document APG23-4/[INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)

* Viet Nam supports the on-going ITU-R studies carried out by WP4A.

3.2 Summary of issues raised during the meeting

* None.

4. APT Preliminary View(s)

* None at this stage.

5. Other View(s) from APT Members

* None.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

## 7.1 Regional Groups

7.1.1 ATU (as of August 2022 (APG23-4/[INF-02](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx)))

* None.

7.1.2 ASMG (as of August 2022 (APG23-4/[INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf)))

* Follow-up to studies related to this item to consider the possibility of applying additional  
  measures to national allotments subject to agreements under § 15.16 of Appendix 30B to restore the appropriate overall aggregate carrier-to-interference without altering the orbital position of the national allotments.

7.1.3 CEPT (as of August 2022 (APG23-4/[INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)))

* CEPT supports the development of a regulatory solution based on a specific agreement, on a voluntary basis, allowing an administration suffering from low reference protection margin for its national allotment in Appendix **30B** due to agreements under § 6.15 to retrieve adequate reference protection margin.
* CEPT supports the possibility to sign a specific agreement between an additional system and a national allotment in Appendix **30B** permitting the additional system to cover the territory of the national allotment in Appendix **30B** until the bringing into use of this national allotment in Appendix **30B**.
* CEPT supports the adaptation of the additional system operations to not create harmful interference and to fully protect the operations of the national allotment with which the specific agreement was signed.
* CEPT encourages administrations for which § 6.15 of Appendix **30B** has been applied with respect to a national allotment, to cooperate and consider signing such a specific agreement.

7.1.4 CITEL (as of August 2022 (APG23-4/[INF-28](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf)))

* None.

7.1.5 RCC (as of August 2022 (APG23-4/[INF-44](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf)))

* None.

7.2 International Organisations

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as of August 2022)

* None.

7. 2.3 WMO (as of August 2022)

* None.

7. 2.4 IARU R3 (as of August 2022)

* None.

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# Topic J: MODs to Res. 76 (Rev.WRC-15)

## 1. Background Information

* Resolution **76 (Rev.WRC-15)** resolves that administrations must take all necessary steps, including modifications to their systems, to ensure that aggregate epfd levels are not exceeded. If aggregate levels are exceeded, then administrations must take all necessary measures to expeditiously decrease aggregate emission levels in Tables 1A to 1D. While *noting* Recommendation ITU‑R S.1588, “Methodologies for calculating aggregate downlink equivalent power flux-density produced by multiple non-geostationary fixed-satellite service systems into a geostationary fixed-satellite service network”, the Resolution invites the ITU-R to continue studies to develop a methodology to calculate the aggregate epfd levels; to develop one Recommendation on the modeling of interference and another one containing procedures to be used by administrations to ensure that aggregate epfd levels not exceeded; and to develop measurement techniques to identify non-GSO FSS systems in excess of the aggregate limits.
* Resolution **76 (Rev.WRC-15)** calls for the development of a Recommendation on procedures for reducing the aggregate epfd levels and calls for negotiations among administrations to jointly reduce such levels. While the aggregate epfd limits are specified in Tables 1A to 1D of the Resolution, there is no clear regulatory framework nor procedures outlined for the involved administrations to collaboratively determine whether these aggregate levels are exceeded.

**Information on on-going ITU-R Study**

* The May 2022 meeting of WP 4A consider an input document [4A/616](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP4A-C-0616) proposing an update to Resolution **76 (Rev.WRC-15)** to require administrations to collaboratively evaluate the aggregate non-GSO FSS epfd levels, and if needed, to negotiate the reductions in their epfd levels via consultations meetings.
* The proposal was inspired by the processes in Resolution **609 (Rev.WRC-07)** and in Resolution **769 (WRC-19)**. There was some support for this issue noting that it was time to address such a process given the ambiguity in Resolution **76** **(Rev.WRC-15)** as to how the aggregate epfd would be respected. There was also some hesitation, which was mainly focused on the fact that the technical work for evaluating aggregate epfd was still underway, however it was pointed out that what is being proposed has nothing to do with technical aspects but with the process to be followed by administrations.
* The meeting agreed to consider this issue as a new AI 7 Topic, and to carry forward the preliminary draft CPM text as Annex 37 to Chairman’s Report (Document [4A/691 Annex 37](https://www.itu.int/dms_ties/itu-r/md/19/wp4a/c/R19-WP4A-C-0691!N37!MSW-E.docx)).

2. Documents

* Input Document(s): [INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (J), [INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (AUS), [INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx) (KOR), [INP-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-48_Thailand_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.17_and_7.docx) (THA), [INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx) (VTN)
* Information Document(s): [INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf) (ASMG), [INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf) (CEPT)

3. Summary of discussions

3.1 Summary of APT Members’ views

3.1.1 Japan - Document APG23-4/[INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Japan supports the on-going ITU-R studies carried out by WP4A.

3.1.2 Australia - Document APG23-4/[INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Australia is monitoring developments on this Topic.
* Australia does not support any erosion of existing protections in the bands identified.

3.1.4 Korea (Republic of) - Document APG23-4/[INP-37](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-37_KOR_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_and_7.docx)

* The Republic of Korea supports the possible modifications to Resolution **76 (Rev.WRC-15)** to introduce the concept of “consultation process/meetings” in order to ensure protection of GSO FSS and BSS networks.

3.1.6 Thailand (Kingdom of) - Document APG23-4/[INP-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-48_Thailand_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.17_and_7.docx)

* Thailand supports ITU-R studies on the possible modification of Resolution **76** **(Rev.WRC-15)** in order to introduce the consultation process in connection with the aggregate epfd limits of non-GSO FSS systems in Tables 1A to 1D.

3.1.6 Viet Nam (Socialist Republic of) - Document APG23-4/[INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)

* Viet Nam supports the on-going ITU-R studies carried out by WP4A.

3.2 Summary of issues raised during the meeting

* None.

4. APT Preliminary View(s)

* None at this stage.

5. Other View(s) from APT Members

* Some APT Members support the possible modifications to Resolution **76 (Rev.WRC-15)** to introduce the concept of “consultation process/meetings” in order to ensure protection of GSO FSS and BSS networks.
* Some APT Members do not support any reduction of existing protections in the bands identified.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

7.1 Regional Groups

7.1.1 ATU (as of August 2022 (APG23-4/[INF-02](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx)))

* None.

7.1.2 ASMG (as of August 2022 (APG23-4/[INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf)))

* Support the introduction of the concept of a “consultation/meeting process” with regards to evaluate the aggregate epfd produced by all Non-GSO satellite systems to reduce them.

7.1.3 CEPT (as of August 2022 (APG23-4/[INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)))

* CEPT supports the modification of Resolution **76 (Rev.WRC-15)** to introduce the concept of “consultation process/meetings” and to clarify the non-GSO systems which are eligible to participate in the consultation meetings.
* CEPT supports that the technical work, such as methodologies to be used to evaluate aggregate EPFD limit compliance, as well as the process and procedures for the consultation meeting, should be addressed in separate relevant documents such as in a new ITU-R Recommendation, in line with *invites* 1, 2 and 3 of Resolution **76 (Rev. WRC-15)**.

7.1.4 CITEL (as of August 2022 (APG23-4/[INF-28](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf)))

* None.

7.1.5 RCC (as of August 2022 (APG23-4/[INF-44](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf)))

* None.

7.2 International Organisations

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as of August 2022)

* None.

7. 2.3 WMO (as of August 2022)

* None.

7. 2.4 IARU R3 (as of August 2022)

* None.

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# Topic K: MODs to Res. 553 (Rev.WRC-15)

## 1. Background Information

* The additional regulatory measures contained in Resolution **553 (Rev.WRC-15)** are intended for the broadcasting satellite networks in the frequency band 21.4-22 GHz in Regions 1 and 3 for the enhancement of equitable access to this frequency band.
* Resolution **553 (Rev.WRC-15)** was adopted to provide a better situation regarding equitable access compared with the Planning Approach. As stated in “*considering further a)*” to this Resolution a priori planning for BSS networks in this frequency band was avoided *“as it freezes access according to technological assumptions at the time of planning and then prevents flexible use taking account of real world demand and technical developments;”*
* Unfortunately, the current provisions contradict the above objective of the Resolution and can permanently deprive administrations of being effectively benefited from the Resolution without even once having a notified network in this frequency band.
* In this document, two observed difficulties which arise from the two conditions in Resolution **553** **(Rev.WRC-15)** are described and proposed how to address these difficulties.

**Information on on-going ITU-R Study**

* The May 2022 meeting of WP 4A consider an input document [4A/558](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP4A-C-0558) which proposed specific ideas for modification to Resolution **553 (Rev.WRC-15)** in order to ensure equitable access to the frequency band 21.4-22 GHz and to remove certain restrictions that could prevent administrations from making effective use of the Resolution. As explained in the oral introduction of the document, this proposal was an outgrowth of direct experience of an administration with applying the Resolution.
* The input document proposes a possible method to modify Resolution **553 (Rev.WRC-15)** as follows:
* The first proposed modification concerns part of paragraph 1 in the attachment to the Resolution, which states that the special procedure “*can only be applied once*” by an administration. It is proposed to modify this provision in a way that the special procedure “can be applied for one network per administration at a given time”. Accordingly, paragraph two, which explains the current restriction, should be deleted or can be modified to explain the new proposed restriction.
* The second proposed modification refers to another part of paragraph 1 in the attachment to the Resolution, which states administrations with a network “*successfully examined under No.* ***9.34*** *and published under No.* ***9.38*** *for the frequency band 21.4-22 GHz*”, are not eligible to send a request under Resolution **553** **(Rev.WRC-15)**. It is proposed to modify this provision in a way that administrations would be not eligible only if they have two or more networks with the above conditions.
* The meeting noted that a number of administrations supported identifying this as an AI 7 Topic and very little concern was expressed, and hence, the meeting agreed to create a new AI 7 Topic for this issue.
* The meeting agreed that the single input document (Document [4A/558](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=R19-WP4A-C-0558)) to the May 2022 meeting of WP 4A will be used as the baseline working document towards the development of the Working Document towards on WRC-23 Agenda Item 7 Topic K.

2. Documents

* Input Document(s): [INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (J), [INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (AUS), [INP-27](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-27_IRN_WP4_Preliminary_Views_on_WRC-23_Agenda_Item_7Topics_A_B_C_D1_F_H_and_K.docx) (IRN), [INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx) (VTN)
* Information Document(s): [INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf) (ASMG), [INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf) (CEPT)

3. Summary of discussions

3.1 Summary of APT Members’ views

3.1.1 Japan - Document APG23-4/[INP-10](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)s

* Japan supports the on-going ITU-R studies carried out by WP4A.

3.1.2 Australia - Document APG23-4/[INP-17](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx)

* Australia is monitoring developments on this Topic.

3.1.3 Iran (Islamic Republic of) - Document APG23-4/[INP-27](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-27_IRN_WP4_Preliminary_Views_on_WRC-23_Agenda_Item_7Topics_A_B_C_D1_F_H_and_K.docx)

* I. R. of Iran supports the proposed modifications to Resolution **553 (REV.WRC-15)** to enhance equitable access to the frequency band 21.4-22 GHz.

3.1.6 Viet Nam (Socialist Republic of) - Document APG23-4/[INP-78](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx) (VTN)

* Viet Nam supports the on-going ITU-R studies carried out by WP4A.

3.2 Summary of issues raised during the meeting

* None.

4. APT Preliminary View(s)

* APT Members support the ITU-R studies on the possible modifications to Resolution **553 (Rev.WRC-15)** to enhance equitable access to the frequency band 21.4-22 GHz and to remove those restrictions in Resolution **553 (Rev.WRC-15)** that can prevent administration from taking effective advantage of this resolution.

5. Other View(s) from APT Members

* None.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

7.1 Regional Groups

7.1.1 ATU (as of August 2022 (APG23-4/[INF-02](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx)))

* None.

7.1.2 ASMG (as of August 2022 (APG23-4/[INF-21](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf)))

* Follow-up studies to modify Resolution 553 (Rev.WRC-15) to ensure equitable access to the 22-21.4 GHz frequency band.

7.1.3 CEPT (as of August 2022 (APG23-4/[INF-48](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)))

* CEPT supports the possibility to apply the special procedure of Resolution **553 (**Rev. WRC-15) again if the requesting administration fails to bring into use a network even if the special procedure of Resolution 553 (Rev. WRC-15**)** was previously requested.
* CEPT considers supporting the possibility to also apply the special procedure of Resolution **553 (Rev. WRC-15)** once if the requesting administration has at maximum one network successfully examined under No. **9.34** and published under No. **9.38** for the frequency band 21.4-22 GHz and at the same orbital position(s*)* as the network to which the special procedure is to be applied.

7.1.4 CITEL (as of August 2022 (APG23-4/[INF-28](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf)))

* None.

7.1.5 RCC (as of August 2022 (APG23-4/[INF-44](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf)))

* None.

7.2 International Organisations

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as of August 2022)

* None.

7. 2.3 WMO (as of August 2022)

* None.

7. 2.4 IARU R3 (as of August 2022)

* None.

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# Topic L: TT&C for non-GSO in-orbit servicing

1. Background

* In-orbit services (IOS) are those performed by a spacecraft to maintain, repair, upgrade, refuel or de-orbit a space asset while it is in orbit or to de-orbit or re-orbit a space debris object. These activities require the IOS servicer spacecraft to approach, rendezvous and dock with the space asset[[2]](#footnote-2) or space debris object. Types of IOS include active debris removal (ADR), end-of-life (EOL), and life extension (LEX) services.
* Of vital importance for the servicing of client Non-GSO satellites or removal of space debris objects in LEO orbits is the availability of robust, reliable and resilient telemetry, tracking and command (TT&C) links to ensure the servicer spacecraft can safely perform the critical close proximity operations (CPO) or rendezvous and docking operations (RDO).
* Regular Non-GSO spacecraft operating in a certain satellite service (e.g. FSS, BSS, MSS, EESS etc etc) would normally place their TT&C links either under the satellite service in which they operate (c.f. RR No **1.23**) or under the Space Operation Service (SOS). Non-GSO IOS spacecraft are different in that, in a strict sense, their primary function is not per se to provide communication services, but to offer IOS applications. Therefore, the need for reliable TT&C is of paramount importance for such spacecraft.

**Information on on-going ITU-R Study**

* During the sixth WP 4A virtual/hybrid meeting (11-20 May 2022), Doc 4A/663 proposed exploring regulatory provisions for TT&C frequencies for non-GSO IOS satellite systems.
* The meeting understood and agreed with the TT&C needs being explained in the document and, notwithstanding some concerns expressed with the type of solution that may be developed under AI 7, it was agreed to identify this as an additional Topic under AI 7.
* The draft CPM text has not been developed yet. Document [4A/663](https://www.itu.int/md/R19-WP4A-C-0663/en) would be the source material to further develop this Topic.

2. Documents

* Input Documents: APG23-4/INP[10(J)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-10_J-4_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [17(AUS)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-17_AUS_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [43(CHN)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-43_China_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx), [VTN(78)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INP-78_VTN_WP4_Preliminary_View_on_WRC-23_Agenda_Item_7.docx)
* Information Documents APG23-4/[INF02(ATU)](https://www.apt.int/sites/default/files/2022/07/APG23-4-INF-02_ATU_preparation.docx), [21(ASMG)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-21_ASMG_Preparation_for_WRC-23.pdf), [28 (CITEL)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-28_CITEL_Preparation_for_WRC-23.pdf), [44(RCC)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-44_Status_of_RCC_preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf), [48(CEPT)](https://www.apt.int/sites/default/files/2022/08/APG23-4-INF-48_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)

3. Summary of discussions

**3.1 Summary of APT Members’ views**

**3.1.1 Japan - Document APG23-4/INP-10**

* Japan generally supports the on-going ITU-R studies carried out by WP4A regarding **Topic L**.

**3.1.2 Australia - Document APG23-4/INP-17**

* Australia is monitoring developments on this Topic.

**3.1.3 China (People’s Republic of) – Document APG23-4/INP-43**

* China supports ITU-R study activities to develop regulatory provisions for TT&C frequencies for non-GSO in-orbit serving (IOS) satellite systems.

**3.1.4 Vietnam (Socialist Republic of) – Document APG23-4/INP-78**

* Viet Nam supports the on-going ITU-R studies carried out by WP4A.

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

* None.

4. APT Preliminary View(s)

* APT Members support ITU-R study activities to develop regulatory provisions for TT&C frequencies for non-GSO in-orbit services (IOS) satellite systems.

5. Other View(s) from APT Members

* None.

6. Issues for Consideration at Next APG Meeting

* APT Members are invited to closely follow the progress of the ITU-R studies and are encouraged to submit their contributions for further considerations at the next APG meeting.

7. Views from Other Organisations

**7.1 Regional Groups**

7.1.1 ATU (as of August 2022) – Document APG23-4/INF-02

* None.

7.1.2 ASMG (as of August 2022) – Document APG23-4/INF-21

* Follow-up studies for Regulatory provisions for TT&C frequencies for non-GSO In orbit servicing (IOS) satellite systems and conduct sharing studies to ensure the protection of existing services in the frequency bands that will be used for this service

7.1.3 CEPT (as of August 2022) - Document APG23-4/INF-48

* CEPT supports clarification of the regulatory framework for frequency assignments used by in-orbit servicing (IOS) spacecraft for TT&C links.
* CEPT does not currently see a need for specific spectrum allocations for IOS missions.

7.1.4 CITEL (as of August 2022) – Document APG23-4/INF-28

* None.

7.1.5 RCC (as of August 2022) – Document APG23-4/INF-44

* None.

**7.2 International Organisations**

7.2.1 ICAO (as of August 2022)

* None.

7.2.2 IMO (as August 2022)

* None.

7.2.3 WMO (as of August 2022)

* None.

7.2.4 IARU R3 (as of August 2022)

* None.

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1. See WRC-19 Document [CMR19/571 (10th Plenary Minutes)](https://www.itu.int/md/R16-WRC19-C-0571/en), Section 10.5, paragraph 2. [↑](#footnote-ref-1)
2. ESPI Report 76 - In-Orbit Services (Full Report: https://espi.or.at/publications/espi[-public-reports/send/2-public-espi-reports/557-inorbit-services-full-report](https://espi.or.at/publications/espi-public-reports/send/2-public-espi-reports/557-in-orbit-services-full-report)) [↑](#footnote-ref-2)