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| **The 5th Meeting of the APT Conference Preparatory**  **Group for WRC-23 (APG23-5)** | **APG23-5/OUT-31** |
| 20 – 25 February 2023, Busan, Republic of Korea | 25 February 2023 |

Working Party 4

**PRELIMINARY VIEWs on WRC-23 agenda item 1.19**

**Agenda Item 1.19:**

*to consider a new primary allocation to the fixed-satellite service in the space-to-Earth direction in the frequency band 17.3-17.7 GHz in Region 2, while protecting existing primary services in the band, in accordance with Resolution* ***174 (WRC 19).***

**1. Background**

WRC-23 agenda item 1.19, in accordance with Resolution **174 (WRC-19)**, invites ITU-R Sector to conduct, and complete in time for WRC-23, sharing and compatibility studies between the FSS (space-to-Earth) and the BSS (space-to-Earth) and between the FSS (space-to-Earth) and the FSS (Earth-to-space), in order to consider a possible new primary allocation to the FSS (space-to-Earth) in the frequency band 17.3-17.7 GHz for Region 2, while ensuring the protection of existing primary allocations in the same and adjacent frequency bands, as appropriate, and without imposing any additional constraints on existing allocations to the BSS (space-to-Earth) and the FSS (Earth-to-space).

Progress of ITU-R on-going studies:

The 7th Working Party (WP) 4A meetings in September 2022 updated two documents related to WRC-23 agenda item 1.19:

* 1. Draft CPM Text for WRC-23 Agenda Item 1.19.

This document reflected the updates on:

1. The summary and analysis of the sharing and compatibility studies.
2. The methods to satisfy agenda item 1.19. The two proposed methods are:
   * 1. **Method A**

Under this method, no change is proposed to the RR and the suppression of Resolution **174** (**WRC-19**).

* + 1. **Method B**

Modify footnotes in RR Article 5 that refers to the allocation of the frequency band 17.3-17.7 GHz in Region 2 to the FSS in the space-to-Earth direction.

To address the new FSS allocation in the space-to-Earth direction, a modification to the Frequency Allocation Table in Region 2, in the frequency band 17.3-17.7 GHz, is proposed.

To address the compatibility between earth stations of the FSS (space-to-Earth) in Region 2 and the BSS feeder-link earth stations operating under RR Appendix 30A, this method proposes to modify RR No. 5.516A by extending its application to Region 2. These modified footnotes including Region 2 also indicate that earth stations of the FSS (space-to-Earth) in Region 2 shall not claim protection from the BSS service feeder-link earth stations operating under RR Appendix 30A, nor put any limitations or restrictions on the locations of the BSS feeder-link earth stations anywhere within the service area of the feeder link.

To address the coordination between the FSS (space-to-Earth) in Region 2 and the receiving BSS feeder-link (Earth-to-space) operating under RR Appendix 30A, this method proposes modifications to Article 7 of RR Appendix 30A, to RR Article 22 and extend the coordination procedure (RR No. 9.7) that currently applies to similar services in Region 2 in the contiguous adjacent upper frequency band 17.7-17.8 GHz, by modifying RR Appendix 5.

In addition to the above-mentioned procedure it is proposed in Alternative 1 to modify RR No. 5.516A by adding Region 2 in this footnote. In Alternative 2, in order to ensure the protection of space stations receivers operating under RR Appendix 30A, it is proposed to also add to RR No. 5.516A a text indicating that in Region 2, the use of fixed-satellite service in the frequency band 17.3-17.7 GHz shall not cause unacceptable interference to the space station receivers of the BSS feeder link in Regions 1 and 3 operating and those to be operated in the future under RR Appendix 30A; if such interference occurs the notifying administration of the FSS shall immediately eliminate this unacceptable interference.

To address the coordination between the FSS (space-to-Earth) and the BSS (space-to-Earth), no modifications to the RR are required, since the coordination procedures are already contained in the RR Appendix 5, Table 5-1.

Regarding method B, for the protection of a receiving space station in the BSS feeder link of Appendix 30A from NGSO system operating in the 17.3-17.7 GHz in Region 2. There are 2 alternatives for new footnote RR No. 22.5F.Y:

1. Alternatives 1: A non-geostationary-satellite system operating in Region 2 shall meet the limits of this table for the 17.3-17.7 GHz band with respect to a receiving space station in the broadcasting-satellite feeder link of Appendix **30A**.
2. Alternative 2: A non-geostationary-satellite system operating in Region 2 shall meet the limits of this table for the 17.3-17.7 GHz band with respect to a receiving space station in the broadcasting-satellite feeder link of Appendix **30A**, in all three regions.
   1. Working Document on WRC-23 Agenda Item 1.19.

This document consolidated contribution 4A/691 Annex 24 “Working document on WRC-23 agenda item 1.19.” and contribution 4A/775. The resulting document wasn’t discussed due to time constraints but the same patterns for the titles and tables of the approved “Draft CPM text on WRC‑23 AI 1.19” was brought to this document. The plan is to revise this amendment, and other ones received, in the next meeting of WP 4A.

The next scheduled Working Party 4A meetings on 28 Jun – 06 Jul 2023 (WP 4A 8th). The work plan is to finalize any studies and ITU-R Reports/Recommendations for approval/adoption by SG 4, as appropriate.

**2. Documents**

* Input Documents: [APG23-5/INP-17](https://www.apt.int/sites/default/files/2023/02/APG23-5-INP-17_Japan-WP4-Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (J), [INP-24](https://www.apt.int/sites/default/files/2023/02/APG23-5-INP-24_Japan-WP4-Proposed_modification_to_the_Chapter_3_of_draft_CPM_Report.docx)\* (J), [INP-35](https://www.apt.int/sites/default/files/2023/02/APG23-5-INP-35_Bangladesh_WP4-Preliminary_Views_on_WRC_23_Agenda_Items_1.15_1.16_1.17_1.18_and_1.19.docx) (BGD), [INP-39](https://www.apt.int/sites/default/files/2023/02/APG23-5-INP-39_Iran-WP4-Preliminary_Views_on_WRC_23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (IRN),[INP-55](https://www.apt.int/sites/default/files/2023/02/APG23-5-INP-55_Viet_Nam-WP4-Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.18_1.19_and_7.docx) (VTN), [INP-59](https://www.apt.int/sites/default/files/2023/02/APG23-5-INP-59_Australia-WP4-Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (AUS), [INP-91](https://www.apt.int/sites/default/files/2023/02/APG23-5-INP-91_China-WP4-Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (CHN), [INP-98](https://www.apt.int/sites/default/files/2023/02/APG23-5-INP-98_Malaysia-WP4-Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.19_and_7.docx) (MLA).
* Information Documents: [APG23-5/INF-03](https://www.apt.int/sites/default/files/2023/01/APG23-5-INF-03_Brief_on_AI1.19.docx) (DG Chair), [INF-39](https://www.apt.int/sites/default/files/2023/02/APG23-5-INF-39_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf) (CEPT), [INF-43](https://www.apt.int/sites/default/files/2023/02/APG23-5-INF-43_CITEL_preparation_for_WRC-23.pdf) (CITEL) [INF-45](https://www.apt.int/sites/default/files/2023/02/APG23-5-INF-45_Status_of_RCC_preparation_to_the_WRC-23.pdf) (RCC).

*Note:*

*\*Input documents related to modification of Draft CPM report.*

**3. Summary of discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 Japan** - **Document APG23-5/INP-17**

The frequency band 17.3–17.7 GHz is assigned to feeder links for the broadcasting satellite service in Japan, and the incumbent services in this frequency band and its adjacent bands including such feeder links are necessary to be protected. Unless the feeder links for the broadcasting satellite service are protected, Japan does not support new primary allocation of the fixed-satellite service.

**3.1.2 Bangladesh (People’s Republic of)** - **Document APG23-5/INP-35**

In order to satisfy this agenda item, Bangladesh administration prefers method B of the draft CPM report to WRC-2023, if the studies show that the new allocation is feasible and the protection of AP30A Feeder Link in Region 3 is addressed.

**3.1.3 Iran (Islamic Republic of)** - **Document APG23-5/INP-39**

This Administration supports Alternative 2 for modification to RR No. 5.516A in Method B (4/1.19/5.2.2) in order to ensure the protection of the space station receivers of the broadcasting-satellite service feeder link in Regions 1 and 3 of Appendix 30A. This administration is also of the view that the protection of space station receivers of the broadcasting-satellite service operating under Appendix 30A is totally ignored in the Alternative one to modify RR No. 5.516A.

This administration is also of the view that the following regulatory text needs to be added to the current Alternative 2 for modification to RR No. 5.516A in Method B:

“In order to implement the commitment with regards to fixed-satellite service allocation in Region 2, the notifying administration of the fixed-satellite service at the time of notification under Article 11 of Radio Regulation, submitting Appendix 4 information to ITU shall also provide a firm commitment that in the case of unacceptable interference undertake to immediately cease emission or reduce the interference to an acceptable level and that the inter-satellite system is capable to make this commitment immediately”.

This administration is of the view that a non-geostationary-satellite system operating in Region 2 under the new allocation, shall meet the epfd limits of Article 22, TABLE 22-3 for the 17.3-17.7 GHz band at any position in the orbit with respect to all receiving space station in the broadcasting-satellite feeder link of Appendix 30A. Based on that the Islamic Republic of Iran supports Alternative 2 for the ADD RR No. 22.5F.Y in Method B in order to ensure the protection of the space station receivers of the broadcasting-satellite service feeder link in Regions 1 and 3 of Appendix 30A.

**3.1.4 Viet Nam (Socialist Republic of)** - **Document APG23-5/INP-55**

For synchronization of frequency bands across Regions, Vietnam supports Method B.

**3.1.5 Australia** - **Document APG23-5/INP-59**

Australia supports arrangements that are consistent with the rational and efficient use of Australia’s sovereign assets in the radiofrequency spectrum. Noting that this is a Region 2 issue, Australia does not currently have a position on the proposed new primary allocation, however, protection for existing Appendix 30A satellite networks should be ensured.

**3.1.6 China (People’s Republic of)** - **Document APG23-5/INP-91**

With respect to the condition of sharing and compatibility studies, this administration is of the views that:

* The new allocation to FSS in Region 2 in the band 17.3-17.7 GHz (space-to-Earth) shall not adversely affect existing allocations and services for Region 3 and shall not impose any constraints to the incumbent services operating in the concerned frequency bands and adjacent bands in Region 3.
* As there is no frequency allocation of FSS in Region 3 in the band 17.3-17.7 GHz (space-to-Earth), any new allocation in Region 2 in the band 17.3-17.7 GHz used by a non-geostationary satellite system in the fixed-satellite service, may cause potential interference to existing allocations and services for Region 3 considering the operating characteristics of satellite system. The new allocation to FSS in Region 2 in the band 17.3-17.7 GHz (space-to-Earth) shall limited to geostationary satellites.

**3.1.7 Malaysia** - **Document APG23-5/INP-98**

Malaysia supports possible allocation to the FSS in Region 2 in the frequency band 17.3-17.7 GHz (space-to-Earth) while ensuring protection to existing allocations and services in the same and adjacent frequency bands in Region 3.

Malaysia is of the view that the additional allocation to Region 2 shall protect the receiving space stations operating under RR Appendix **30A**. Therefore, Malaysia supports **Method B Alternative 2**.

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

APT Members express their concerns on the protection to the existing primary allocation and services in the frequency band considered under the agenda item 1.19 of WRC-23, including Appendix **30A** satellite networks.

Some APT Members are of the view that the issue of revision of RR Article **22** as a whole needs to be further studied in order to clarify where the protected areas are, in the case where an epfd limitation shall be met by a non-geostationary satellite system that is not allowed to operate in all three Regions. In this case, it should be clarified whether the victim service is protected in all three Regions, as long as the non-GSO satellite system has emission and regardless of non-GSO satellite location in the orbit.

Considering the opinion made under Section 5, the APG 23-5 meeting encourages the APT Members make the input contribution to the CPM23-2 meeting to provide any other Method to satisfy the agenda item 1.19.

**4. APT Preliminary Views**

APT Members are considering Method A and B to address this agenda item and noting several concerns as follows:

* the importance to ensure protection to existing allocations and services and shall not impose any constraints to the incumbent service operating the same and adjacent frequency bands in Region 3.
* consider Alternative 2 for modification to RR No. **5.516A** in Method B (4/1.19/5.2.2) in order to ensure the protection of the space station receivers of the broadcasting-satellite service feeder link in Regions 1 and 3 of Appendix **30A** and propose the following regulatory text to be added to the current Alternative 2 of Method B for modification to RR No. **5.516A**:

“In order to implement the commitment with regards to fixed-satellite service allocation in Region 2, the notifying administration of the fixed-satellite service at the time of notification under Article **11** of Radio Regulation, submitting Appendix **4** information to ITU shall also provide a firm commitment that in the case of unacceptable interference undertake to immediately cease emission or reduce the interference to an acceptable level”.

* consider Alternative 2 for the ADD RR No. **22.5F.Y** in Method B in order to ensure the protection of the space station receivers of the broadcasting-satellite service feeder link in Regions 1 and 3 of Appendix **30A**.
* a non-geostationary-satellite system operating in Region 2 shall meet the epfd limits of the table for the 17.3-17.7 GHz band at any position in the orbit with respect to all receiving space station in the broadcasting-satellite feeder link of Appendix **30A**, in all three regions.

**5. Other View(s) from APT Members**

Some APT Members are of view that the new allocation to FSS in Region 2 in the band 17.3-17.7 GHz (space-to-Earth) needs to be limited to geostationary satellites in order to avoid potential interference to existing allocations and services for Region 3 whom have not frequency allocation for FSS (space-to-Earth).

**6. Issues for Consideration at Next APG Meeting**

APT Members are invited to actively participate at the CPM23-2 meeting and are encouraged to submit their contributions for further considerations at the next APG meeting.

**7. Views from Other Organisations** (as provided in the information documents to

APG23-5)

**7.1 Regional Groups**

**7.1.1 CEPT** - **Document APG23-5/INF-39**

CEPT supports a new FSS (space-to-Earth) allocation in Region 2 in the frequency band 17.3-17.7 GHz, which facilitates the use of spectrum available to networks and systems in the FSS across Regions.

**7.1.2 CITEL** - **Document APG23-5/INF-43**

Support the following proposals:

* Changes to the Frequency Allocations table of Article 5 of the Radio Regulations, and to the respective footnotes 5.484A, 5.516A and 5.517;
* Addition of two new notes stating that, in Region 2, a Non-GSO system operating in the FSS must always respect the limits of Article 22 of the Radio Regulations;
* Changes to Article 7 of the Appendix 30A to consider this new FSS allocation;
* Consequential changes to the table 5-1 of Appendix 5 to the Radio Regulations and the suppression of the Resolution 174 (WRC-19).

**7.1.3 RCC** - **Document APG23-5/INF-45**

The RCC Administrations are of the view that, considering a new primary allocation of frequency band 17.3-17.7 GHz to the fixed-satellite service in the space-to-Earth direction in Region 2, the existing services in Region 1 within this and adjacent frequency bands shall be protected.

**7.2 International Organisations**

**7.2.1 WMO** - **Document APG23-5/INF-01**

None.

**7.2.2 IARU** - **Document APG23-5/INF-21**

None.

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