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|  | ASIA-PACIFIC TELECOMMUNITY | Document No: |
| **The 6th Meeting of the APT Conference Preparatory**  **Group for WRC-23 (APG23-6)** | **APG23-6/OUT-31** |
| 14 – 19 August 2023, Brisbane, Australia | 19 August 2023 |

Working Party 4

**APT VIEW and Preliminary APT Common Proposal 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).

The 2nd session of Conference Preparatory Meeting for WRC-23 (CPM 23-2) in March 2023 discussed and finalized the draft of CPM text including the methods to satisfy the agenda item 1.19. There were 4 methods, instead of 2 methods as indicated in the previous ITU WP 4A meeting, identified to satisfy this agenda item, as described below:

* 1. Method A proposes no change to the RR and suppression of Resolution 174 (WRC-19);
  2. Method B proposes modifications to the RR in order to allocate the frequency band 17.3-17.7 GHz in Region 2 to the FSS in the space-to-Earth direction. This method contains two alternatives for several items to provide a wide range of options. The selection of Alternative 1 for all the items extends provisions used in Region 1 to Region 2, as well as the addition of other provisions, while the selection of Alternative 2 for all items results in more conservative conditions with the objective to provide further protection of the BSS feeder link AP30A receiving space station and GSO FSS systems;
  3. Method C proposes modifications to the RR in order to allocate the frequency band 17.3-17.7 GHz in Region 2 to the FSS in the space-to-Earth direction, limiting the FSS operation to geostationary satellites; and
  4. Method D proposes modifications to the RR in order to allocate the frequency band 17.3-17.7 GHz in Region 2 to the FSS in the space-to-Earth direction, extending the regulatory provisions used in Region 1 to Region 2, as well as the addition of other provisions.

**2. Documents**

* Input Documents: [APG23-6/INP-07](https://www.apt.int/sites/default/files/2023/06/APG23-6-INP-07_WP4_Report.docx)(Co-Chairs, WP4), [INP-26](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-26_Bangladesh_WP4_PACP_WRC-23_Agenda_Items_0.docx) (BGD), [INP-38](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-38_Japan_WP4_Views_and_Proposals_WRC-23_Agenda_Items.docx)(J), [INP-68 (Rev.1)](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-68R1_Iran_Preliminary_Views_on_WRC-23_Agenda_Items.docx)(IRN), [INP-83](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-83_Australia_WP4_PACP_WRC-23_Agenda_Items.docx)(AUS), [INP-90](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-90_KOR_WP4_PACP_WRC-23_Agenda_Items.docx) (Rev.1)(KOR), [INP-106](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-106_China_WP4_PACP_WRC-23_Agenda_Items.docx)(CHN), [INP-120](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-120_VietNam_WP4_PACP_WRC-23_Agenda_Items.docx) (VTN).
* Iinformation Documents: [APG23-6/INF-15](https://www.apt.int/sites/default/files/2023/07/APG23-6-INF-15_Brief_on_AI1.19.docx) (DG Chair), [INF-28](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-28_GSOA_Positions_on_WRC-23_Agenda_Items_0.docx) (GSOA), [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), [INF-46](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-46_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf) (CEPT), [INF-52](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-52_CITEL_preparation_for_WRC-23.pdf)(CITEL).

**3. Summary of discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 Bangladesh (People’s Republic of)** - **Document APG23-6/INP-26**

This agenda is for the issue of Region-2. Synchronization of frequencies across the regions is important for its efficient utilization. However, 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.

**3.1.2 Japan** - **Document APG23-6/INP-38**

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.

**3.1.3 Iran (Islamic Republic of)** - **Document APG23-5/INP-68 (Rev.1)**

* This Administration supports Methods B alternative 2. This method contains two alternatives for several items to provide a wide range of options. The selection of Alternative 1 for all the items makes it identical to Method D, while the selection of Alternative 2 for all items results in achieving the objective to provide necessary protection of the BSS feeder link AP30A receiving space station and GSO FSS systems;
* This Administration also considering to use appropriate elements / parts of Method C with a view to further improve / complement Method B, Alternative 2 in order that assignments to incumbent service be fully protected. For example, the addition of footnote [5.XXX](http://5.xxx/) in Method C will limit the new allocation to GSO, so it can fully address the concerns regarding the interference caused by non-GSO systems compared to modifications to Article 22 proposed in Method B.
* To address the protection of assignments pertaining to existing allocations and services, assignments relating to agenda item 1.19 shall not cause unacceptable interference to nor claim protection from and not adversely affected the operation of incumbent service operating the same and adjacent frequency bands in Region 3.
* To this effect the following should be included in output of the WRC-23 for this agendas item:

1. the notifying administration of the assignments relating to this agenda item when submitting Appendix 4 information / data elements for the implantation of the new allocation shall also send a firm, objective, measurable, enforceable with actionable evidence commitment that in case of reported unacceptable interference undertake to immediately cease the interference or reduce it to an acceptable level.
2. in case of inaction in regard with obligations referred to in a) above the Bureau shall send a reminder and requests that the notifying administration to comply with the requirements referred to in commitment
3. Should the interference continued to persist, 30 days after the dispatch date of the above- mentioned reminder, the Bureau shall submit the case to the subsequent meeting of the RRB for review and eventual suppression from the date base of the Bureau and inform the notifying administration accordingly.

* This Administration supports Alternative 2 for modification to RR No. **5.516A** 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** and propose the regulatory text mentioned in the previous bullet to be added to the current Alternative 2 of Method B for modification to RR No. **5.516A**.
* This Administration also 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**:

*“*22.5F.Y *a non-geostationary-satellite system operating in region 2 at any position in the orbit, shall meet the limits of this table for the 17.3-17.7 GHz band with respect to all receiving space station in the broadcasting-satellite feeder link of Appendix* ***30A****, in all three regions.”*

**3.1.4 Australia** - **Document APG23-5/INP-83**

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.

Australia does not propose a Preliminary APT Common Proposal for this issue.

**3.1.5 Korea (Republic of)** - **Document APG23-5/INP-90 (Rev.1)**

The Republic of Korea is of the view that the new primary allocation of the frequency band 17.3-17.7 GHz in Region 2 to the FSS in the space-to-Earth direction should ensure protecting existing services operated in Region 3. Therefore, Korea (Rep. of) supports the Method B (Alternative 2) presented in the CPM Report. In addition, Method C limiting the FSS operation to GSO could also be supported.

**3.1.6 China (People’s Republic of)** - **Document APG23-5/INP-106**

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 modifications of Article 22 are inconsistent with the Radio Regulation. And the value of efpd which were added in Methods is not proven and validated. Therefore, the new allocation to FSS in Region 2 in the band 17.3-17.7 GHz (space-to-Earth) is better to limit to geostationary satellites.

For the above consideration, China would like to propose that the Method C to be the PACP under the WRC-23 agenda item 1.19 in order to protect services of our region’s.

In addition, we also would like to consider Method B (Alternative 2 for all cases) for the WRC-23 agenda item 1.19.

**3.1.7 Vietnam (Socialist Republic of)** - **Document APG23-5/INP-120**

Two orbital scenarios for FSS operations were considered in the studies conducted under agenda item 1.19. In some instances, no studies were performed even when an allocation may exist as no characteristics or protection criteria were liaised by the contributing working party. Therefore, Viet Nam supports method A.

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

The following concerns were expressed and discussed at the meeting:

* Protection to the existing services in Region 3, including BSS feeder link AP30A receiving space station and GSO FSS systems, operating in the same and adjacent frequency band studied under this agenda item.
* Potential interference to existing services in Region 3 caused by non-GSO systems operating in the band 17.3-17.7 GHz (space-to-Earth).
* Some APT Members expressed concern on the appropriateness of a power-flux density limit proposed. While it is acknowledged that there is potential interference path from Region 2 FSS downlink into an Appendix 30A BSS feeder link receiver, some APT Members are considering which is the most appropriate method to mitigate this risk. Additionally, a pfd level referenced at earth surface to protect a GSO receiver could be difficult to understand.
* Some APT Members expressed a view of whether the allocation of 17.3-17.7 GHz in Region 2 to the FSS in the space-to-Earth direction should be limited to the FSS GSO.
* Footnote 5.516A contains a number of elements (for example a no interference obligation, actions to take if there is interference, and commitments). Some thought that all elements are not required. While some other APT Members thought more elements are required.
* Some APT Members indicated that the use of No. **11.41** could potentially be acceptable for some cases (e.g.  List entries).

**4. APT View(s)**

APT Members have considered agenda item 1.19 and agreed on a Preliminary APT Common Proposal on the matter. In addition, APT Members have also agreed on the following views for Agenda item 1.19.

* APT Members are of the view that protection to the existing services in Region 3 in the 17.3-17.7 GHz and adjacent bands, including BSS feeder link AP30A receiving space station, shall be ensured.
* APT Members are of the view to support the proposed New Method, modification of Method B (Alternative 2 ), as described in the PACP document.
* It is acknowledged that there is potential interference path from Region 2 FSS downlink into an Appendix 30A BSS feeder link receiver.

**5. Preliminary APT Common Proposal**



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

The following issue may need to be considered at APG Coordination Meeting at WRC-23:

* some aspects of Method B Alternative 2 including the appropriateness of a power-flux density limit referenced at earth surface proposed in Annex 4 of Appendix 30A and the additions relating to provision 11.41 in AP30A Article 7.

**7. Views from Other Organisations**

**7.1 Regional Groups**

**7.1.1 CEPT** - **Document APG23-6/INF-46**

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.

CEPT also supports harmonisation in Regions 1 and 2 of the provisions that apply between FSS networks in this frequency band.

**7.1.2 CITEL** - **Document APG23-6/INF-52**

Supporting the proposals below:

* 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 APG23-6/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 without imposing any additional restrictions on these services.

Method В from the CPM Report is preferable.

**7.2 International Organisations**

**7.2.1 GSOA- Document APG23-6/INF-28**

* Support the development of a regulatory framework to allocate the 17.3 – 17.7 GHz band to the FSS (space-to-Earth) in Region 2 while ensuring the protection of BSS feeder links (Earth-to-space) subject to Appendix 30A and BSS (space-to-Earth).
* Expanding the FSS allocation by 400 MHz would add a contiguous spectrum in Region 2 for gateways and user terminals, responding to the ever increasing demand for broadband satellite service throughout the Americas.
* The new allocation would allow satellite operators to satisfy BSS or FSS service demand in the same frequency band indistinctly and, in many cases, without the necessity to use exclusive payloads depending on the service.