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|  | ASIA-PACIFIC TELECOMMUNITY | **Document No:** |
| **The 2nd Meeting of the APT Conference Preparatory**  **Group for WRC-23 (APG23-2)** | **APG23-2/OUT-30** |
| 19 – 23 April 2021, Virtual/Online Meeting | 23 April 2021 |

Working Party 4

**PRELIMINARY VIEWs on WRC-23 agenda item 1.17**

**Agenda Item 1.17:**

*to determine and carry out, on the basis of the ITU-R studies in accordance with Resolution 773 (WRC 19), the appropriate regulatory actions for the provision of inter-satellite links in specific frequency bands, or portions thereof, by adding an inter-satellite service allocation where appropriate*

**1. Background**

Under this agenda item, Resolution **773 (WRC-19)** invites the ITU-R:

* to develop the technical and operational characteristics of different types of space stations that plan satellite-to-satellite transmissions in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz;
* to study the technical and operational characteristics, including spectrum requirements, off-axis equivalent isotropically radiated power (e.i.r.p.) values and out-of-band emission limits, for transmissions between space stations in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz;
* to study sharing and compatibility between satellite-to-satellite links intending to operate between space stations in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz and current and planned stations in the FSS and other existing services allocated in the same frequency bands and adjacent frequency bands, including passive services, with a view to ensuring protection of the primary services referred to above;
* to develop, for different types of space stations, the technical conditions and regulatory provisions for satellite-to-satellite operations in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz, or portions thereof, including new ISS allocations, as appropriate, taking into account the results of the studies above,

In accordance with the results of CPM23-1, the above studies are being conducted by ITU-R Working Party 4A (WP 4A) which the detailed activities are in the Chairman’s Report of

ITU-R Working Party 4A [(Document 4A/246)](https://www.itu.int/md/R19-WP4A-C-0246/en).

**2. Documents**

* Input Documents APG23-2/[INP-13](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-13.docx) (J), [INP-27](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-27_AUS_contribution_for_WP4_Preliminary_Views_on_WRC-23_Agenda_Items_1.15_1.16_1.17_1.18_1.19_and_7.docx) (AUS), [INP-33 Rev.1](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-33Rev.1_WP4_kor_REV1.docx) (KOR), [INP-37](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-37_AI_1.15_1.16_1.17.docx) (SNG), [INP-42](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-42_Indonesia_WP4.docx) (INS) and [INP-47 Rev.1](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-47Rev.1_PRELIMINARY_VIEWS_ON_WRC-23_AGENDA_ITEMS_1.15_1.16_1.17_1.18_1.19_AND_7.docx) (CHN)
* Information Documents APG23-2/INF-[31 (Rev1)](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-31Rev.1_Briefing_on_AI1.17.docx) (DG Chair), INF-[25](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-25_ASMG.docx) (ASMG), INF-[34](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-34_CITEL_Preparation_for_WRC23_april_2021_revfinal.docx) (CITEL), INF-[35](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-35_Status_of_CEPT_Preparation_for_WRC-23_and_RA-23.pdf) (CEPT), INF-[36](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-36_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 APG23-2/INP-13**

In order to protect the Reg. 3 BSS in the band 11.7 - 12.2 GHz and not to impose any additional constraints on future development of the Reg. 3 BSS in the band 11.7 - 12.2 GHz, APT members support NOC for the Reg. 3 BSS in the band 11.7 - 12.2 GHz, or setting a hard limit for the power flux-density (pfd) produced by the transmission from geostationary-satellite networks in the possible FSS or ISS over any portion of the service area of the geostationary-satellite networks in the BSS in Region 3 in the band 11.7 - 12.2 GHz, −147 dB(W/(m2 ⋅ 27 MHz)).

**3.1.2 Australia** - **Document APG23-2/INP-27**

Australia supports ITU-R studies to develop technical conditions and regulatory provisions that establish a harmonised framework which facilitates the use of satellite-to-satellite operations in the 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz frequency bands in accordance with Resolution 773 (WRC-19). Such use must ensure protection of primary services allocated in the bands and in the adjacent bands.

**3.1.3 Korea (Republic of)** - **Document APG23-2/INP-33 Rev.1**

The Republic of Korea supports the development of the technical conditions and regulatory provisions to enable the operation of satellite-to-satellite links in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz in the FSS, or parts thereof, while ensuring protection of other FSS networks or systems and other existing services allocated in the same frequency bands and adjacent frequency bands.

**3.1.4 Singapore (Republic of) -** **Document APG23-2/INP-37**

Singapore supports studies under WRC-23 Agenda item 1.17 with a view to develop appropriate technical and regulatory conditions, to allow satellite-to-satellite transmissions in the 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz bands or portions thereof, in accordance with Resolution 773 (WRC-19).

**3.1.5 Indonesia (Republic of) -** **Document APG23-2/INP-42**

Indonesia is of the view that the protection of current and planned stations of primary services allocated in the frequency band 11.7-12.7 GHz, 18.1-18.6 GHz, and 18.8-20.2 GHz and 27.5-30 GHz, or parts thereof, and current and planned stations of the FSS and other existing services allocated in same frequency bands and adjacent frequency bands, including passive services, should be ensured during sharing and compatibility studies under Agenda Item 1.17.

**3.1.6 China (People’s Republic of)** - **Document APG23-2/INP-47 Rev.1**

This administration supports studying sharing and compatibility between satellite-to-satellite links intending to operate in the above relevant frequency bands and existing primary services allocated in same frequency bands as well as EESS (passive) allocated in the adjacent frequency band.

This administration supports studying the concept of operation, characteristics, and spectrum requirement of the systems that intend to operate satellite-to-satellite links in the above relevant frequency bands.

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

None.

**4. APT Preliminary View(s)**

APT Members support ITU-R studies on the sharing and compatibility as well as to develop technical conditions and regulatory provisions for the use of satellite-to-satellite operations in the 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz frequency bands in accordance with Resolution **773 (WRC-19)**, as such the use shall ensure protection of primary services allocated in the bands and in the adjacent bands.

**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 meeting.

**7. Views from Other Organisations**

**7.1 Regional Groups**

**7.1.1 ASMG** - **Document APG23-2/INF-25**

* Follow up studies
* The inter satellite link should not:

1. impose any restrictions on the GSO and NGSO satellites

2. impose any restrictions on existing services

* The studies should be done on real registered NGSO constellation
* The transmission between two satellites will have the same protection levels for GSO, NGSO satellites and existing services as been stipulated in the Radio Regulations

**7.1.2 CEPT** - **Document APG23-2/INF-35**

* CEPT supports the development of a regulatory framework to enable the operation of satellite‐to‐satellite links within the fixed‐satellite service (FSS) allocation in the 11.7‐12.7 GHz, 18.1‐18.6 GHz, 18.8‐20.2 GHz and 27.5‐30 GHz bands, or parts thereof, while ensuring protection of existing services in the same frequency bands and adjacent bands.
* CEPT supports that the introduction of satellite‐to‐satellite transmissions must ensure the same level of protection for GSOs and non‐GSOs as currently provided in the RR and must not impose new constraints on GSOs and NGSOs to protect satellite‐to‐satellite links from interference.
* CEPT supports that the introduction of satellite‐to‐satellite transmissions must ensure the same level of protection for terrestrial services as currently provided in the RR and must not impose new constraints on terrestrial services to protect satellite‐to‐satellite links from interference.

**7.1.3 CITEL** - **Document APG23-2/INF-34**

* Some administrations support studies under the terms of Resolution 773 (WRC-19) to consider technical and regulatory provisions to allow satellite-to-satellite links in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz.

These Administrations support confining studies to links that operate in the same direction of transmission as provided for in the current allocations and confined to satellite located on different orbits.

**7.1.4 RCC** - **Document APG23-2/INF-36**

* The use of satellite-to-satellite links in the bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz, and 27.5-30 GHz may impose severe constraints on the use of the existing and future systems/ networks of FSS, interalia, over the national territories.
* Support the studies of technical and operational characteristics, including spectrum requirements, off-axis e.i.r.p. values and out-of-band emission limits, for transmissions between space stations in the bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz.
* Support studying sharing and compatibility between satellite-to-satellite links, intending to operate between space stations in the bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz, and current and planned stations of the FSS and other existing services allocated in the same frequency bands and in adjacent bands. The results of these ITU-R studies should be agreed by Member States by consensus.
* Technical conditions and regulatory provisions should be developed for different types of space stations for satellite-to-satellite operations in the bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz, or portions thereof, including new ISS allocations.

**7.2 International Organisations**

None

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