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| APTlogogreen3 | ASIA-PACIFIC TELECOMMUNITY | **Document:** |
| **The 2nd Meeting of the APT Conference Preparatory Group for WRC-19 (APG19-2)** | **APG19-2/OUT-08** |
| 17 – 21 July 2017, Bali, Republic of Indonesia | **21 July 2017** |

Working Party 3

**PRELIMINARY VIEWs on WRC-19 agenda item 9.1 (Issue 9.1.3)**

**Agenda item 9.1 - Issue 9.1.3:**

*to study technical and operational issues and regulatory provisions for new* *non-geostationary-satellite orbit systems in the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz and 6 725-7 025 MHz frequency bands allocated to the fixed-satellite service, in accordance with Resolution* ***157 (WRC-15)****.*

**1. Background**

WRC-19 agenda item 9.1, issue 9.1.3, in accordance with Resolution **157 (WRC-15)**, invites ITU-R to study technical and operational issues and regulatory provisions for new circular-orbit non-geostationary-satellite orbit (non-GSO) systems in the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz, and 6 725-7 025 MHz frequency bands allocated to the fixed-satellite service (FSS), while ensuring protection of existing services.

Working Party 4A (WP 4A) has been identified as the responsible ITU-R group for the studies on WRC-15 Agenda item 9.1, issue 9.1.3. At its latest WP4A meeting in May 2017, following documents were developed:

* Working document towards a preliminary draft new Report ITU-R S.[NGSO\_6/4-GHz] (Annex 17 to document 4A/364) which address technical and regulatory studies for 6/4 GHz non-GSO FSS sharing;
* Working document towards a preliminary draft new Report ITU-R S.[NGSO FSS 6/4 GHz SHARING] (Annex 16 to document 4A/364) which address sharing between non-GSO systems in the FSS and existing and planned systems in the terrestrial and space services allocated on a primary basis in the frequency bands 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz and 6 725-7 025 MHz;
* Working document towards preliminary draft CPM text for WRC-19 agenda item 9.1, issue 9.1.3 (Annex 43 to document 4A/364)*.*

**2. Documents**

* Input Documents: relevant part of APG19-2/INP-10 (KOR), INP-30 (AUS), INP-41 (INS), INP-51 (CHN), INP-57 (J)
* Information Documents: relevant part of APG19-2/INF-1 (Chair, APG-19), INF-2 (ICAO), INF-4 (CITEL), INF-5 (RCC), INF-14 (CEPT)

**3. Summary of Discussions**

**3.1 Summary of Members’ view**

**3.1.1 Korea (Rep. of)**

The Republic of Korea has a preliminary view that the ITU-R studies should not have an impact on existing and future terrestrial services and should not limit or additionally constrain the future development of the geostationary-satellite system in the fixed-satellite service especially, feeder link earth stations for radionavigation satellite service in the frequency bands 5 925-6 425 MHz and 6 725-7 025 MHz.

**3.1.2 Australia**

Australia supports ITU-R studies of technical and operational issues and regulatory provisions for possible new non-geostationary-satellite orbit systems in the frequency bands 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz and 6 725-7 025 MHz allocated to the fixed-satellite service in accordance with Resolution **157 (WRC-15)**.

Australia notes that new non-geostationary-satellite systems in these bands should not cause harmful interference to, or impose unacceptable constraints on, other services operating in these bands.

Otherwise Australia is yet to form a view on this Issue.

**3.1.3 Indonesia**

Indonesia supports study for new non-geostationary-satellite orbit system in the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz, and 6 725-7 025 MHz frequency bands allocated to fixed satellite service while ensuring protection to the existing space services (GSO FSS, MSS) and terrestrial services (fixed services, mobile services, aeronautical mobile telemetry) and the allotments in the Plan and the assignments in the List of AP30B shall be fully protected.

**3.1.4 China (People’s Republic of)**

China supports the study of technical and operational issues and regulatory provisions for new non-GSO systems in the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz and 6 725-7 025 MHz frequency bands under the terms of Resolution **157 (WRC-15)**.

China is the view that when revising or developing the Article **22** epfd↓ limits and epfd↑ limits for the non-GSO systems in the frequency bands 3 700-4 200 MHz (space-to-Earth), 5 925-6 425 MHz (Earth-to-space), 4 500-4 800 MHz (space-to-Earth) and 6 725-7 025 MHz (Earth-to-space), it is necessary to ensure the protection of GSO FSS networks from unacceptable interference pursuant to No **22.2** as applicable, including the allotments of the Plan and assignments in the Appendix **30B** List.

China do not oppose possible revision of Article **21**, Table 21-4 for non-GSO FSS satellites, with a view to enabling new non-GSO systems to operate in these FSS frequency bands, while ensuring the protection of the mobile service and fixed service, and maintaining the existing Article **21** pfd limits in the frequency band 3700−4200 MHz (space-to-Earth) for GSO networks.

When developing technical and operational conditions and regulatory provisions for new non-GSO systems, there is a need to ensure protection of existing terrestrial services in the frequency bands 4 500-4 800 MHz (space-to-Earth), 5 925-6 425 MHz (Earth-to-space) and 6 725-7 025 MHz (Earth-to-space).

**3.1.5 Japan**

Japan is of the view that appropriate protection of existing services is necessary.

**3.2 Key points raised during the meeting**

* None.

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

APT Members support the ITU-R studies of technical and operational issues and regulatory provisions for new non-GSO systems in the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz and 6 725-7 025 MHz frequency bands under the terms of Resolution **157 (WRC-15)**.

APT Members are of the view that any revision or development of technical and operational conditions and regulatory provisions for new non-GSO systems should ensure the protection of the existing services in these bands and should not limit or additionally constrain the future development of these services.

**5. Other Views**

* None.

**6. Views from Other Organisations**

**6.1 ASMG**

* Protection of assignments and allotments of Appendix 30B and not to impose any restrictions for further deployment or current recordings.
* Not supporting the modification of the epfd spectrum density previously assigned to protect fixed satellite service systems in these bands.
* Not to support the designation of different epfd values in radio regulations, to be considered to the extent of ITU recommendations regarding coordination procedures between GSO and NGSO.
* Follow up existing studies related to this issue.
* Invite concerned working groups in ASMG to follow-up this issue in order to ensure the protection of fixed services, especially in adjacent bands.

**6.2 CEPT**

CEPT supports the study of technical and operational issues and regulatory provisions for new non-geostationary-satellite orbit systems in the 3700-4200 MHz, 4500-4800 MHz, 5925-6425 MHz and 6725-7025 MHz frequency bands under the terms of Resolution **157 (WRC-15)**.

CEPT supports the protection of GSO/NGSO FSS, mobile and fixed services under these studies. No additional constrains should be applied to existing GSO and non-GSO FSS networks in the frequency bands 3 700-4 200 MHz (space-to-Earth) and 5 925-6 725 MHz (Earth-to-space). Furthermore, no additional constraint should apply to terrestrial services.

CEPT is of the view that when considering the Article **22** epfd↓ limits and epfd↑ limits applicable to non-GSO systems in the frequency bands 3700-4200 MHz (space-to-Earth), 5925-6425 MHz (Earth-to-space), 4500-4800 MHz (space-to-Earth) and 6725-7025 MHz (Earth-to-space) it is necessary to ensure the protection of GSO FSS networks from unacceptable interference pursuant to **22.2** RR as applicable, including the allotments of the Plan and assignments in the Appendix **30B** List.

CEPT is of the view that studies should take into account that the protection of mobile service is ensured regardless of the allocation status of the mobile service.

**6.3 CITEL**

**CAN:**

Supports the studies under Resolution 157 (WRC-15) for new non-GSO FSS satellite systems. Any modification to Article 22 for the inclusion of epfd limits for non‐GSO FSS systems in the bands 4 500‐4 800 MHz (space-to-Earth) and 6 725-7 025 MHz (Earth‐to‐space) to protect the geostationary FSS allotments in the Plan and the assignments in the Appendix 30B List can only be considered in conjunction with modifications to Article 5, including No. **5.441** to authorize use of these bands by non‐GSO FSS systems. This footnote specifies that the use of the bands by the FSS shall be in accordance with Appendix 30B, which is limited to the geostationary-satellite of the fixed-satellite service. This is not the case in the bands 3 700-4 200 MHz and 5 925-6 425 MHz where non-GSO FSS are currently allowed without any restrictions in Article 5. Similarly, the adoption of regulatory measures to protect terrestrial services in the band 4 500-4 800 MHz (space to Earth) can only be considered in conjunction with modifications to No. **5.441**.

Canada also notes that under the current regulatory framework, the protection of the non-GSO MSS feeder link receiving earth station from non-GSO FSS transmitting earth station in the band 6 700 -6 725 MHz and 7 025- 7 075 MHz is ensured through the application of coordination procedures under No. **9.17A** (see also Table 9a in Appendix 7). An extension of these coordination procedures to the band 6 725‐7 025 MHz can only be achieved through modifications to No. **5.441** referred to above.

**B:**

The Brazilian Administration is of the view that studies are necessary to ensure that the protection of GSO networks would not be reduced beyond that currently afforded by Article **22** epfd limits.

**USA:**

The United States supports the study of a regulatory framework, under the terms of Resolution 157 (WRC-15), to enable circular-orbit non-GSO FSS satellite systems to operate in the 3 700-4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz and 6 725-7 025 MHz frequency bands, while ensuring the protection of existing services and applications, and to take appropriate action based on the results of these studies.

**6.4 RCC**

The RCC Administrations do not oppose possible revision of Article **21**, Table **21-4** for non-GSO FSS satellites, with a view to enabling new non-GSO systems to operate in these FSS frequency bands, while ensuring that existing primary services, i.e. the mobile service and fixed service, are protected, and maintaining the existing Article **21** pfd limits for GSO networks in the frequency band 3700−4200 MHz (space-to-Earth).

The RCC Administrations consider that when reviewing RR Article **22** epfd↓ and epfd↑ limits for new non-GSO systems in the frequency bands 3700−4200 MHz (space-to-Earth), 5925−6425 MHz (Earth-to-space), 4500−4800 MHz (space-to-Earth) and 6725−7025 MHz (Earth-to-space), it is necessary to ensure protection of GSO FSS networks, including allotments in the Plan and assignments in the Appendix **30В** List, without modification of their protection criteria.

The RCC Administrations consider that when determining operation conditions for new non-GSO FSS systems in the frequency bands 3700−4200 MHz (space-to-Earth), 5925−6425 MHz (Earth-to-space), it is necessary to protect existing non-GSO FSS systems in highly elliptical orbits.

In the radio frequency band 3700-4200 MHz (space-to-Earth) CEPT does not object to a possible revision of Table **21-4** of Article **21** for non-GSO FSS satellites, while ensuring that existing primary services, i.e. the mobile service and fixed service, are protected and maintaining the existing Article **21** pfd limits for GSO networks.

When developing technical and operational conditions and regulatory provisions for new systems of non-GSO FSS, there is a need to ensure protection of existing terrestrial services in the frequency bands 4500-4800 MHz (space-to-Earth), 5925-6425 MHz (Earth-to-space) and 6725-7075 MHz (Earth-to-space).

**6.5 ICAO**

To oppose any new or changes to existing regulatory provisions in Article **21** of the ITU Radio Regulations for the frequency bands 3 700 - 4 200 MHz and 5 925 - 6 425 MHz unless it has been demonstrated through agreed ITU-R studies that there will be no impact from the potential introduction of new non-geostationary-satellites on aviation use in those bands.

To oppose introduction of new non-geostationary-satellites in frequency bands near to the frequency band 4 200 - 4 400 MHz unless aviation use of that band is ensured through agreed ITU-R studies.

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

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

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