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| **The 4th Meeting of the APT Conference Preparatory**  **Group for WRC-19 (APG19-4)** | **APG19-4/OUT-03** |
| 7 – 12 January 2019, Busan, Republic of Korea | 12 January 2019 |

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.

Article **21** of the Radio Regulations contains provisions to ensure compatibility of non-GSO FSS operations with the fixed and mobile services. These provisions are in the form of pfd limits for non-GSO FSS systems. Similar to the sharing situations that led to the RR Article **22** epfd limits to protect GSO systems, the existing RR Article **21** pfd limits for 3 700-4 200 MHz frequency band were established based solely on sharing studies between HEO non-GSO systems and the fixed and mobile services. New non-GSO systems that seek to operate in these frequency bands may utilize different types of orbits.

Article **22** of the Radio Regulations contains provisions to ensure compatibility of non-GSOFSS operations with GSO networks. Among these provisions are uplink and downlink equivalent power flux density (epfd↑ and epfd↓) limits to protect GSO networks from unacceptable interference. Regulatory provisions in RR Article **22** for sharing between non-GSO FSS systems and GSO FSS networks operating in the 6/4 GHz frequency bands were based on a particular type of non-GSO system using highly-elliptical orbits (HEO). The epfd↓ limits in the 3 700-4 200 MHz (space-to-Earth) and epfd↑ limits in the 5 925-6 725 MHz (Earth-to-space) frequency bands did not take into account circular-orbit non-GSO and therefore are more stringent than in other FSS bands that did consider circular orbit non-GSO systems.

RR Article 22 does not contain epfd↓ and epfd↑ limits for non-GSO systems in the frequency bands 4 500-4 800 MHz (space-to-Earth) and 6 725-7 025 MHz (Earth-to-space) allocated to the FSS, the use of which is subject to the provisions of RR Appendix 30B.

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. Draft CPM text for this issue was developed and two studies were indicated as conclusion. One study indicated that there is no need to review the values of the existing limits presented in Article **22** epfd and Article **21** pfd of the Radio Regulations for the 3 700 4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz, and 6 725-7 025 MHz frequency bands. Another study suggested to establish coordination procedure in the frequency bands 3 700−4 200 MHz and 5 925−6 425 MHz between non-GSO FSS systems under RR No. **9.12**, while keeping the values of the existing limits presented in Article **22** epfd and Article **21** pfd of the Radio Regulations no change.

**2. Documents**

* Input Documents: APG19-4/INP-9 Rev.1 (Chairman of APT), APG19-4/INP-17 (AUS), APG19-4/INP-36 (THA, VTN), APG19-4/INP-61 (J), APG19-4/INP-77 (KOR), APG19-4/INP-98 (CHN), APG19-4/INP-120 (INS)
* Information Documents: APG19-4/INF-04 (ICAO) , APG19-4/INF-22 (CITEL), APG19-4/INF-23 (CEPT), APG19-4/INF-24 (RCC), APG19-4/INF-27 (NPL)

**3. Summary of discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 Australia**- **Document APG19-4/INP-17**

Australia notes that the draft CPM19-2 Report indicates that studies undertaken by ITU-R, in accordance with Resolution **157 (WRC-15)**, lead to a conclusion that there is no need to review the values of the existing limits presented in RR Article **22** (epfd) and RR Article **21** (pfd) for the 3 700‑4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz and 6 725-7 025 MHz frequency bands. Australia fully supports this conclusion.

Australia also notes, and agrees with, the APT Preliminary View on this agenda item from the APG19-3 meeting of 16 March, 2018.

Australia is therefore of the view that No Change to the Radio Regulations is an appropriate conclusion to be recommended to the Director of the ITU Radiocommunication Bureau for inclusion in his report to WRC-19 on agenda item 9.1, issue 9.1.3.

**3.1.2** **Thailand and Viet Nam**- **Document APG19-4/INP-36**

Based on results of ITU-R studies, Thailand and Viet Nam are of the view that no modification is required for the values of the existing limits presented in Article **22** epfd and Article **21** pfd of the Radio Regulations for the frequency 3 700 - 4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz, and 6 725-7 025 MHz.

**3.1.3** **Japan**- **Document APG19-4/INP-61**

Japan supports ITU-R studies that it would be difficult to coexistence between NGSO FSS and GSO FSS 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. Therefore, Japan supports no change to the RR.

**3.1.4 Korea (Rep. of)** - **Document APG19-4/INP-77**

The Republic of Korea supports the result of latest ITU-R studies, which is no change of the values of the existing limits presented in Article **22** epfd and Article **21** pfd of the Radio Regulations for the 3 700 4 200 MHz, 4 500-4 800 MHz, 5 925-6 425 MHz, and 6 725-7 025 MHz frequency bands.

**3.1.5 China (People’s Republic of)** - **Document APG19-4/INP-98**

China supports no change (NOC) to the Radio Regulations to satisfy agenda item 9.1, issue 9.1.3 based on study progress of ITU-R 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)**.

**3.1.6 Indonesia (Republic of)** - **Document APG19-4/INP-120**

Indonesia support no change (NOC) to the Radio Regulations to satisfy agenda item 9.1, issue 9.1.3 based on study progress of ITU-R 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)**.

**3.1.7 Nepal** - **Document APG19-4/INF-27**

The demand for satellite use 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 is in declining phase in Nepal.

Among the frequency bands mentioned in this agenda item, Nepal has fixed microwave point to point allocations in the frequency bands 5 925-6 425 MHz and 6 725-7 025 MHz. However, the frequency band 5 925-6 425 MHz has not been assigned yet. Nepal has fixed satellite frequency allocations in 3 600 MHz - 4 200 MHz.

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

None.

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

APT Members support no change (NOC) to the Radio Regulations to satisfy agenda item 9.1, issue 9.1.3 based on study progress of ITU-R 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)**.

**5. Other View(s)**

None.

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

APT Members are invited to follow the progress of CPM19-2 and WP4A meetings and are encouraged to submit their contributions in the next APG meeting, if necessary.

**7. Views from Other Organisations**

**7.1 Regional Groups**

**7.1.1 ASMG** - **Document APG19-4/INP-09 (Rev.1)**

ASMG position:

* Support No Change to Radio Regulations.

**7.1.2 ATU** - **Document APG19-4/ INP-09 (Rev.1)**

ATU position:

* Take No Change and to continue to advocate this position including at CPM19-2.

**7.1.3 CEPT** - **Document APG19-4/INF-23**

Preliminary CEPT position:

* CEPT supports no changes to the provisions of RR Article **21** and Article **22** in the frequency bands 3700 - 4200 MHz, 4500-4800 MHz, 5925-6425 MHz and 6725-7025 MHz.
* CEPT is considering the introduction of a coordination procedure under RR No. **9.12** in order to address coordination between non-GSO FSS systems in the frequency bands 3700−4200 MHz and 5925−6425 MHz.
  + 1. **CITEL** - **Document APG19-4/INF-22**

Inter‐America Proposal (IAP):

* Outcome should not impact Region 2 or studies do not support taking action.

**7.1.5 RCC** - **Document APG19-4/INF-24**

The RCC Administrations oppose adopting new 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 allocated to the fixed-satellite service, as the studies carried out by ITU-R have concluded that the compatibility of these systems with stations of the incumbent services is unachievable.

At the same time the RCC Administrations are in favour of adopting the conditions ensuring the compatibility for new non-geostationarysatellite orbit systems in 3700−4200 MHz and 5925−6425 MHz frequency bands by applying the coordination procedure under No. **9.12** RR between non-GSO FSS systems in the specified frequency bands.

**7.2 International Organisations**

**7.2.1 ICAO** - **Document APG19-4/INF-04**

ICAO Position:

* 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.
  + 1. **WMO** - **Document APG19-4/INF-02**

- None.

**7.2.3 IARU** - **Document APG19-4/INF-03**

* None.

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