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|  | ASIA-PACIFIC TELECOMMUNITY | **Document No:** |
| **The 5th Meeting of the APT Conference Preparatory**  **Group for WRC-19 (APG19-5)** | **APG19-5/OUT-31** |
| 31 July – 6 August 2019, Tokyo, Japan | 5 August 2019 |

Working Party 4

**APT VIEW AND PRELIMINARY APT COMMON PROPOSAL**

**on WRC-19 agenda item 1.2**

**Agenda Item 1.2:**

*To consider in-band power limits for earth stations operating in the mobile-satellite service, meteorological-satellite service and Earth exploration-satellite service in the frequency bands 401-403 MHz and 399.9-400.05 MHz, in accordance with Resolution****765 (WRC‑15)****;*

Resolution **765 (WRC-15)** – *Establishment of in-band power limits for earth stations operating in mobile-satellite service, the meteorological-satellite service and the Earth exploration-satellite service in the frequency bands 401-403 MHz and 399.9-400.05MHz.*

1. **Background**

Earth exploration-satellite service (EESS), meteorological satellite service (MetSat) and mobile-satellite service (MSS) systems in the 401-403 MHz and 399.9-400.05 MHz frequency bands are currently used for data collection systems (DCS) that implement moderate/low power levels. In these bands, earth stations, also called platforms, are deployed and send specific information to dedicated satellites which collect the corresponding data when the platforms are in the satellite footprint.

However, a growing number of satellite systems are planned to use these frequency bands for telecommanding (Earth-to-space) non-EESS/MetSat satellites under the EESS, MetSat or MSS allocations. And these telecommand links would cause harmful interference to the receivers on board the DCS satellites.

WRC-15 adopted WRC-19 Agenda item 1.2 to consider the possibility of establishing in-band power limits for earth stations in the EESS and METSAT in the frequency bands 401-403 MHz and in the MSS frequency band 399.9-400.05 MHz taking into account ITU-R studies in accordance with Resolution **765** **(WRC-15)**.

ITU-R studies including the relevant ITU-R Recommendations: ITU-R SA.2044-0, ITU-R SA. 1163-3, ITU-R SA.1164-3, ITU‑R SA.1627-0, ITU-R SA.1159-4, ITU-R SA.2045-0, ITU-R M.2046-0.

WP 7B has developed a new Report ITU-R SA.2430-0 and this report provided technical studies for establishing in-band power limits for earth stations operating in the frequency ranges 399.9-400.05 MHz and 401- 403 MHz within the MSS, EESS and MetSat services.

WP7B has also developed the CPM report, in which four different methods are proposed for the band 399.9-400.05 MHz (A, B, C and D), and three for the band 401-403 MHz (E, F and G). (See Section 4/1.2/4 of the CPM report).

* Method A proposes NOC to RR.
* Method B proposes adding a new footnote to include the e.i.r.p. limits in band 399.9-400.03MHz but no limits in 400.03-400.05MHz with a transition period up to 22 November 2024 for some systems operating in the MSS.
* Method C proposes the same limits value and transition period as method B in whole 399.9-400.05MHz.
* Method D proposes the same band and limits value as method B with a transition period up to 22 November 2029.
* Method E proposes adding a new footnote to include the e.i.r.p. limits within 401-403MHz with the end of transition period on 22 November 2024 or 2029(date to be decided by WRC‑19).
* Method F proposes adding a new footnote to include the e.i.r.p. limits and e.i.r.p. densities limits given in section 4/1.2/3.2 and 4/1.2/3.3 of the CPM report in different bands of 401‑403MHz.
* Method G proposes adding a new footnote to include the e.i.r.p. limits in 401-403 MHz, and contains WRC-19 Resolution (still to be developed).

The associated advantages and disadvantages with respect to the different Methods are also described in Section 4/1.2/4 of the CPM text.

**2. Documents**

* Input Documents: APG19-5/INP-45 (AUS), APG19-5/INP-52 (INS), APG19-5/INP-68(CHN), APG19-5/INP-83 (J), APG19-5/INP-109 (MLA & THA), APG19-5/INP-135 (IND)
* Information Documents: APG19-5/INF-01 (WMO), [APG19-5/INF-18](https://www.apt.int/sites/default/files/2019/07/APG19-5_INF-18-CEPT.docx) (CEPT), [APG19-5/INF-19](https://www.apt.int/sites/default/files/2019/07/APG19-5_INF-19-ATU.docx) (ATU), [APG19-5/INF-20](https://www.apt.int/sites/default/files/2019/07/APG19-5-INF-20-CITEL.docx) (CITEL), [APG19-5/INF-22](https://www.apt.int/sites/default/files/2019/07/APG19-5-INF-22-RCC.docx)(RCC)

**3. Summary of discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 Australia – Document APG19-5/INP-45**

Australia supports the establishment of in-band power limits as described in the preliminary draft new Report ITU-R SA.[400 MHz-LIMITS] for MSS, MetSat and EESS earth stations operating in the 401-403 MHz and 399.9-400.05 MHz frequency bands (Earth-to-space).

Appropriate e.i.r.p. limits can be applied by adding a new footnote in the frequency bands 399.9‑400.05 MHz and 401-403 MHz in the Table of Frequency Allocations in RR Article 5. Furthermore, specific transitional measures are to be agreed to accommodate, on a limited timeframe, operation of existing TT&C systems.

Australia supports Methods C and E in the CPM Report.

Australia proposes a Preliminary APT Common Proposal to WRC-19 as follows:



**3.1.2 Indonesia** - **Document APG19-5/INP-52**

Indonesia recognizes the importance of having Uplink Power Limits for the future of DCS, and Indonesia does not have any future plan to use the mentioned bands for TT&C.

For the MSS band 399.9-400.05 MHz:

Indonesia currently has no MSS in the band 399.9-400.05 MHz, and therefore Indonesia supports Method C for this band.

The proposed method is to include in RR the relevant e.i.r.p. limits within reference bandwidth of 4 kHz and within 399.9-400.05 MHz, based on figures given in section 4/1.2/3.1 by adding a new footnote in the band 399.9-400.05 MHz in the Table of Frequency Allocations in RR Article 5. This method introduces limits for the whole 399.9-400.05 MHz band without breaking it into sub-bands and also proposes a transition period until 22 November 2024 for some systems operating in the MSS.

For the MetSat/EESS band 401-403 MHz:

Indonesia currently uses the Primary allocation between 401-403 MHz for MetAids Services together with EESS, and 403-406 MHz Primary allocation exclusively for MetAids, therefore Indonesia supports Method E.

The proposed method is to include in RR the relevant e.i.r.p. limits within reference bandwidth of 4 kHz and within 401-403 MHz, based on figures given in section 4/1.2/3.2 by adding a new footnote in the band 401-403 MHz in the Table of Frequency Allocations in RR Article 5. This method introduces e.i.r.p. limits for the whole frequency band and the end of transition period, after which new regulations would apply is proposed to be set on 22 November 2024 or 2029 (date to be decided by WRC‑19), depending on WRC‑19 decision.

**3.1.3 China** - **Document APG19-5/INP-68**

Taking into account the results of studies conducted by ITU-R with regard to WRC-19 Agenda item 1.2 and APT Preliminary Views, China support Method C and Method E contained in the CPM Report regarding the frequency bands 399.9-400.05 MHz and 401-403 MHz respectively.

**3.1.4 Japan** - **Document APG19-5/INP-83**

Since a number of the EESS satellites are operating for the telecommand under the allocation to the EESS (Earth-to-space) in the frequency band 401-403 MHz, Japan supports Method E with transition period for applying the relevant e.i.r.p. limits of up to 22 November 2029 to ensure operation of existing and subsequent satellite systems, for which complete notification information is received by the Radiocommunication Bureau before 22 November 2019 and brought into use before 22 November 2019, during the transition period.

Based on the above views, Japan proposes regulatory and procedural considerations to be taken under the Agenda Item 1.2 of the WRC-19, which are slightly modified the Method E in the CPM report. Modification is shown with tracked changes and turquoise highlighted in APG19-5/INP-83.

**3.1.5 Malaysia, Thailand**- **Document APG19-5/INP-109**

Malaysia and Thailand support the proposals to include in RR, the relevant e.i.r.p. limits within reference bandwidth of 4 kHz given in section 4/1.2/3.2 of the CPM Report for earth stations in the EESS and MetSat in the frequency band 401-403 MHz and the MSS in the frequency band 399.9-400.05 MHz by adding a new footnote in the Table of Frequency Allocations in RR Article 5, in order to ensure the operation of existing and future systems that usually implement with low or moderate output powers for MSS, EESS and MetSat systems.

Therefore, Malaysia and Thailand support Method C (for 399.9-400.05 MHz) and Method E (401-403 MHz) of the CPM Report.

**3.1.6 India**- **Document APG19-5/INP-135**

Based on the results of the studies which show that the non-GSO telecommand operations are not compatible with the low power operations of MSS in the band 399.9-400.05 MHz, and low-power operation of the non-GSO EESS and MetSat in the band 401-403MHz. Preliminary view proposed is as below.

* Frequency band 399.9-400.05 MHz

Method A NOC

* Frequency band 401-403 MHz

Method E

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

APG19-5 received proposals by some APT Members which support either Method A or Method C for the frequency band 399.9-400.05MHz and method E for the frequency band 401-403MHz. After the discussion, APT Members agreed to support Method C and E in the respective frequency bands at WRC-19.

**4. APT View(s)**

APT Members support the ITU-R studies in accordance with Resolution **765 (WRC-15)** on establishing in-band power limits, given in section 4/1.2/3.1 and 4/1.2/3.2 of CPM AI 1.2 report, for earth stations required to protect satellite system with lower or moderate power (e.g. DCS) from harmful interference from telecommand-link earth stations operating in the EESS and MetSat in the frequency band 401-403 MHz and the MSS in the frequency band 399.9-400.05MHz.

**4.1 For the band 399.9-400.05 MHz**

APT Members support Method C in the CPM Report for this Agenda Item and support the e.i.r.p. limit indicated in Table 4/1.2/3-1of the CPM Report. APT members are of the view that transitional period until 22 November 2024 are needed to ensure that the existing telecommands for EESS systems, including those systems to be notified before November 22, 2019, may continue to operate.

**4.2 For the band 401-403 MHz**

APT Members support Method E in the CPM Report for this Agenda Item. APT Members are of the view that transitional arrangements are needed to ensure that the existing telecommands for EESS, including those systems to be notified and brought into use before November 22, 2019, may continue to operate until November 22, 2024 or 2029 (date to be agreed on at WRC‑19).

Some APT Members are of the view that telecommands links for all of the existing satellite systems in operation under EESS are necessary to be ensured continuously until November 22, 2029. Therefore, some APT Members support the Method E of the CPM Report with a transition period for applying the relevant e.i.r.p. limits of up to November 22, 2029 in this band.

**5. Preliminary APT Common Proposal(s)**

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