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| APTlogogreen3 | ASIA-PACIFIC TELECOMMUNITY | **Document No:**  |
| **The 3rd Meeting of the APT Conference Preparatory Group for WRC-19 (APG19-3)** | **APG19-3/OUT-18** |
| 12 – 16 March 2018, Perth, Australia | **16 March 2018** |

Working Party 4

**PRELIMINARY VIEWs 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)****;*

**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)**.

WP 7B is developing a new Report ITU-R SA.[400 MHz-LIMITS] and this report provided that the earth station maximum e.i.r.p. in the mobile-satellite service in the frequency band 399.9-400.05 MHz, the meteorological, satellite service and the Earth exploration-satellite service in the frequency band 401-403 MHz, shall comply with the following conditions.

**Table 1.2-1 proposed E/S maximum e.i.r.p. for earth stations
in the 399.9-400.05MHz and 401-403MHz band**

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| **Frequency band** | **Maximum e.i.r.p. of the Earth stations** |
| 399.9-400.05 MHz | 5 dBW |
| 401-403 MHz | GSO/HEO | 22 dBW |
| non-GSO (MEO and LEO) | 7 dBW(1) |

1. For the band 401.899-402.001 MHz, the maximum e.i.r.p. for existing non-GSO MetSat system (notified before [XXX]) can be increased up to 12 dBW. (It should be noted that the information contained in this footnote will need further considerations by WP7B.)

The advantages and disadvantages associated with this method in the draft CPM text are reproduced as below:

**Advantages**

– The in-band power limits applicable to earth stations would ensure the operation of existing and future systems that usually implement low or moderate output powers for MSS, EESS, and MetSat systems.

– Provide long-term security and assurance of the global network for the protection of stations of data collection system of MSS, EESS, and MetSat services.

– Retains the quality of meteorological and environmental data supporting safety of life services including public weather warnings and alerts, operational decision support for dams, locks and maritime operations on coasts and within inland waterways, emergency response and management for flood scenarios, relay of wildfire weather conditions for wildfire firefighters and other critical uses, and the possibility of disaster risk reduction.

**Disadvantages**

– None.

The draft CPM text currently contains a single regulatory method which is identical to the above table.

**2. Documents**

* Input Documents APG19-3/INP-24 (KOR), APG19-3/INP-31 (IRN), APG19-3/INP-44 (AUS), APG19-3/INP-52 (J), APG19-3/INP-62 (THA), APG19-3/INP-89 (CHN)
* Information Documents APG19-3/INF-06 (CEPT), APG19-3/INF-08 Rev.1 (CITEL)

**3. Summary of discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 Korea, Republic of** - **Document APG19-3/INP-24**

The Republic of Korea supports APT preliminary views developed at the APG19-2.

APT members support the ITU-R studies in accordance with Resolution **765 (WRC-15)** to conduct and complete, in time for WRC-19, the necessary technical, operational and regulatory studies on the possibility of establishing in-band power limits 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, subject to without any constraint to existing services (including DCS and non-DCS systems).

**3.1.2 Iran, Islamic Republic of** - **Document APG19-3/INP-31**

This Administration supports the ITU-R studies in accordance with Resolution **765 (WRC-15)** to conduct and complete, in time for WRC-19, the necessary technical, operational and regulatory studies on the possibility of establishing in-band power limits 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, without any constraint to existing services (including DCS and non-DCS systems).

**3.1.3 Australia** - **Document APG19-3/INP-44**

This agenda item is to ensure the operation of existing and future systems that usually implement low or moderate output powers for the mobile-satellite service (MSS), meteorological-satellite service (MetSat) and Earth exploration-satellite service (EESS) in the frequency bands 401-403 MHz and 399.9-400.05 MHz.

Australia supports the establishment of in-band power limits as described in 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 bands (Earth-to-space). Appropriate e.i.r.p. limits (yet to be finalised) can be applied by adding a new footnote in the 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, operations of existing TT&C systems.

This is consistent with Method A (the only Method) of the draft CPM Report text (Document 7B/238 Annex 1).

**3.1.4 Japan** - **Document APG19-3/INP-52**

The Japanese Preliminary Views are the following:

Since the EESS (Earth-to-space) allocation in the frequency band 401-403 MHz is used for DCS as well as telecommanding EESS satellites in Japan, this Administration is of the view that the continuous usage of the EESS (Earth-to-space) for telecommand purposes should be secured by some method to coexist with DCS in this frequency band.

Japanese proposes NOC to the APT Preliminary View(s) of APG19-2, namely:

APT Members support the ITU-R studies in accordance with Resolution 765 (WRC-15) to conduct and complete, in time for WRC-19, the necessary technical, operational and regulatory studies on the possibility of establishing in-band power limits 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, without any constraint to existing services (including DCS and non-DCS systems).

**3.1.5 Thailand** - **Document APG19-3/INP-52**

Thailand supports adding a new footnote, in-band power limits applicable to earth stations, in the bands 399.9-400.05 MHz and 401-403 MHz 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.

**3.1.6 China** - **Document APG19-3/INP-62**

China supports the studies on this agenda item carried out in ITU-R WP 7B and supports the single regulatory method as contained in the latest WP7B Chairman’s Report (Section 4/1.2/5 of Annex 2 to Document 7B/238).

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

During discussion, the meeting recognised that:

* The draft CPM text is still under development, and is scheduled to be completed at the next WP7B meeting;
* Transitional measures may be useful to protect existing telecommand earth stations for EESS purposes of APT members; On the other hand, the number of systems applying this transitional arrangement should be limited.

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

APT Members support the ITU-R studies in accordance with Resolution **765 (WRC-15)** to conduct and complete, in time for WRC-19, the necessary technical, operational and regulatory studies on the possibility of establishing in-band power limits 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, adding a new footnote. 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/brought into use before a certain date (e.g. the November 22, 2019), may continue to operate.

**5. Other View(s)**

None.

**6. Issues for consideration at Next APG meeting**

As the draft CPM text is due at the next WP7B meeting, Members are encouraged to actively participate that meeting.

**7. Views from Other Organisations**

**7.1 Regional Groups**

**7.1.1 ASMG - Document APG19-2/INF-01**

* Follow up the ongoing studies in the ITU-R.
* Supporting the ongoing studies in order to establish in-band power limits for earth stations operating in Mobile satellite service (MSS), Meteorological satellite service (MetSat) and Earth exploration service in the frequency bands 401-403MHz and 399.9-400.05MHz, in order to ensure the protection of the existing services without imposing any additional constraints in these services due to the massive usage of the fixed and mobile services in these frequency bands in the countries.

**7.1.2 ATU - Document APG19-2/INF-07**

* No preliminary position on this agenda item yet.

**7.1.3**  **CEPT** - **Document APG19-3/INF-06**

* In order to ensure long term continuity for the operation of satellite data collection systems, CEPT supports the establishment of in-band power/e.i.r.p limits, as appropriate, 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, taking into account the result of studies. In addition, for the frequency band 401-403 MHz, CEPT is of the view that different sets of limits have to be established for GSO and non-GSO systems.

**7.1.4 CITEL** - **Document APG19-3/INF-08 rev.1**

Preliminary views from a few countries support studies to protect sensors critical for climate change and weather monitoring and predictions.

**7.1.5 RCC - Document APG19-2/INF-05**

The RCC Administrations consider that studies should be conducted to identify and establish power limits for earth stations used for space operation functions in the frequency bands 401-403 MHz and 399.9−400.05 MHz in order to avoid interference to data collection systems in the meteorological-satellite service, Earth exploration-satellite service and mobile-satellite service.

**7.2 International Organisations**

**7.2.1 IARU** - **Document**

* None.

**7.2.2 ICAO** - **Document**

* None

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