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| **The 5th Meeting of the APT Conference Preparatory**  **Group for WRC–23 (APG23–5)** | **APG23–5/INP–XX** |
| 20 – 25 February 2023, Busan, Republic of Korea | February 2023 |

Thailand (Kingdom of)

**preliminary views on WRC–23 agenda items 1.1, 1.2, 1.4**

**Agenda Item 1.1:**

*to consider, based on the results of the ITU–R studies, possible measures to address, in the frequency band 4 800–4 990 MHz, protection of stations of the aeronautical and maritime mobile services located in international airspace and waters from other stations located within national territories, and to review the pfd criteria in No.* ***5.441B*** *in accordance with Resolution* ***223 (Rev.WRC 19)****.*

**1. Background**

WRC–19 approved WRC–23 agenda item 1.1 calling upon WRC–23 “to consider, based on the results of ITU–R studies, possible measures to address, in the frequency band 4 800–4 990 MHz, protection of stations of the aeronautical and maritime mobile services located in international airspace and waters from other stations located within national territories, and to review the power flux–density criteria in RR No. **5.441B** in accordance with Resolution **223 (Rev.WRC–19)**”. This Resolution invites ITU–R to study the technical and regulatory conditions for the protection of stations of the AMS and the maritime mobile service (MMS) located in international airspace or waters (i.e. outside national territories) and operated in the frequency band 4 800–4 990 MHz.

During Working Party (WP) 5D meeting in October, 2022, the meeting finalized the draft CPM text for WRC-23 agenda item 1.1 in which eight methods to satisfy the agenda item are listed as followed:

* Method A – No change to RR except for consequential changes as reflected in regulatory and procedural considerations
* Method B – No change to RR except for modification of Resolution 223 to apply the existing pfd value to all countries listed in RR No.5441B, as well as other consequential changes as reflected in regulatory and procedural considerations
* Method C – Modification of the existing pfd criteria in RR No.5441B, as well as other consequential changes as reflected in regulatory and procedural considerations
* Method D - Modification of the existing pfd criteria in RR No.5441B and applying it to all countries listed in RR No.5441B, as well as other consequential changes as reflected in regulatory and procedural considerations
* Method E – Keeping the existing pfd and extension of list of countries where it is not applied
* Method F – Only application of RR No. 9.21 for the protection of AMS/MMS stations in international airspace and waters
* Method G – Application of RR No. 9.21 and bilateral/multilateral coordination agreements with costal States for the protection of AMS/MMS stations in international airspace and international waters
* Method H – Only application of RR No. 9.21 for the protection of AMS/MMS stations in international airspace and waters and protection of AMS/MMS is limited to national territory

**2. Preliminary Views**

Thailand is of the view to consider the technical and regulatory conditions for the protection of stations of the aeronautical and maritime mobile services located in international airspace or waters (i.e. outside national territories) and operated in the frequency band 4 800-4 990 MHz. With respect to the review of the pfd criteria contained in RR No. 5.441B, the protection of existing services shall be ensured.

**Agenda Item 1.2:**

*to consider identification of the frequency bands 3 300 – 3 400 MHz, 3 600 – 3 800 MHz,   
6 425 – 7 025 MHz, 7 025 – 7 125 MHz and 10.0 – 10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution* ***245 (WRC–19)****.*

**1. Background**

Resolution **245 (WRC-19)** invites the ITU Radiocommunication Sector to conduct the sharing and compatibility studies with a view to ensuring the protection of services to which the frequency band is allocated on a primary basis, without imposing additional regulatory or technical constraints on those services, and also, as appropriate, on services in adjacent bands, for the frequency bands:

– 3 600 – 3 800 MHz and 3 300–3 400 MHz (Region 2);

– 3 300 – 3 400 MHz (amend footnote in Region 1);

– 7 025 – 7 125 MHz (globally);

– 6 425 – 7 025 MHz (Region 1);

– 10 000 – 10 500 MHz (Region 2).

In light of *considering e)* and *j)* of Resolution **245 (WRC–19)**, global harmonisation of spectrum for IMT being considered in the frequency band 7 025 – 7 125 MHz would be beneficial to APT members in terms of economies of scale in IMT ecosystems and enhancing mid-band spectrum supply, which is crucial to providing both capacity and coverage in IMT network deployment.

In November, 2022 the draft CPM Report to WRC-23 for consideration during the second session of the 2023 Conference Preparatory Meeting (CPM23-2) has been released.   
There are six frequency bands addressed under this agenda item (AI) as follows: Band 1   
(3 300 – 3 400 MHz (amend footnote in Region 1)), Band 2 (3 300 – 3 400 MHz (Region 2)), Band 3 (3 600 – 3 800 MHz (Region 2)), Band 4 (6 425 – 7 025 MHz (Region 1)), Band 5   
(7 025 – 7 125 MHz (globally)) and Band 6 (10.0 – 10.5 GHz (Region 2)).

The methods to satisfy the agenda item in the frequency band 7 025 – 7 125 MHz are summarized below:

Band 5 (7 025 – 7 125 MHz (globally))

– Method 5A: No change.

– Method 5B: Identification of the frequency band 7 025 – 7 125 MHz for IMT without any conditions.

– Method 5C: Identification of the frequency band 7 025 – 7 125 MHz for IMT by creating a new RR footnote with conditions contained in a draft new WRC Resolution.

– Method 5D: Identification of the frequency band 7 025 – 7 125 MHz for IMT by creating a new RR footnote with a requirement to implement technical measures to protect SOS (Earth–to–space) in the band 7 100 – 7 155 MHz.

– Method 5E: Identification of the frequency band 7 025 – 7 125 MHz for IMT with conditions contained in a draft new WRC Resolution, with use expected as of 2030.

All methods propose to suppress Resolution 245 (WRC-19).

**2. Preliminary Views**

Thailand does not support method 5A in the current draft CPM text to maintain its   
preliminary view expressed in APG 23-4, to support the possible Global IMT identification   
in the frequency band 7 025 – 7 125 MHz, subject to the results of ITU–R studies under the condition that the existing services can be protected, particularly Fixed Service in   
6 425 – 7 125 MHz band.

**Agenda Item 1.4:**

*to consider, in accordance with Resolution* ***247******(WRC–19)****, the use of high–altitude platform stations as IMT base stations (HIBS) in the mobile service in certain frequency bands below   
2.7 GHz already identified for IMT, on a global or regional level*.

**1. Background**

The high-altitude platform stations as IMT base stations (HIBS) are located in the stratosphere, providing both uplink and downlink mobile connectivity to the ground-based user equipment (UE). HIBS are intended to be used as part of terrestrial IMT networks, as an application of the mobile service, and may use the same frequency bands with ground-based IMT base stations. The UE to be served by HIBS are proposed to be the same as the ground-based IMT base stations. Currently, the UE support a variety of frequency bands identified for IMT, including frequency bands below 2.7 GHz.

WRC-2000 identified through RR No. **5.388A** the frequency bands 1 885-1 980 MHz,   
2 010- 2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3, and the frequency bands   
1 885-1 980 MHz and 2 110-2 160 MHz in Region 2 that may be used by high-altitude platform stations as base stations to provide IMT, in accordance with Resolution **221 (Rev.WRC-07)** Furthermore, Resolution **221 (Rev.WRC-07)** provides the technical conditions that need to be met by these high-altitude platform stations to ensure that emissions to neighboring countries do not cause co-channel harmful interference to the other services and applications allocated in these frequency bands, including terrestrial IMT-2000 stations.

The work under WRC-23 agenda item 1.4 includes studying sharing and compatibility in the frequency bands 694-960 MHz, 1 710-1 885 MHz and 2 500-2 690 MHz, as well as appropriate modifications to the existing RR No. **5.388A** and associated Resolution **221 (Rev.WRC-07)** These studies are intended to allow the use of such frequency bands by HIBS. This would allow HIBS to provide mobile-broadband connectivity to underserved communities, and in rural and remote areas, while ensuring the protection of existing primary services in the same and adjacent frequency bands.

**2. Preliminary Views**

Thailand supports establishing a new globally harmonized regulatory framework for HIBS, with a view to providing flexibility of spectrum usage for HIBS in certain frequency bands below 2.7 GHz already identified for IMT referred to in Resolution 247 (WRC-19), while ensuring protection of the existing primary services, to which the frequency band is allocated and in the adjacent frequency bands, without imposing any additional technical or regulatory constraints in their deployment including other IMT uses, existing systems and the planned development of primary services.