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|  | ASIA-PACIFIC TELECOMMUNITY | **Document No:** |
| **The 2nd Meeting of the APT Conference Preparatory**  **Group for WRC-23 (APG23-2)** | **APG23-2/OUT-08** |
| 19 – 23 April 2021, Virtual/Online Meeting | 23 April 2021 |

Working Party 1

**PRELIMINARY VIEWs on WRC-23 agenda item 1.4**

**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**

* This Agenda Item was initiated by APT ([24A24-A4](https://www.itu.int/dms_pub/itu-r/md/16/wrc19/c/R16-WRC19-C-0024!A24-A4!MSW-E.docx)), ATU ([46A24-A8](https://www.itu.int/dms_ties/itu-r/md/16/wrc19/c/R16-WRC19-C-0046!A24-A8!MSW-E.docx)), CITEL ([11A24-A2)](https://www.itu.int/dms_pub/itu-r/md/16/wrc19/c/R16-WRC19-C-0011!A24-A2!MSW-E.docx) and PNG ([67A24](https://www.itu.int/dms_pub/itu-r/md/16/wrc19/c/R16-WRC19-C-0067!A24!MSW-E.docx)) in WRC-19.
* At WRC-2000, the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3 and the bands 1 885-1 980 MHz and 2 110-2 160 MHz in Region 2 were identified in the mobile service for high altitude platform stations as IMT base station (HIBS) as in RR No. **5.388A** and Resolution **221** **(Rev.WRC-07)** stipulates to develop an ITU-R Recommendation providing technical guidance to facilitate consultations with neighboring administrations for HIBS. Since 2000, IMT systems have evolved significantly in terms of spectrum identification, network deployment and radio access technology, with the standardization of IMT-Advanced and IMT-2020. It is now timely to review the existing provisions of the Radio Regulations (RR) in order to provide the same flexibility granted in RR No. **5.388A** to other bands below 2.7 GHz globally or regionally harmonized for IMT.
* In addition, HIBS would be used as part of terrestrial IMT networks and may use the same frequency bands as ground-based IMT base stations. In this sense, the user equipment to be served, whether by the high-altitude or the ground-based IMT base stations, are the same. Currently user equipment already supports a variety of frequency bands identified for IMT, which is another reason to expand the use of HIBS to other globally or regionally harmonized IMT bands below 2.7 GHz.
* List of relevant documents:
* [Recommendation ITU-R M.1456](https://www.itu.int/rec/R-REC-M.1456/recommendation.asp?lang=en&parent=R-REC-M.1456-0-200005-I) “Minimum performance characteristics and operational conditions for high altitude platform stations providing IMT-2000 in the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3 and 1 885-1 980 MHz and 2 110-2 160 MHz in Region 2”
* [Recommendation ITU-R M.1641](https://www.itu.int/rec/R-REC-M.1641/recommendation.asp?lang=en&parent=R-REC-M.1641-1-200603-I) ” A methodology for co-channel interference evaluation to determine separation distance from a system using high-altitude platform stations to a cellular system to provide IMT-2000 service ”
* [APT/AWG/REP-92](https://www.apt.int/sites/default/files/2019/07/APT-AWG-REP-92_-_Report_on_HIBS.docx) ”APT Report on Technical and Operational Analysis for Using High Altitude Platform Station as IMT Base Stations (HIBS) in the Frequency Bands below 2.7 GHz identified for IMT”

**2. Documents**

* Input Documents APG23-2/[INP-10 (Rev.1)](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-10Rev.1.docx) (J), [INP-24](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-24_AUS_contribution_for_WP1_Preliminary_Views_on_WRC-23_Agenda_Items_1.1_1.2_1.3_1.4_1.5_9.1Topic_c_and_No._21.5.docx) (AUS), [INP-30](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-30_WP1_kor.docx) (KOR), [INP-39](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-39_Indonesia_WP1.docx) (INS), [INP-50](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-50_VTN_WP1_PV_1.1_1.2_1.3_1.4_1.5.docx) (VTN)
* Information Documents APG23-2/[INF-11](https://www.apt.int/sites/default/files/2021/03/APG23-2-INF-11_Briefing_on_AI1.4.docx) (DG Chair), [INF-25](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-25_ASMG_Preparation_for_WRC-23.pdf) (ASMG), [INF-26](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-26_State_of_ATU_WRC-23_Preparations.docx) (ATU), [INF-34](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-34_CITEL_Preparation_for_WRC-23.pdf) (CITEL), [INF-35](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-35_Status_of_CEPT_Preparation_for_WRC-23_and_RA-23.pdf) (CEPT), [INF-36](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-36_RCC_Preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf) (RCC)

**3. Summary of discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 Japan** - **Document APG23-2/**[**INP-10 (Rev.1)**](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-10Rev.1.docx)

* Japan supports ITU-R studies being conducted in accordance with Resolution **247 (WRC-19)**.
* Since HIBS would be used as part of terrestrial IMT networks and may use the same frequency bands as ground-based IMT base stations, Japan is of the view that flexibility of spectrum usage for HIBS, i.e., identifications of wider frequency ranges for HIBS should be a goal in this agenda item. Therefore, based on the results of the sharing and compatibility studies, Japan supports the consideration of the identification to HIBS, provided that the protection of the existing services is ensured, to which the frequency band is allocated on a primary basis, without imposing any additional technical or regulatory constraints in their deployment.

**3.1.2 Australia** - **Document APG23-2/**[**INP-24**](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-24_AUS_contribution_for_WP1_Preliminary_Views_on_WRC-23_Agenda_Items_1.1_1.2_1.3_1.4_1.5_9.1Topic_c_and_No._21.5.docx)

* Australia supports establishing a new globally or regionally harmonised regulatory framework that responds to changing technology and improves the efficient use of frequency bands below 2.7 GHz already identified for IMT, by facilitating the use of HIBS. Australia notes that any change must ensure the protection of services to which the bands are allocated and should not give priority to HIBS over existing IMT identifications.

**3.1.3 Korea (Republic of)** - **Document APG23-2/**[**INP-30**](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-30_WP1_kor.docx)

* The Republic of Korea is of the preliminary view that considering the growing demand for access to mobile broadband, HIBS in certain frequency bands below 2.7 GHz could be useful to provide IMT services with minimal network infrastructure.
* However, it should be ensured that existing services allocated in the frequency bands considered under this agenda item and the adjacent bands, particularly, when neighboring countries use terrestrial IMT base stations and mobile stations, should be protected based on sharing and compatibility studies, with no additional technical or regulatory constraints on those existing uses and planned development.

**3.1.4 Indonesia (Republic of)** - **Document APG23-2/**[**INP-39**](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-39_Indonesia_WP1.docx)

* Indonesia supports the study by ITU-R on identification of certain frequency bands below 2.7 GHz already identified for IMT to be used by HIBS as in the Resolution **247 (WRC-19)** by ensuring the protection to the incumbent services, which the frequency band is allocated on the primary basis.

**3.1.5 Viet Nam (Socialist Republic of)** - **Document APG23-2/**[**INP-50**](https://www.apt.int/sites/default/files/2021/04/APG23-2-INP-50_VTN_WP1_PV_1.1_1.2_1.3_1.4_1.5.docx)

* Viet Nam supports studies on the use of HIBS with the view that ensuring the protection of primary services in the same and in adjacent frequency bands as appropriate and without imposing any technical or regulatory constraints on these services, in accordance with Resolution **247 (WRC-19)**.
  1. **Summary of issues raised during the meeting**
* Some APT Members proposed to send a liaison statement to AWG to invite them to provide information on HIBS gateway links which relate to WRC-23 agenda item 1.4 but have not been undertaken in ITU-R WP 5D. Noting that HIBS gateway links were considered outside the scope of this agenda item in ITU-R WP 5D as indicated in Document APG23-2/[INF-11](https://www.apt.int/sites/default/files/2021/03/APG23-2-INF-11_Briefing_on_AI1.4.docx), some other APT Members expressed their views that AWG could conduct technical study for the use of gateway links to support HIBS under the purview of its mandate or terms of reference (ToR). Therefore it is not necessary to send liaison statement to AWG in this regard.
* Some APT Members proposed to include in the liaison statement to AWG to study on assessing the impact, if any, of HIBS usage in Region 1 and Region 2 on the existing services in Region 3 in frequency bands 2655-2690 MHz and 2500-2535 MHz. However, some other APT Members were of the view that it may be premature to take up this issue at present as such studies could be taken up by WP 5D. Hence, it is not necessary to send any liaison statement to AWG in this regard.
* Based on the discussion, APG23-2 decided not to send a liaison statement to AWG.

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

* APT Members support the ongoing ITU-R studies for establishing a new globally or regionally harmonised 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 services, to which the frequency band is allocated on a primary basis, without imposing any additional technical or regulatory constraints in their deployment including other IMT uses, existing systems and the planned development of primary services.

**5. Other View(s) from APT Members**

* None

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

* APT Members are encouraged to submit their contributions to the next APG23-3 meeting taking into account progress of ITU-R studies.

**7. Views from Other Organisations** (as provided in the information documents to

APG23-2)

**7.1 Regional Groups**

**7.1.1 ASMG** - **Document APG23-2/**[**INF-25**](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-25_ASMG_Preparation_for_WRC-23.pdf)

* Follow-up sharing and compatibility studies in order to ensure the protection of the services which the bands are allocated on a primary basis, including other uses of IMT, the protection of existing systems and the future development of the services that have an allocation on a primary basis and neighbouring services as necessary in addition to the required standards for coordination with neighbouring countries regarding the override coverage.
* Determine the position on whether or not these applications can be used in the bands mentioned in Resolution **247 (WRC-19)** in the upcoming ASMG meetings.

**7.1.2 ATU** - **Document APG23-2/**[**INF-26**](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-26_State_of_ATU_WRC-23_Preparations.docx)

* ATU Preparatory Meeting for WRC-23 (APM23-2) is scheduled for 6 to 10 September 2021.

**7.1.3 CEPT** - **Document APG23-2/**[**INF-35**](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-35_Status_of_CEPT_Preparation_for_WRC-23_and_RA-23.pdf)

* To be developed.

**7.1.4 CITEL** - **Document APG23-2/**[**INF-34**](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-34_CITEL_Preparation_for_WRC-23.pdf)

* Some administrations support studies on WRC-23 agenda item 1.4, in accordance with Resolution **247 (WRC-19)**.
* Some administrations consider that modifications to the identifications to IMT (RR Nos. **5.286AA**, **5.317A**, **5.341A**, **5.341B**, **5.341C**, **5.346**, **5.346A**, **5.384A** and **5.388**) in the Radio Regulations are outside the scope of WRC-23 Agenda Item 1.4; there should be no additional regulatory or technical constraints imposed on the deployment of terrestrial IMT in the frequency bands referred to in those footnotes.

**7.1.5 RCC** - **Document APG23-2/**[**INF-36**](https://www.apt.int/sites/default/files/2021/04/APG23-2-INF-36_RCC_Preparation_to_the_World_Radio_Conference_and_Radio_Assembly_2023.pdf)

* The RCC Administrations consider it necessary to identify the possibility of using HIBS in the frequency bands referred to in Resolution **247 (WRC-19)**, taking into account the protection requirements for incumbent services, in these and adjacent frequency bands, based on the result of compatibility studies carried out by ITU-R.

**7.2 International Organisations**

**7.2.1 WMO** - **Document APG23-1/**[**INF-05**](https://www.apt.int/sites/default/files/2020/09/APG23-1-INF-05_Preliminary_WMO_Position_on_WRC-23.docx)

* WMO is of the opinion that studies must be conducted to specify the HIBS out-of-band unwanted emissions to prevent interference:
  + - to meteorological radars in the 2700-2900 MHz band from HIBS operated in the 2500-2690 MHz band,
    - to MetSat service in the 1675-1710 MHz from HIBS operated in the 1710-1885 MHz band.