|  |  |  |
| --- | --- | --- |
|  | ASIA-PACIFIC TELECOMMUNITY | Document No: |
| **The 6th Meeting of the APT Conference Preparatory****Group for WRC-23 (APG23-6)** | **APG23-6/OUT-12** |
| 14 – 19 August 2023, Brisbane, Australia | 18 August 2023 |

Working Party 1

**APT VIEW and Preliminary APT Common Proposal on WRC-23 agenda item 1.5**

**Agenda Item 1.5:**

*to review the spectrum use and spectrum needs of existing services in the frequency band 470-960 MHz in Region 1 and consider possible regulatory actions in the frequency band 470‑694 MHz in Region 1 on the basis of the review in accordance with Resolution* ***235 (WRC‑15)****;*

**1. Background**

The spectrum below 1 GHz is exceptionally well suited for mobile broadband applications. In particular, the unique propagation characteristics of the bands below 1 GHz allow for wider area coverage, which in turn requires fewer infrastructures and facilitates service delivery to rural or sparsely populated areas.

During WRC-15, after a proposal of WRC-19 agenda item by multiple Region 1 administrations for studying Region 1 identification of 470-694/698 MHz for IMT and consequent Plenary-session discussions, an agenda item was proposed for WRC-23,as item 2.5 in the Resolution **810 (WRC-15)**. This proposal was approved in WRC-19 as Agenda Item 1.5 and the relevant Resolution **235** **(WRC-15)** was kept intact.

Resolution **235** **(WRC-15)** invites ITU-R to review the spectrum use and study the spectrum needs of existing services within the frequency band 470-960 MHz in Region 1, in particular the spectrum requirements of the broadcasting and mobile, except aeronautical mobile, services. Furthermore, ITU-R is invited to carry out sharing and compatibility studies, as appropriate, in the frequency band 470‑694 MHz in Region 1 between the broadcasting and mobile, except aeronautical mobile, services, as well as to conduct sharing and compatibility studies, as appropriate, in order to provide relevant protection of systems of other existing services. At the end, this Resolution limits WRC-23 to take possible regulatory actions in the frequency band 470-694 MHz in Region 1, as appropriate, based on the results of the completed studies above. Task Group 6/1 (TG 6/1) was established by [CPM23-1](https://www.itu.int/dms_pub/itu-r/md/00/ca/cir/R00-CA-CIR-0251%21%21MSW-E.docx) to be responsible group for conduction of Agenda Item 1.5 work.

In the [CPM Report](https://www.itu.int/md/R19-CPM23.2-R-0001/en), the following Methods have been developed to satisfy this agenda item, applying only to Region 1 countries:

**Method A**: No Change (two alternatives).

**Method B**: Primary allocation to the mobile service in the frequency band 470-694 MHz with or without identification to IMT in the frequency band 470-694 MHz or parts thereof in Region 1 (three alternatives).

**Method C**: Primary allocation to the mobile, except aeronautical mobile, service in the frequency band 470-694 MHz and identification to IMT in the frequency band 470‑694 MHz or parts thereof in Region 1 (nine alternatives).

**Method D**: Primary allocation to the mobile, except aeronautical mobile, service within the band 470-694 MHz without IMT identification (five alternatives).

**Method E**: Primary allocation to the mobile, except aeronautical mobile, service of the band 470-694 MHz in Region 1 with technical condition limiting mobile operations to downlink in this band.

**Method F**: Secondary allocation to mobile, except aeronautical mobile, service in the band 470-694 MHz in Region 1 (three alternatives).

**Method G**: In conjunction with Methods B, C, D and E, upgrade of the radio astronomy allocation to primary status.

Moreover, in conjunction with Methods B, C, D and E, Suppression of Resolution **235 (WRC-15)**.
CPM text related to agenda item 1.5 were populated with 58 various *views*. Following matters to be noted in CPM Report:

– There are diverging views on scope of agenda item 1.5 on inclusion or exclusion of secondary services in studies and reflection of results

– There are diverging views regarding whether the scope of Resolution **235 (WRC-15)** on inclusion or exclusion studies for interference of the incumbent services to the mobile service as well as consideration of interference among systems of the same service

– There are views related to the ambiguous and to some extent misleading terms *"possible regulatory actions …, as appropriate.”* in Resolution **235 (WRC-15)**.

There are divergent views regarding whether the conducted studies are eligible without ITU-R SG6 approval or not.

* In the sub-sections under the section 1/1.5/3.3, summary of studies and geographical separations between IMT BS&UE and DTTB, DTTB and PPDR, DTTB and non-IMT trunked ad hoc mobile systems, wind profiler radar and LMS, RAS and LMS, SAB/SAP and IMT were provided under different assumptions.

Region 3 already has a primary mobile allocation within the 470 – 694 MHz frequency band. Some Region 3 countries are included in RR No. **5.296A** as having identification to International Mobile Telecommunications (IMT). In addition, several countries in Region 2 also identified portions of this band for IMT through footnotes **5.295** and **5.308A**.

Some Region 3 administrations currently use the frequency band of this agenda item for broadcasting service. It is very important to ensure protection of existing services and systems as well as their future use from harmful interference of possible Region 1 primary mobile service when considering that Region 3 has a long border with several Region 1 countries.

AWG has developed and published the [APT/AWG/REP-79](https://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-79_APT_Report_Arrangement_470-698_MHz.docx) “APT Report on Frequency Arrangements for IMT in the Band 470-698 MHz” and this report would be revised and finalized in AWG next meeting in September.

**2. Documents**

* Input Documents APG23-6/[INP-06](https://www.apt.int/sites/default/files/2023/06/APG23-6-INP-06_WP1_Report.docx) (WP1 Co-Chairs), [INP-13](https://www.apt.int/sites/default/files/2023/07/APG23-6-INP-13_Cambodia_WP1_PACP_for__WRC-23_Agenda_Items.docx) (CBG), [INP-17](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-17_India_WP1_PACP_WRC-23_Agenda_Items.docx) (IND), [INP-29](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-29_Japan_WP1_PACP_WRC-23_Agenda_Items.docx) (J), [INP-65](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-65_Iran_WP1_Preliminary_Views_on_WRC-23_Agenda_Items.docx)(Rev.1) (IRN), [INP-80](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-80_Australia_WP1_PACP_WRC-23_Agenda_Items_and_WRC-19_Document_550.docx)(Rev.1) (AUS), [INP-87](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-87_KOR_WP1_PACP_WRC-23_Agenda_Items.docx) (KOR), [INP-98](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-98_New_Zealand_WP1_PACP_WRC-23_Agenda_Items.docx) (NZL), [INP-103](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-103_China_WP1_PACP_WRC-23_Agenda_Items.docx) (CHN), [INP-118](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-118_VietNam_WP1_PACP_WRC-23_Agenda_Items.docx) (VTN), [INP-128](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-128_Multicountry_WP1_PACP_WRC-23_Agenda_Items.docx)(Rev.4) (SMO and TON)
* Information Documents APG23-6/[INF-02](https://www.apt.int/sites/default/files/2023/06/APG23-6-INF-02_WMO_Position_on_WRC-23_Agenda.docx) (WMO), [INF-25](https://www.apt.int/sites/default/files/2023/07/APG23-6-INF-25_ICAO-Position_for_ITU-WRC23.docx) (ICAO), [INF-38](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-38_IAFI_Information_spectrum_needs_programme_WRC-23_Agenda_Item_1.5.docx) (IAFI), [INF-40](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-40_GSMA_Views_WRC-23_for_mobile.docx) (GSMA Hong Kong), [INF-45](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-45_Status_of_RCC_preparation_to_WRC-23.pdf) (RCC), [INF-46](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-46_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf) (CEPT), [INF-47](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-47_GSA_PACP_WRC-23_Agenda_Items.docx) (GSA), [INF-51](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-51_Brief_on_AI1.5.docx) (DG Chair), [INF-52](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-52_CITEL_preparation_for_WRC-23.pdf) (CITEL)

**3. Summary of discussions**

**3.1 Summary of APT Members’ views**

**3.1.1 Cambodia (Kingdom of)** - **Document APG23-6/**[**INP-13**](https://www.apt.int/sites/default/files/2023/07/APG23-6-INP-13_Cambodia_WP1_PACP_for__WRC-23_Agenda_Items.docx)

* Cambodia has identified part of band 470-960 MHz for IMT, and supports primary allocation to mobile services and identification of IMT services in Region 1.
* Cambodia is of the view that any changes made to Radio Regulations for Region 1 shall not impact existing and planned usages in this band in Region 3 and also shall not impose any procedural or regulatory constraints on existing services in Region 3.

**3.1.2 India (Republic of)** - **Document APG23-6/**[**INP-17**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-17_India_WP1_PACP_WRC-23_Agenda_Items.docx)

* India is of the view that Agenda Item 1.5 is a Region 1 issue, and any regulatory action decided by WRC-23 with respect to this Agenda Item shall in no way adversely affect frequency allocations and existing and future use of the relevant frequency band in Region 3.

**3.1.3 Japan** - **Document APG23-6/**[**INP-29**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-29_Japan_WP1_PACP_WRC-23_Agenda_Items.docx)

* Japan recognizes that the results of the ITU-R studies on the spectrum use and spectrum needs of existing services in the frequency band 470-694 MHz in Region 1 showed that most of the countries in Region 1 wish to continue using the frequency band for the broadcasting service and that most of the results of the ITU-R studies on sharing and compatibility between the existing and mobile services indicated difficulty in coexistence of the broadcasting and mobile services although different conclusions were drawn due to different assumptions used.
* Taking into account the results of the studies, Japan supports Method A (NOC) in order that any changes of procedural or regulatory provisions in Region 1 shall no way adversely affect existing services, in particular the broadcasting service, in Region 3.

**3.1.4 Iran (Islamic Republic of)** - **Document APG23-6/**[**INP-65 (Rev.1)**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-65R1_Iran_WP1_Preliminary_Views_on_WRC-23_Agenda_Items.docx)

* The Islamic Republic of Iran is of the view that the Agenda Item 1.5 does not specifically address the allocation of the band for mobile service nor IMT identification. Furthermore, the frequency band 470 – 694 MHz has been extensively used for broadcasting services in many countries in Region 1 and I.R. of Iran (see the result of the survey made by ITU-R SG6 as reflected in the Report BT.2302).
* Sharing and compatibility studies show that the two services cannot share the band in the same geographic area and very large separation distance is required.
* Therefore, this Administration as a member of GE06 agreement and mostly affected country in Region 3 by this agenda item supports Method A (No Change) in the framework of APT common position.

**3.1.5 Australia** - **Document APG23-6/**[**INP-80 (Rev.1)**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-80R1_Australia_WP1_PACP_WRC-23_Agenda_Items_and_WRC-19_Document_550.docx)

* Australia notes that this is a Region 1 issue, and possible regulatory actions should focus on Region 1. Any possible regulatory actions under this agenda item should remain relevant to Region 1, noting that the frequency band 470-960 MHz is already allocated to the fixed, mobile and broadcasting services on a primary basis in Region 3. Australia supports the APT Preliminary View for this agenda item, as developed at APG23-5.
* Australia does not propose a Preliminary APT Common Proposal for this agenda item.

**3.1.6 Korea (Republic of)** - **Document APG23-6/**[**INP-87**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-87_KOR_WP1_PACP_WRC-23_Agenda_Items.docx)

* The Republic of Korea is of the view that regulatory provisions in Region 1 should not adversely affect existing services in Region 3.

**3.1.7 New Zealand** - **Document APG23-6/**[**INP-98**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-98_New_Zealand_WP1_PACP_WRC-23_Agenda_Items.docx)

* New Zealand notes that this is a Region 1 issue and that Region 3 has an existing primary allocation to the mobile service the 470-694 MHz frequency band. New Zealand notes that several Region 3 countries are included in RR No **5.296A** as having an identification to International Mobile Telecommunications (IMT) in portions of the 470 – 694 MHz or 610-698 MHz frequency bands. New Zealand notes an allocation to the Mobile service in Region 1 and IMT identification (e.g. for some countries through footnote) would be comparable to the current situation for Region 3.
* New Zealand is of the view that APG23-6 should not develop a PACP on this Agenda Item as it is out of scope for Region 3 and there is no clear consensus among APT members.

**3.1.8 China (Republic of)** - **Document APG23-6/**[**INP-103**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-103_China_WP1_PACP_WRC-23_Agenda_Items.docx)

* China supports Method A1(NoC) for the following reasons:
* Agenda Item 1.5 belongs to Region 1 issue, and any regulatory action resulting from WRC-23 decision regarding this Agenda Item shall not have any negative impact on the frequency allocations and the existing and future use of the relevant frequency band in Region 3.
* The studies by ITU-R SG6 on compatibility and sharing have shown that broadcasting and IMT services cannot coexist within the same frequency band and a significant separation distance is required.
* Resolution **235 (WRC-15)** clearly stipulates that the studies called for in the Resolution have to be "completed and approved by ITU-R" before WRC-23 can consider any regulatory action in the 470-694 MHz band. The studies carried out in TG 6/1 have not followed the recognized approval procedures as given in Annex 2 of Resolution ITU-R 1-8. Thus, any regulatory action by WRC-23 would contravene the conditions stated in Resolution **235 (WRC-15)**.

**3.1.9 Viet Nam (Socialist Republic of)** - **Document APG23-6/**[**INP-118**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-118_VietNam_WP1_PACP_WRC-23_Agenda_Items.docx)

* Viet Nam supports sharing and compatibility studies in ITU-R, as appropriate, in the frequency band 470-694 MHz in Region 1 between the broadcasting and mobile, except aeronautical mobile, services, taking into account relevant ITU-R studies, Recommendations and Reports.
* Taking into account above studies as well as the interest of global harmonization and economies of scale, Viet Nam supports appropriate action at WRC-23 including potential identifications of the frequency band 470-694 MHz to IMT in Region 1. Therefore, method C is preferred, Alternative C3 to C9 could be further assessed.

**3.1.10 Samoa (Independent State of)** - **Document APG23-6/**[**INP-128**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INP-128_Multicountry_WP1_PACP_WRC-23_Agenda_Items.docx) **(Rev.4)**

* Given the complexity of the issues on this agenda item 1.5, it is expected that TG6/1 tasked with managing the workload may find difficulties given the commitment many developing Island states make to implementing DTT.
* WRC-23 decisions should not adversely affect Region 3 frequency allocations and existing and future use of the relevant frequency band nor subject Region 3 to any procedural or regulatory provisions changes.
* These administrations support no change Method A1 and do not want any changes to the regulatory conditions for using the 470 -694 MHz frequency band in Region 1 under this WRC-23 agenda item due to the existing services' current and future intensive use of this frequency band globally by SIDs and Developing countries.

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

* With respect to the GE06 regional agreement, one APT Member, part of GE06 agreement in Region 3, is of the view that technical, operational, and regulatory conditions resulted from the ITU-R sharing and compatibility studies shall in no way undermine or reduce protection of and conditions under which this agreement made.
* There was discussion on reflection of views of some APT Members which are of the view that there should be no adverse impact to the existing services in Region 3 and the CPM Method A1 (No Change) is their preferred method.
* Taking into account ITU-R studies as well as the interest of global harmonization and economy of scale, some APT Members are considering to support appropriate action at WRC-23, including potential identifications in parts of the frequency band 470-694 MHz to IMT in Region 1.
* Some APT Members are of the view that the Agenda Item 1.5 does not basically address the allocation of the band for mobile service nor IMT identification. Moreover, the studies carried out at TG6/1 have not completed and approved by ITU-R. Therefore, any regulatory action by WRC-23 would contravene the condition stated in Resolution **235 (WRC-15).**
* There was discussion on having PACP for no change position at WRC-23 which was not received consensus.

**4. APT View(s)**

APT Members are of the view that the conclusion to be reached on agenda item 1.5 is a Region 1 issue, and WRC-23 decisions shall in no way adversely affect Region 3 frequency allocations and existing and future use of the relevant frequency band.

**5. Preliminary APT Common Proposal**

None.

**6. Issues for Consideration at APG Coordination Meeting at WRC-23 (if any)**

None.

**7. Views from Other Organisations**

**7.1 Regional Groups**

**7.1.1 CEPT** - **Document APG23-6/**[**INF-46**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-46_Status_of_CEPT_preparation_for_WRC-23_and_RA-23.pdf)

* CEPT is currently considering the following three options for European Common Proposals:
* No Change, with an agenda item at a later WRC to consider possible regulatory action in the frequency band 470-694 MHz;
* A primary allocation to the mobile service to be made at WRC-23, which will enter into force at a later date;
* A secondary allocation to the mobile service to be made at WRC-23, with a future agenda item for WRC-31 to consider a possible upgrade to a primary allocation.
* CEPT is of the view that sharing studies indicate that due care will be required in any introduction of new applications of the mobile service in the band.
* CEPT is of the view that this agenda item seeks the long-term balance between (1) national requirements, in particular due to the evolution of spectrum usage and demands, and (2) the challenges of effective cross-border coordination between the existing services and various services/applications wishing to access spectrum, including applications of the mobile service.
* In line with Resolution **235 (WRC-15)**, CEPT acknowledges and supports that no regulatory action is required in the band 694- 960 MHz.
* CEPT is of the view that the primary allocation of the 470-862 MHz band to the broadcasting service in Region 1 shall remain, in order to enable the protection and development of incumbent usage of the broadcasting service.
* CEPT is of the view that any possible regulatory action by WRC-23 in the band 470–694 MHz shall not be in conflict with any provision of the GE06 Agreement.
* CEPT supports the continuation and development of the incumbent usage by PMSE (SAB/SAP) (in accordance with existing RR No. **5.296**).
* CEPT supports the protection of the radioastronomy service within the frequency band 606-614 MHz, where required, to ensure its continued operation. CEPT is of the view that any decision on regulatory action(s) in the band 470-694 MHz at the WRC-23 shall consider regulatory action to protect RAS, taking into account RR No. **5.149**.
* CEPT is currently of the view that no changes are necessary concerning RR No. **5.291A** addressing the operation of wind profiler radars.

**7.1.2 CITEL** - **Document APG23-6/**[**INF-52**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-52_CITEL_preparation_for_WRC-23.pdf)

* **Proposal:** NOC for Region 2.
* WRC 23 agenda item 1.5 addresses the spectrum use and spectrum needs of existing services in the frequency band 470-960 MHz in Region 1 and considers possible regulatory actions in the frequency band 470-694 MHz in Region 1 only. Any changes made to the Radio Regulations under WRC 23 agenda item 1.5 must not impact the existing allocations and identifications for Region 2, nor subject Region 2 to any changed procedural or regulatory provisions. Therefore, no change is proposed for Region 2 under agenda item 1.5, and this proposal does not address Region 1 or 3.

**7.1.3 RCC** - **Document APG23-6/**[**INF-45**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-45_Status_of_RCC_preparation_to_WRC-23.pdf)

* The RCC Administrations **oppose changing the regulatory conditions** of using the frequency band 470-694 MHz in Region 1 within this WRC23 agenda item due to the current and future intensive use of this band by incumbent services.
* The RCC Administrations believes that **no regulatory actions are required** in the 694-960 MHz band and no particular actions for study are defined by Resolution **235 (WRC-15)**.
* The RCC Administrations believes that when studying compatibility in the 470-694 MHz range, allocations of this frequency band to services on both a primary and secondary basis should be taken into account.
* **Method A, Alternative A1 or A2 from the CPM Report**

**7.2 International Organisations**

**7.2.1 WMO** - **Document APG23-6/**[**INF-02**](https://www.apt.int/sites/default/files/2023/06/APG23-6-INF-02_WMO_Position_on_WRC-23_Agenda.docx)

* WMO would appreciate the development of a solution to ensure the effective operation of the wind profiler radars in the 470-494 MHz frequency band in accordance with RR **No** **5.291A**.

**7.2.2 ICAO** - **Document APG23-6/**[**INF-25**](https://www.apt.int/sites/default/files/2023/07/APG23-6-INF-25_ICAO-Position_for_ITU-WRC23.docx)

* No impact on aeronautical services has been identified from WRC-23 agenda items 1.5.

**7.2.3 IAFI[[1]](#footnote-1)** - **Document APG23-6/**[**INF-38**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-38_IAFI_Information_spectrum_needs_programme_WRC-23_Agenda_Item_1.5.docx)

* The available spectrum is not sufficient to meet Programme Making & Special Events (PMSE) needs, not only that but also, existing audio PMSE installations are already suffering interference from IMT in different bands. This causes extra costs for PMSE users to mitigate interference and increases challenges for audio PMSE companies to seamlessly enable such large and important events (e.g. Expos, Olympics and Paralympic Games). It is important to consider PMSE usage in this when conducting technical research.

**7.2.4 GSMA Hong Kong**- **Document APG23-6/**[**INF-40**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-40_GSMA_Views_WRC-23_for_mobile.docx)

* Frequencies below 1 GHz can be used to provide increased 5G capacity and performance in rural areas. This helps countries meet social goals, achieve digital parity between urban and rural, as well as helping networks reach deeper in-buildings, cover agricultural areas with IoT and develop transport communications.
* The GSMA supports a primary mobile allocation in the band 470-694 MHz for Region 1. This will allow those countries that wish to do so to identify the band, or parts thereof, for IMT.
* The development of sub 694/8 MHz frequencies for mobile around the world may be of benefit to APT Members, noting the recent agreement of the APT 600 band plan and current 3GPP work on APT 600 NR specifications (5G NR band n105 is defined for APT 600).

**7.2.5 GSA[[2]](#footnote-2)** - **Document APG23-6/**[**INF-47**](https://www.apt.int/sites/default/files/2023/08/APG23-6-INF-47_GSA_PACP_WRC-23_Agenda_Items.docx)

* GSA supports the primary allocation of the band 470-694 MHz to the mobile service and IMT identification within Region 1. Region 3 countries are encouraged to join the existing R3 footnote on IMT identification (RR No. **5.296A**) to take benefits of economies of scale and global harmonized IMT eco-systems.

\_\_\_\_\_\_\_\_\_\_\_\_

1. ITU-APT Foundation of India [↑](#footnote-ref-1)
2. Global mobile Suppliers Association [↑](#footnote-ref-2)