

Most Immediate

October 22, 2021

To,
Shri A K Tiwari
Members Technology
Department of Telecommunications
Sanchar Bhawan New Delhi-110001

To,
Wireless Advisor to the Government of India
WPC Wing
Ministry of Communications
Sanchar Bhawan New Delhi-110001

Subject: National Preparations for ITU World Radio Conference-23- UAE- 13 November 2023 to 19 December 2023

Dear Sir,

World Radio Conference, WRC-23 and allied meetings will take place in UAE from 13 November 2023 to 19 December 2023. Preparations for WRC-23 have been going on since the last WRC-19 concluded in Sharm-El-Sheikh in November 2019.

In Asia Pacific, Common proposals for WRC-23 are being coordinated by the APT Conference Preparatory Group (APG). The 3rd meeting of APG for WRC-23 (APG23-3) will be held from 8 to 13 November 2021 as a virtual meeting and the Last date of receipt of our contributions by the APT Secretariat for APG23-3 is 1 November 2021.

IAFI has been working on the initial drafts of these contributions with industry stakeholder consultations and we have now finalized draft inputs for most of the critical agenda items. We are now submitting these for your kind consideration and sending these to the APT. It is imperative that DOT finalizes these at the earliest and sends these to the APT before the November 1 deadline.

We look forward to an early action on these proposals and we would also like to seek an appointment for a short presentation on these contributions early next week at your convenience.

With warm regards,

Yours truly,

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Draft

Inputs in preparations for APG23-3

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)

APG23-2 Preliminary Views

- Not necessary to apply the pfd criteria in RR. No. 5.441B
- Support the ongoing ITU-R studies for this agenda item

Recommended India preliminary views

WRC-19 approved WRC-23 agenda item 1.1 to review the power flux-density criteria in RR No. **5.441B** in accordance with Resolution **223 (Rev.WRC-19)**, which 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.

Analysis of existing practice shows that Radio Regulations provides protection for aeronautical mobile stations in the international airspace (or outside national territories) only in the frequency bands specifically allocated to aeronautical mobile (R) service, which is safety-of-life service or aeronautical

mobile (or) service. For instance, protection in the international airspace for stations in aeronautical mobile (R) service provisions of Appendix 27 of the Radio Regulations applies and in aeronautical mobile (or) service provisions of Appendix 26 of the Radio Regulations applies. From the analysis of the Radio Regulations, it could be concluded that frequency band 4 800-4 990 MHz is not subject to any frequency allocation plan. As a result, there are no specific provisions to protect aeronautical stations in the Radio Regulations, which would require specific criteria or pfd value. India, therefore, proposes to remove the pfd limit from the RR footnote No. 5.441B.

Following are the preliminary views of India on this agenda item –

- Not necessary to apply the pfd criteria in RR. No. 5.441B
- Support the ongoing ITU-R studies for this agenda item

Agenda Item 1.2

To consider identification of the frequency bands 3 300-3 400 MHz (R1 & R2), 3 600-3 800 MHz (R2), 6 425-7 025 MHz (R1), 7 025-7 125 MHz (globally) and 10.0-10.5 GHz (R2) for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution 245 (WRC-19)

APG23-2 Preliminary Views

- Focus on 7 025-7 125 MHz only
- Support the development of APT Preliminary Views regarding the frequency bands for other Regions
- For frequency bands for R1 and R2 to discuss and consider the impact on existing services in R3 in the same and adjacent frequency bands
- Identification of 10-10.5 GHz in R2 may have a global impact on EESS (active) in 10.0-10.4 GHz

Recommended India preliminary views

- India encourages the coexistence of various services in the frequency bands mentioned in this agenda item. It has been contributing towards these studies in the relevant working parties of ITU-R. India is also of the view that identification of IMT in some of the frequency bands of this agenda item may cause interference to incumbents of primary services in neighbouring regions and hence supports technical studies in this regard. In particular, it

should be ensured that any IMT use of the band 6425-7025 MHz in Region 1 does not harm FSS operations in Region 3.

- India also supports the idea of economies of scale through proper spectrum harmonisation for IMT. It, therefore, will consider the outcome of studies in the frequency band 7 025-7 125 MHz in developing its position on this agenda item for this frequency band.
 - Following are the preliminary views of India on this agenda item -
 - Support the ongoing ITU-R studies for this agenda item
 - Support IMT identification in 7 025-7 125 MHz
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Agenda Item 1.3

To consider a primary allocation of the band 3 600-3 800 MHz to mobile service within Region 1 and take appropriate regulatory actions, in accordance with Resolution 246 (WRC 19)

APG23-2 Preliminary Views

- More desirable to satisfy this agenda item with similar technical and regulatory conditions stated in the lower and upper adjacent frequency bands (e.g. refer to conditions in RR No. 5.430A for 3 400-3 600 MHz)
- Non-overlapping scope of agenda items 1.2 and 1.3 in the dealing with 3 600-3 800 MHz
- Allocation of 3 600-3 800 MHz to the mobile service on a primary basis within R1 should not have any adverse effect on the allocation of the existing services and their future development in R3
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Recommended India preliminary views

- India supports the harmonization of various frequency bands for IMT at a global and regional level. While this agenda item is for allocation of 3 600-3 800 MHz to the mobile service on a primary basis within Region 1, it is essential that necessary technical coexistence studies be carried out in ITU-R in accordance with Resolution 246 (WRC 19). Such an allocation should not adversely affect the incumbents of the existing services and their future development in Region 3.
 - Following are the preliminary views of India on this agenda item –
 - Support the ongoing ITU-R studies for this agenda item
 - Support studies regarding any adverse effect on the existing services and their future development in R3
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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

- 694-960 MHz;
- 1 710-1 885 MHz (1 710-1 815 MHz to be used for uplink only in Region 3);
- 2 500-2 690 MHz (2 500-2 535 MHz to be used for uplink only in Region 3, except 2 655-2 690 MHz in Region 3)

APG23-2 Preliminary Views

- Support ongoing ITU-R studies for establishing a new globally or regionally harmonised regulatory framework for HIBS
- Ensuring protection of the existing services, to which the frequency band is allocated on a primary basis
- Not imposing any additional technical or regulatory constraints in their deployment, including other IMT, uses, existing systems and the planned development of primary services
- No agreement was reached to send LS to AWG

Recommended India preliminary views:

India supports 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 which may be used as a part of terrestrial IMT networks to provide mobile connectivity to underserved communities, mountainous/desert terrain, and rural and remote areas where the deployment of ground-based IMT stations is either not possible or is not cost-effective. India further supports a new globally or regionally harmonised regulatory framework towards this agenda item. India also supports that any such change must ensure the protection of services to which the bands are allocated on a primary basis and should not prioritise HIBS over existing IMT identifications. Accordingly, India supports ongoing ITU-R studies for ensuring the protection of existing services in accordance with Resolution 247 (WRC-19).

Recommended India preliminary views

- While we support ongoing ITU-R studies for establishing a new globally or regionally harmonised regulatory framework for HIBS, studies carried out by India in the band 2500-2690 MHz indicate an impact of the HIBS on MSS, BSS and RDSS. Therefore, India believes that this agenda requires a careful examination with a view to protect these satellite services.
- Ensure protection of existing services, to which these frequency bands are allocated on a primary basis and primary services in the adjacent frequency bands
- Not imposing of any additional technical or regulatory constraints in existing services, including terrestrial IMT stations.

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 based on the review in accordance with Resolution 235 (WRC 15)

APG23-2 Preliminary Views

- View that conclusion to be reached on the agenda item 1.5 is an R1 issue, and WRC-23 decisions shall in no way adversely affect R3 frequency allocations and existing and future use of the relevant frequency band
- Concern about possible interference from R1 future application in mobile service to existing services and applications in R3
- The heavy workload of TG 6/1 with six planned meetings on this agenda item highlighted and the complexity of future discussions of this group on different aspects expected by the meeting

Recommended India preliminary views

- India notes that this agenda item is limited to Region 1 and therefore does not have a position on this agenda item. However, India supports 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, taking into account relevant ITU-R studies, Recommendations and Reports.
- Following are the preliminary views of India on this agenda item –
 - Supports sharing and compatibility studies

Agenda Item 9.1, topic c

To study the use of International Mobile Telecommunication system for fixed wireless broadband in the frequency bands allocated to the fixed services on a primary basis, in accordance with Resolution 175 (WRC-19)

APG23-2 Preliminary Views (Topic c)

- No change to the ITU RR is required under this topic for fixed wireless broadband applications using IMT technology
- ITU-R studies shall take into account the coexistence between the IMT and existing systems in the frequency bands currently allocated to the fixed service - premature to conclude that no change to the RR is required
- Limited time to reconcile the different views

- No consensus was reached to send a liaison statement to AWG

Recommended India preliminary views

India notes that this agenda item is to study the use of IMT systems for fixed wireless broadband in the frequency bands allocated to the fixed service on a primary basis, taking into account the relevant ITU-R studies, Handbooks, Recommendations and Reports. Accordingly India is of the view that agenda item 9.1 topic c) should be addressed by reviewing the existing ITU-R Recommendations/Reports and Handbooks. If required, necessary modifications to implement FWA/FWB systems using IMT technology be made in these existing ITU-R Recommendations/Reports and Handbooks, but there is no need to develop any new regulatory provisions in the Radio Regulations since this is a topic under agenda item 9.1. Working Party (WP) 5A and WP 5C have been assigned as jointly responsible groups for this topic.

- Following are the preliminary views of India on this agenda item –
 - No change to the ITU RR is required under this topic for fixed wireless broadband applications using IMT technology
 - Review the existing ITU-R Recommendations/Reports and Handbooks and make necessary modifications to implement FWA/FWB systems using IMT technology

Agenda Item 1.15

To harmonize the use of the frequency band 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels communicating with geostationary space stations in the fixed-satellite service globally, in accordance with Resolution 172 (WRC-19)

APG23-2 Preliminary Views

- Support on-going studies being carried out by ITU-R WP 4A
- Support ITU-R studies to develop technical conditions and regulatory provisions for the operation of earth stations on aircraft and vessels communicating with GSO space stations in the FSS operating in 12.75-13.25 GHz (Earth-to-space) while ensuring protection to the existing services and those in the adjacent bands
- The operation should not impact the usability of the allotments in the Plan and assignments in the List under Appendix 30B of the RR
- Use of 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels shall not limit the access of other administrations to their national resources in Appendix 30B as well as the implementation of Resolution 170 (WRC 19)

Recommended India preliminary views

- The frequency band 12.75-13.25 GHz (Earth-to-space) is a planned band under Appendix 30B where each country is allotted one orbital slot for national coverage, and the coordination provisions are stringent.
- Four Indian satellites (HTS & bent pipe) are already in-orbit
- As coordination in the NP FSS Ku band has become difficult, interests in Planned bands have increased. But, this has also led to an increased number of ITU filings by the non-Indian satellite operators for Indian coverage
- India is Keenly observing the ongoing studies by ITU-R WP 4A, and support these studies.
- The usability of the allotments in the Plan and assignments in the List under Appendix 30B of the RR should not be impacted by this agenda item
- Any use of the band 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels shall not limit access to Appendix 30B
- Further, provisions may be required to protect NGSO FSS systems.

Agenda Item 1.16

To study and develop technical, operational and regulatory measures, as appropriate, to facilitate the use of the frequency bands 17.7-18.6 GHz and 18.8-19.3 GHz and 19.7-20.2 GHz (space-to-Earth) and 27.5-29.1 GHz and 29.5-30 GHz (Earth-to-space) by non-GSO FSS earth stations in motion, while ensuring due protection of existing services in those frequency bands, in accordance with Resolution 173 (WRC 19)

APG23-2 Preliminary Views

No APG23-2 Preliminary Views but the following was the gist of discussions at the APG23-2:

- Results of ongoing sharing and compatibility studies carried out by WP4A between these bands and the existing services, including passive services allocated in those frequency bands and the adjacent bands, should ensure the protection of these services
- Appropriate examination methods for any measures to be taken by the Bureau for non-GSO ESIM to comply with resolutions dealing with this Agenda Item should be established to ensure the protection of terrestrial services and space services once the result of ITU-R studies are available

Recommended India preliminary views

- India supports studies to develop technical conditions and regulatory framework for the use of the frequency bands 17.7-18.6GHz and 18.8-19.3GHz and 19.7-20.2GHz (space-to-Earth) and 27.5-29.1GHz and 29.5-30GHz (Earth-to-space) by non-GSO FSS earth stations in motion, similar to that of GSO ESIM while ensuring due protection of existing services in those frequency bands.
- Non-GSO ESIM operating in the frequency bands 17.7-18.6 GHz, 18.8-19.3 GHz and 19.7-20.2 GHz (see No. 5.524) shall not claim protection from terrestrial services to which the frequency band is allocated and operating in accordance with the Radio Regulations
- For the protection of space services, non-GSO ESIM characteristics shall remain within the envelope characteristics of typical earth stations associated with the non-GSO satellite system with which these ESIM communicate
- For the protection of GSO FSS networks operating in the 17.8-18.6 GHz, 19.7-20.2 GHz, 27.5-28.6 GHz and 29.5-30.0 GHz, the applicable EPFD limits in Nos. 22.5C, 22.5D and 22.5F shall apply. The methodology included in Recommendation ITU-R S.1503 for determination of compliance with epfd limits in Article 22 applies to ESIMs communicating with non-GSO FSS systems. Depending on the outcome of ITU-R studies, additional provisions may be needed to ensure protection of other systems.
- While an appropriate examination methodology may be established for any measures for NGSO ESIM to comply with Resolutions dealing with this Agenda Item, adequate transitional measures could be developed if the methodology is not finalized by WRC-23.

Agenda Item 1.17

To determine and carry out, based on the ITU-R studies in accordance with Resolution 773 (WRC 19), the appropriate regulatory actions for the provision of inter-satellite links in specific frequency bands, or portions thereof, by adding an inter-satellite service allocation where appropriate

- 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz

APG23-2 Preliminary Views

- Support ITU-R studies on the sharing and compatibility as well as develop technical conditions and regulatory provisions for the use of satellite-to-satellite operations
- The user shall ensure the protection of primary services allocated in the bands and the adjacent bands

Recommended India preliminary views

- India supports ongoing studies under both concepts of operations (i.e. within the cone of coverage and expanded cone) under the current FSS allocations according to the FSS directionality indicators (i.e. Earth-to-space or space-to-Earth), in accordance to Resolution 773 (WRC-19).
- The user shall ensure the protection of primary services allocated in the bands and the adjacent bands

Agenda Item 1.18

To consider studies relating to spectrum needs and potential new allocations to the mobile-satellite service for future development of narrowband mobile-satellite systems, in accordance with Resolution 248 (WRC 19)

- 1 695-1 710 MHz (R1)
- 2 010-2 025 MHz (R1)
- 3 300-3 315 MHz, 3 385-3 400 MHz (R2)

APG23-2 Preliminary Views

- Support the studies at ITU-R for ensuring the protection of primary services, including the protection for IMT systems deployed in the same and adjacent frequency bands for R3, noting that they are Regions 1 & 2 issues
- Existing primary services can continue operations without additional regulatory or technical constraints imposed on the services in any potential decisions made at WRC-23 regarding agenda item 1.18

Recommended India preliminary views

- Support the studies at ITU-R for ensuring the protection of primary services, including the protection for IMT systems deployed in the same and adjacent frequency bands for R3, noting that they are Regions 1 & 2 issues
 - Development of existing and new IMT systems in R3 should not be constrained in any way by any potential decisions made at WRC-23 regarding agenda item 1.18
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Agenda Item 1.19

To consider a new primary allocation to the fixed-satellite service in the space-to-Earth direction in the frequency band 17.3-17.7 GHz in Region 2, while protecting existing primary services in the band, in accordance with Resolution 174 (WRC 19)

APG23-2 Preliminary Views

- Any studies at ITU-R related to Agenda Item 1.19 need to ensure the protection of the services to which the bands are allocated in the same and adjacent bands

Recommended India preliminary views

- Any ITU-R studies related to Agenda Item 1.19 need to protect existing and future systems in the primary services to which the band is allocated in the same and adjacent frequency bands in R3.

- Existing and new systems in the services to which the band is allocated on a primary basis in R3 should not be constrained in any way by any potential decisions made at WRC-23 regarding agenda item 1.19

Agenda Item 7

To consider possible changes, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, on advance publication, coordination, notification and recording procedures for frequency assignments on satellite networks, in accordance with Resolution 86 (Rev.WRC-07), to facilitate the rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit

The agreed Topics under WRC-23 Agenda item 7 are:

Topic A: Tolerances for Certain Orbital Characteristics of Non-GSO Space Stations in the FSS, BSS and MSS

APG23-2 Preliminary Views

- Development of the definition of tolerances of non-GSO space stations should account for potential differences between the notified and deployed orbital characteristics
- Appropriate regulatory measures should be developed with due consideration of operational aspects for non-GSO space stations if the operations are beyond the specified allowable tolerances

Recommended India preliminary views

- Non-GSO space stations tolerances should take account for potential differences between the notified and deployed orbital characteristics including recognizing the need for some separation between orbital planes of a given NGSO system to minimize the possibility of collisions.
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Topic B: Post-milestone reporting procedure for non-GSO systems

APG23-2 Preliminary Views

- Studies for developing final post-milestone procedures at WRC-23 need to take into account the reporting procedure defined in resolves 19 of Resolution 35 (WRC-19)
- When developing the post-milestone procedures, some operational flexibility that is necessary for the maintenance of the non-GSO system may need to be duly considered

Recommended India preliminary views

- Post-milestone procedures for NGSO to be finalized by the WRC-23 should take into account resolves 19 of Resolution 35 (WRC-19)
 - Necessary operational flexibility for the maintenance of the non-GSO system should be duly considered
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Topic C: 7/8 & 20/30 GHz GSO MSS protection

APG23-2 Preliminary Views

- Any regulatory solutions to be developed should include technical criteria to quantify the protection of GSO satellite networks operating in the MSS in the bands 7/8 GHz and 20/30 GHz from emissions of non-GSO satellite networks in the same bands and the same direction
- Consideration of the application of No. 22.2 of the RR for MSS in the band 20/30 GHz should be pursued
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Recommended India preliminary views

- Support on-going ITU-R studies on improved procedures under Appendix 30B of the RR
 - Any regulatory solutions to be developed should include technical criteria to quantify the protection of GSO satellite networks operating in the MSS in the bands 7/8 GHz and 20/30 GHz from emissions of non-GSO satellite networks in the same bands and the same direction
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Topic D: Mod to App 1 to Annex 4 of AP30B

APG23-2 Preliminary Views

- Error in the C/I equation is only in the English version of the 2020 edition of the RR and will be dealt with under WRC-23 Agenda Item 9.2
- Support on-going ITU-R studies on the modifications to Appendix 1 to Annex 4 of Appendix 30B of the RR

Recommended India preliminary views

- Support on-going ITU-R studies on the modifications to Appendix 1 to Annex 4 of Appendix 30B of the RR
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Topic E: Improved procedures under RR Appendix 30B for the new ITU Member States

APG23-2 Preliminary Views

- Support on-going ITU-R studies on improved procedures under Appendix 30B of the RR

Recommended India preliminary views

- Support on-going ITU-R studies on improved procedures under Appendix 30B of the RR
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