

**Government of India**  
**Ministry of Communications**  
**Department of Telecommunications**  
**Wireless Planning and Coordination Wing, New Delhi-110001**

R-11012/05/2021-Conf

Dated 06.02.2023

**Subject:** Minutes of Meeting of National Preparatory Committee (NPC) for WRC 2023 held on 30.01.2023 & 03.02.2023.

A meeting of NPC for WRC-23 was held under the Chairmanship of Shri. V.J. Christopher, Wireless Adviser, WPC Wing at Sanchar Bhawan, New Delhi on 30<sup>th</sup> January, 2023 at 1430 Hrs to finalize India preliminary views on the WRC-23 Agenda Items, based on the draft preliminary views agreed at the level of its five Working Groups. List of participants is placed at **Annexure-I**.

NPC WGs	Chairmen (Name, Designation, Email)	Topics (WRC 2023 Agenda Items)
WG-1	Sh. MPS Alawa, Sr. DWA <a href="mailto:ms.alawa@nic.in">ms.alawa@nic.in</a>	Fixed, Mobile & Broadcasting issues (1.1, 1.2, 1.3, 1.4, 1.5, 9.1 (c), Article 21.5)
WG-2	Smt. M. Revathi, JWA <a href="mailto:m.revathi@nic.in">m.revathi@nic.in</a>	Aeronautical and maritime issues (1.6, 1.7, 1.8, 1.9, 1.10, 1.11)
WG-3	Sh. Ajay Singhal, Sr.DD <a href="mailto:singhal.ajay@nic.in">singhal.ajay@nic.in</a>	Science issues (1.12, 1.13, 1.14, 9.1(a) and 9.1 (d))
WG-4	Sh. M.K. Pattanaik, Sr. DWA <a href="mailto:pattanaik.mr@gov.in">pattanaik.mr@gov.in</a>	Satellite issues (1.15, 1.16, 1.17, 1.18, 1.19, 7)
WG-5	Sh. Anil K. Soni, Sr. DD <a href="mailto:anilk.soni@nic.in">anilk.soni@nic.in</a>	General issues (2, 4, 8, 9.1 (b) and 10)

2. Shri. V.J. Christopher, Wireless Adviser and NPC Chairman welcomed all the participants and apprised them of the draft preliminary views, prepared and forwarded by the Working Groups of the NPC on the respective Agenda Items of WRC-23, to be discussed and finalized for submission as India preliminary views for the APG23-5 meeting.

3. A holistic discussions on the draft preliminary views, prepared by the NPC Working Group Chairmen, were carried out on the WRC-23 Agenda Items with the concerned stakeholders during the NPC meeting. All the comments/ suggestions of the stakeholders were noted and deliberated upon in detail during the meeting. Based on the discussions and with consensus, India preliminary views were finalized. Working Group wise views on the respective WRC-23 agenda items are placed at **Annexure-II**.

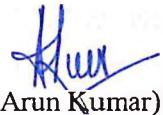
4. As discussions on contribution document proposed by 5G India Forum (one of the three contribution documents on WRC-23 Agenda item 10), resulted in diverging views and other two documents could not be discussed in the meeting, due to paucity of time, the Chairman decided to form a Sub-Working Group under Sh. M.K. Pattanaik, Sr. DWA, WPC Wing to discuss the document from 5G India Forum and referred the other two documents (proposed by IAFI) to Working Group-5 for further discussions.

5. The above documents upon discussions at the Sub-Working Group/Working Group-5 level were submitted to NPC for its consideration.

6. To discuss these documents, another meeting of NPC for WRC-23 was held on 03<sup>rd</sup> February 2023 at 14:00 virtually. The meeting discussed the above three documents. Based on the discussions, the meeting agreed for submission of two documents proposed by IAFI to APG23-5. With regard to the document proposed by 5G India Forum, due to diverging views of the stakeholders, no consensus could be achieved for the submission of the document to APG23-5. Therefore, the NPC Chairman suggested that this document would be further discussed with higher authority within the DoT and accordingly decision would be taken on its submission. The meeting agreed to the suggestions of the NPC Chairman.

7. Meeting appreciated the work done so far by the NPC Working Groups for coordination with the stakeholders for preparing Indian contributions w.r.t. APG-23-5.

Meeting ended with vote of thanks.



(Arun Kumar)

Assistant Wireless Adviser  
International Spectrum Regulation Group  
WPC Wing, DoT

To: All participants

Copy to:

1. Sr. PPS to Secretary (T)
2. Sr. PPS to Member(T)
2. Wireless Adviser, WPC Wing

Working Group 1: Fixed, Mobile and Broadcasting issues

Agenda Item 1.1

*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 No. 5.441B in accordance with Resolution 223 (Rev.WRC 19);*

**Discussions:** There was no draft Preliminary View at the WG-1 level. However, two contributions documents proposing changes to CPM text were submitted for consideration of the NPC. Based on the discussions, NPC was of the view that as India position w.r.t. this Agenda item is not finalized yet, it may not be in the best interest to forward those documents to APG23-5.

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);*

This agenda item considers identification for International Mobile Telecommunications (IMT) including possible additional allocations to the mobile service on a primary basis for certain frequency bands, in accordance with Resolution 245 (WRC-19):

- a. 3 300-3 400 MHz (amend footnote in Region 1)
- b. 3 300-3 400 MHz (Region 2)
- c. 3 600-3 800 MHz (Region 2)
- d. 6 425-7 025 MHz (Region 1)
- e. 7 025-7 125 MHz (globally)
- f. 10.0-10.5 GHz (Region 2)

Only 7025 – 7125 MHz is being studied for IMT identification in Region 3.

**Discussions:** The draft Preliminary View (PV) agreed at the WG-1 level was discussed in the meeting. The meeting agreed to supports the IMT identification in bands 3300-3400 (Region 1 and Region 2) as it would lead towards global harmonization of band bringing in economies of scale.

With regard to frequency bands 6425-7025(Region 1) & 7025-7125 MHz(globally), some stakeholders were of the view that as the Committee constituted by DoT is studying the 6 GHz band (5925-7125 MHz), any Preliminary India views should be formulated after this Committee finalizes its report/recommendations. While some other stakeholders were of the view that India should support the identification of band 7025-7125 MHz for IMT. This was further deliberated and the meeting agreed to support Method 5B i.e. identification of the frequency band 7 025-7 125 MHz for IMT without any conditions.

## Preliminary Views

- 3 300-3 400 MHz (amend footnote in Region 1, and Region 2);  
India has identified 3 300 – 3 670 MHz for IMT usages while providing geographical separation to existing radiocommunications services in band 3 400 – 3 425 MHz at few locations and by shifting few in-band assignments.

India supports the band for IMT identification as it would lead towards global harmonization of band, bringing in economies of scale; subject to ensuring protection to services in adjacent band based upon studies.

Considering above India supports following methods with a view that any actions being decided at WRC-23 shall not affect existing primary services operating in the same frequency bands in Region 3

Band 1 – 3 300-3 400 MHz (amend footnote in Region 1):

Method 1D: Primary allocation to the mobile (except aeronautical mobile) service in the frequency band 3 300-3 400 MHz in interested Region 1 countries and identification of IMT.

Band 2 – 3 300-3 400 MHz (Region 2)

Method 2C: Allocation of the frequency band 3 300-3 400 MHz to the mobile (except aeronautical) service on a primary basis and identification of IMT in Region 2.

Band 5 - 7 025-7 125 MHz (globally)

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

### **Agenda Item 1.3:**

*to consider 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);*

**Discussions:** In Region 1, frequency band 3600-4200 MHz has allocation for mobile service on secondary basis. This agenda item considers the possible upgrade of the allocation of the frequency band 3600-3800 MHz to mobile service on a primary service within Region 1. The draft Preliminary view (PV) agreed at WG-1 level on this agenda item was discussed during the meeting and it was agreed that the PV may be submitted to APG23-5.

### **Preliminary View:**

India supports the upgrading of the allocation of the frequency band 3 600-3 800 MHz to the mobile, except aeronautical mobile service on a primary basis in Region 1 based on the sharing and compatibility studies as per Resolution 246 (Rev.WRC-19) while ensuring protection to the existing and planned satellite usages in the band in Region 3.

### **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;*

**Discussions:** The draft Preliminary view (PV) agreed at WG-1 level on this agenda item was discussed during the meeting and it was agreed that the PV may be submitted to APG23-5. The frequency band 2483.5-2500 MHz is used in NavIC users receivers and frequency bands 2500-2535 MHz, 2555-2635 MHz and 2655-2690 MHz are used in S-band MSS satellites of India. The S-band

MSS satellites are currently experiencing interference in the band 2655-2690 MHz. No change to Radio Regulations is proposed for the frequency band 2500-2690 MHz.

#### **Preliminary View:**

While considering the feasibility of HIBS in the IMT bands below 2.7 GHz, India supports technical and regulatory provision for the protection of existing and planned satellite services in the band 2500-2690 MHz and in the adjacent band 2483.5 -2500 MHz. The frequency bands 2483.5-2500 MHz is used in NavIC users receivers; and frequency bands 2500-2535MHz, 2555-2635MHz and 2655-2690 MHz used in S-band MSS satellites of India and currently experiencing interference into the satellite receivers.

In addition, India supports technical and regulatory provisions required for protection of existing and planned IMT services in the proposed bands below 2.7 GHz

In view of above usages, India may support following Method

– Band A - 694-960 MHz

Method A3: Use by HIBS in single footnote not claiming protection

– Band B - 1 710-1 885 MHz

Method B3: Use by HIBS in single footnote not claiming protection

– Band C - 1 885-1 980 MHz, 2 010-2 025 MHz, and 2 110-2 170 MHz

Method C3: Use by HIBS in single footnote not claiming protection

– Band D - 2 500-2 690 MHz

Method D1: No change to the Radio Regulations (RR)

#### **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);*

**Discussions:** This agenda items considers 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. The draft Preliminary view (PV) agreed at WG-1 level on this agenda item was discussed during the meeting and it was agreed that the PV may be submitted to APG23-5.

#### **Preliminary Views**

India 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.

India 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.

#### **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 primary basis, in accordance with Resolution 175 (WRC-19);*

**Discussions:** Resolution 175 (WRC-19) invites the ITU Radiocommunication Sector to conduct any necessary studies on the use of IMT systems for fixed wireless broadband in the frequency bands allocated to the fixed service on primary basis, taking into account the relevant ITU-R studies, Handbooks, Recommendations and Reports. Two approaches are proposed: Approach 1 - Proceed with development of new ITU-R Recommendation(s), Report(s) and Handbook and Approach 2 - Proceed with the revision of Recommendation(s), Report(s) and Handbook. The draft Preliminary view (PV) agreed at WG-1 level on this agenda item was discussed during the meeting and it was agreed that the PV may be submitted to APG23-5.

#### **Preliminary Views**

India supports discussing modification of the existing ITU-R Recommendations, Reports and/or Handbooks and, if required, development of new ITU-R deliverable(s), in response to the on-going studies in ITU-R. The IMT systems for fixed wireless broadband shall not impose restrictions or shall not cause interference to other radiocommunications services.

India proposes that a new ITU-R Question may be developed, if necessary, to progress the work on existing or new ITU-R Reports, Recommendations and Handbook relating to this issue.

#### **RR No. 21.5**

*ITU-R is invited to study, as a matter of urgency, the applicability of the limit specified in No. 21.5 of the Radio Regulations to IMT stations, that use an antenna that consists of an array of active elements, with a view to recommend ways for its possible replacement or revision for such stations, as well as any necessary updates to Table 21-2 related to terrestrial and space services sharing frequency bands.*

*Furthermore, the ITU-R is invited to study, as a matter of urgency, verification of No. 21.5 regarding the notification of IMT stations that use an antenna that consists of an array of active elements, as appropriate.*

**Discussions:** The draft Preliminary view (PV) agreed at WG-1 level on this topic was discussed during the meeting and it was agreed that the PV may be submitted to APG23-5.

#### **Preliminary Views**

India supports the ongoing work at the ITU-R Working Party 5D for approaches which will ensure appropriate protection to satellite services and give opportunities for IMT growth and innovation in active antenna system.

## Working Group 2: Aeronautical and maritime issues

### Agenda Item 1.6 & 1.8

#### *Agenda Item 1.6*

*to consider, in accordance with Resolution 772 (WRC-19), regulatory provisions to facilitate radiocommunications for sub-orbital vehicles*

#### *Agenda Item 1.8*

*to consider, on the basis of ITU R studies in accordance with Resolution 171 (WRC-19), appropriate regulatory actions, with a view to reviewing and, if necessary, revising Resolution 155 (Rev.WRC-19) and No. 5.484B to accommodate the use of fixed-satellite service (FSS) networks by control and non-payload communications of unmanned aircraft systems;*

No draft Preliminary Views were received from WG-2 level for consideration of the NPC as these agenda items requires further deliberations at the Working group level.

### Agenda Item 1.7

*to consider a new aeronautical mobile-satellite (R) service (AMS(R)S) allocation in accordance with Resolution 428 (WRC-19) for both the Earth-to-space and space-to-Earth directions of aeronautical VHF communications in all or part of the frequency band 117.975-137 MHz, while preventing any undue constraints on existing VHF systems operating in the AM(R)S, the ARNS, and in adjacent frequency bands*

**Discussions:** The draft Preliminary view (PV) agreed at WG-2 level on this agenda item was discussed in the meeting. Deliberations were held on the support for the methods to satisfy the Agenda item. One of the stakeholder was of the view that Method B1 (pfd/guard band) should be supported as it will relive the satellite operator from the coordination complexities while some stakeholders were of the view that Method B2 (coordination requirements) will ensure the protection for existing services. One of the stakeholder was of the view that we should remain silent on Method. Based on the discussion, the meeting agreed to support Method B2 at this stage.

#### **Preliminary View:**

India supports a new co-primary allocation for the AMS (R)S in the band 117.975 MHz-137 MHz in the Earth-to-space and space-to-Earth directions limited to internationally standardized aeronautical systems operating in accordance with ICAO Standards and Recommended Practices (SARPs), while ensuring protection and not constraining the systems of the incumbent services in the band and adjacent bands. India also supports Method B2 for satisfying this Agenda Item.

### Agenda Item 1.9

*to review Appendix 27 of the Radio Regulations and consider appropriate regulatory actions and updates based on ITU R studies, in order to accommodate digital technologies for commercial aviation safety-of-life applications in existing HF bands allocated to the aeronautical mobile (R) service and ensure coexistence of current HF systems alongside modernized HF systems, in accordance with Resolution 429 (WRC 19)*

**Discussions:** The draft Preliminary view (PV) agreed at Working group 2 level was deliberated in the meeting and it was unanimously agreed that India would support inclusion of the relevant part of the

Rules of Procedure relating to RR Appendix 27 into the Radio Regulations and the introduction into RR Appendix 27 of other provisions related to wideband digital communications i.e. the use of multiple contiguous and/or non-contiguous 3 kHz channels simultaneously.

#### **Preliminary views**

India supports the proposed changes to Appendix 27 of Radio Regulations to allow new modern/digital wideband HF communication systems using contiguous and/or non-contiguous 3 kHz channels coexisting with current HF voice and data systems. India supports Method B to satisfy this Agenda Item.

#### **Agenda Item 1.10**

*to conduct studies on spectrum needs, coexistence with radiocommunication services and regulatory measures for possible new allocations for the aeronautical mobile service for the use of non-safety aeronautical mobile applications, in accordance with Resolution 430 (WRC 19);*

**Discussions:** The draft Preliminary View agreed at Working Group Level was discussed during the meeting and it was decided that India should support No change to the Radio Regulations for this agenda item.

#### **Preliminary views**

India supports NOC for this Agenda Item.

#### **Agenda Item 1.11:**

*to consider possible regulatory actions to support the modernization of the Global Maritime Distress and Safety System and the implementation of e-navigation, in accordance with Resolution 361 (Rev.WRC-19);*

**Discussions:** This Agenda Item considers possible regulatory actions in support of the

1. Modernization of the global maritime distress and safety system (GMDSS):
  - The deletion of narrow-band direct-printing (NBDP) for distress and safety communication from GMDSS
  - Introduction of a new automatic connection system (ACS)
  - Introduction of the NAVDAT frequencies in MF and HF
  - To implement automatic identification system search and rescue transmitter (AIS SART) as locating equipment for which frequencies are protected by reference in RR Appendix 15.
2. E-navigation: the objectives of e-navigation are the improvements of communications in general, the standardization and automation of ship's reporting and the integration and presentation of available information in graphical displays received via communication equipment. Future communication systems should be digital and could include VDES and in the future NAVDAT and be developed to facilitate wide information management solutions.
3. Introduction of additional satellite systems into the global maritime distress and safety system  
Two satellite systems have been providing safety communication in the GMDSS. IMO is considering introducing an additional GSO MSS system for GMDSS which may require new or modified regulatory provisions, based on the results of the ITU-R studies.



The draft Preliminary View agreed at WG-2 level was discussed in the meeting and it was agreed to forward the preliminary view for Issue A and Issue B. Regarding Issue C - Introduction of additional satellite systems into GMDSS, it was decided that this issue needs further deliberations for formulating a view.

### **Preliminary Views**

Issue A: Global Maritime Distress and Safety System modernization: India supports modernization of GMDSS and supports the unique method which proposes to update the RR Appendices in line with IMO updates and practical usages.

Issue B: e-navigation: India supports the only method to satisfy this Agenda Item that no additional allocation is necessary in RR Article 5 for e-navigation. Therefore, it is proposed a no change to RR Article 5.

### **Working Group 3: Science Issues**

#### **Agenda Item 1.12:**

*to conduct, and complete in time for WRC-23, studies for a possible new secondary allocation to the Earth exploration-satellite (active) service for spaceborne radar sounders within the range of frequencies around 45 MHz, taking into account the protection of incumbent services, including in adjacent bands, in accordance with Resolution 656 (Rev.WRC-19);*

**Discussions:** The draft Preliminary view (PV) agreed at WG-2 level on this agenda item was discussed in the meeting. With some editorial corrections, it was agreed that the PV may be submitted to APG23-5.

#### **Preliminary Views**

As the current sharing and compatibility studies have not fully demonstrated that incumbent services could be protected from potential harmful interference from the operation of spaceborne radar sounders in the frequency band 40-50 MHz, India supports Method D which proposes “No Change” to Radio Regulations.

#### **Agenda Item 1.13:**

*to consider a possible upgrade of the allocation of the frequency band 14.8-15.35 GHz to the space research service, in accordance with Resolution 661 (WRC-19);*

**Discussions:** The draft Preliminary view (PV) agreed at WG-2 level on this agenda item was discussed in the meeting. With some editorial corrections, it was agreed that the PV may be submitted to APG23-5.

#### **Preliminary Views**

India supports Method A which proposes “No Change” to Radio Regulations.

#### **Agenda Item 1.14**

*to review and consider possible adjustments of the existing or possible new primary frequency allocations to Earth exploration-satellite service (EESS) (passive) in the frequency range 231.5-252 GHz, to ensure alignment with more up-to-date remote-sensing observation requirements, in accordance with Resolution 662 (WRC-19);*

**Discussions:** The draft Preliminary view (PV) agreed at WG-2 level on this agenda item was discussed in the meeting. The text was refined in the meeting and it was agreed that the PV may be submitted to APG23-5.

#### **Preliminary Views**

India supports the consideration of possible adjustments of the existing or new primary frequency allocations to EESS (passive) in the frequency range 231.5-252 GHz in accordance with Resolution 662 (WRC-19). Therefore, India supports Method B which proposes addition of new primary allocations to the EESS (passive) in the frequency bands 239.2-242.2 GHz and 244.2-247.2 GHz, and shifting of the existing FS and MS allocations to the frequency band 235-238 GHz.

**Agenda Item 9.1 Topic a:**

*In accordance with Resolution 657 (Rev. WRC-19), review the results of studies relating to the technical and operational characteristics, spectrum requirements and appropriate radio service designations for space weather sensors with a view to describing appropriate recognition and protection in the Radio Regulations without placing additional constraints on incumbent services;*

**Discussions:** The draft Preliminary views agreed at WG-3 level was discussed during the meeting and it was agreed that since the ITU-R studies have not been completed at this stage, it may not be necessary to send any view on the agenda item.

**Preliminary Views:** No PV

**Agenda Item 9.1 Topic d:**

*Protection of Earth exploration-satellite service (EESS) (passive) in the frequency band 36-37 GHz from non-GSO FSS space stations;*

**Discussions:** The draft Preliminary view agreed at WG-3 level was discussed during the meeting. One of the stakeholders opined that ITU-R Working Party 7C is dealing with Earth Exploration Satellite services and any views on this topic under Agenda 9.1(d) may be formulated after WP7C meeting.

**Preliminary Views:** No PV.

## Working Group 4: Satellite Issues

### 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);*

**Discussions:** This agenda item 1.15 considers studies on the possible operation of A-ESIM and M-ESIM communicating with geostationary space stations in the fixed-satellite service in the frequency band 12.75-13.25 GHz (Earth-to-space). The use of the frequency band 12.75-13.25 GHz by geostationary-satellite networks in the fixed-satellite service is subject to RR Appendix 30B, which contains a worldwide fixed-satellite service allotment Plan and assignments in the List and has its own regulatory procedures and technical criteria.

WG4 suggested no changes to RR w.r.t. Agenda Item 1.15. This was discussed during the meeting and it was agreed that we may support no change to RR as Preliminary view considering that 12.75-13.25 is AP30B Planned band and that around 2 GHz of spectrum is being studied for use of by ESIMs communication for non-GSO satellite systems. Views were expressed that coordination in non-planned Ku bands is difficult and complex and the only opportunity exists in the Planned Ku bands where there is priority for National use, so allowing ESIMs in the planned band may degrade the 'reference situation' for AP30B bands thereby affecting the use of these Plan band for national use.

#### **Preliminary Views:**

India supports Method A

No changes to the Radio Regulations and suppression of Resolution 172 (WRC-19).

### 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);*

**Discussions:** This agenda item 1.16 considers the use of the frequency bands 17.7-18.6 GHz, 18.8-19.3 GHz, 19.7-20.2 GHz (space-to-Earth), 27.5-29.1 GHz and 29.5-30 GHz (Earth-to-space) by earth stations in motion communicating with non-geostationary (non-GSO) space stations in the fixed-satellite service (FSS).

The Draft PV forwarded by WG 4 was discussed and reviewed by NPC. Concerns were raised by some stakeholders on the protection of 27.5-28.5 GHz frequency band that has been identified for IMT. It was mentioned that the coexistence of satellite & terrestrial services in the frequency and can be ensured by adopting various measures at the national level. So, the meeting agreed to send PV supporting Method B.

#### **Preliminary Views:**

India Supports Method B: add a new footnote in RR Article 5 that refers to a new WRC Resolution with technical, operational and regulatory conditions for the operation of non-GSO maritime and

aeronautical ESIMs while ensuring protection of allocated services, and consequential suppression of Resolution 173 (WRC-19)

**Agenda Item 1.17**

*to determine and carry out, on the basis of 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;*

**Discussions:** This Agenda Item considers the use of the potential frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz and 18.8-20.2 GHz (space-to-Earth) and 27.5-30 GHz (Earth-to-space), or parts thereof, for transmissions between space stations, while ensuring compatibility with, and imposing no additional regulatory or technical constraints on, services to which the frequency bands are currently allocated on a primary basis and services using adjacent frequency bands allocated on a primary basis  
In the draft CPM text, Six Methods are identified to satisfy the agenda item, Methods B1 to B4 contain several options.

Method	B1	B2	B3	B4	B5	A
Service Type Allocation	FSS(S-S)	ISS	FSS(S-S)	ISS	Identical to B1 but w/o F1	NOC
Concept of Operations	Within cone	Within cone	Expanded cone	Expanded cone		

Five different items were identified for which several options were proposed.

1. Frequency bands:

F1 (GHz)	F2 (GHz)	F3 (GHz)	F4 (GHz)	F5 (GHz)
11.7-12.7	18.1-18.6, 18.8-19.3, 19.7-20.2	19.3-19.7	27.5-29.1, 29.5-30	29.1-29.5

2. Non-GSO FSS sharing mechanisms:

N1	N2
RR No. 9.12	Hard Limit

3. GSO FSS sharing mechanisms:

G1	G2
With envelope of typical earth station	Hard Limit

4. EESS protection:

EESS1	EESS2
Out-of-band pfd limit	No specific mechanism required

5. NCMC mechanism:

NCMC1	NCMC2
Through a monitoring centre	No specific mechanism required

The draft Preliminary View (PV) forwarded by WG 4 was discussed and reviewed by NPC. The PV proposed to support Method B to enable the operation of satellite-to-satellite link in frequency bands except F1. This was discussed in the meeting and some stakeholders opined that while choosing to opt out F1, the only option left is Method B5. However, some stakeholders suggested that Method B5 is not an independent and standalone method, and one of the methods B1 to B4 need to be supported. The meeting deliberated the issue and decided that at this stage, we may support method B5 and continue to examine the other methods to be supported along with Method B5.

**Preliminary Views**

India supports Method B5 in the draft CPM Text to enable the operation of satellite-to-satellite links and the development of regulatory framework and technical conditions to ensure protection of

incumbent services in the relevant frequency bands and in the adjacent frequency bands without imposing any new constraints as currently provided in the RR in the frequency bands as under:

F2	F3	F4	F5
18.1-18.6, 18.8-19.3, 19.7-20.2 GHz (service provider-to-user)	19.3-19.7 GHz (service provider-to-user)	27.5-29.1, 29.5-30 GHz (user-to-service provider)	29.1-29.5 GHz (user-to-service provider)

India also proposes following regulatory measures:

- i. the protection of NGSO FSS using a set of hard limits and accordingly support option N2.
- ii. the protection of GSO FSS within the envelop of typical Earth Stations and accordingly support option G1.
- iii. the satellite-to-satellite operations use the “within the cone” concept.

### **Agenda Item 1.18 & 1.19**

#### **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);*

#### **Agenda Item 1.19**

*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);*

**Discussions:** These agenda items were discussed and reviewed during the meeting and it was agreed to remain silent on these Agenda items as these are related to Region 1 & Region 2. It was also discussed that India can use these Agenda Items as leverage, if opportunity arises.

**Preliminary View:** No PV on Agenda Items 1.18 & 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 pertaining to satellite networks, in accordance with Resolution 86 (Rev. WRC-07), in order to facilitate the rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit;*

#### Topics-Content

- A Non-GSO Orbital tolerances
- B Post-milestone reporting
- C 7/8 & 20/30 GHz GSO MSS protection
- D D1 Mod to App 1 to Annex 4 of RR AP30B
- D2 New AP4 parameters for Rec. S.1503 updates
- D3 BR reminders for BIU/BBIU
- E AP30B Improved procedures for new Member States

- F Excluding uplink service area in AP30A for R1&3 and AP30B
- G Amendments to Res. 770 (WRC-19)
- H Enhanced protection of AP30/30A in R1&3 and AP30B
- I Special agreements under AP30B
- J MODs to Res. 76 (Rev.WRC-15)
- K MODs to Res. 553 (Rev.WRC-15)
- L TT&C for non-GSO in-orbit servicing

**Discussions:** The Committee members discussed and reviewed the PV agreed upon at Working Group 4 level on Agenda Items 7 Topic A, B, D2, D3. The draft preliminary views on topic B, D2 & D3 were discussed and agreed in the meeting. For topic A, one of the stakeholders opined that we may not provide any method/value for the tolerances at this stage and proposed an alternate text as the Preliminary View for topic A. No stakeholders' inputs/ views were received on 10 of the other topics under these Agenda items at WG4 level. Agenda item is regulatory in nature and the other 10 topics need to be further examined w.r.t. various modifications/ amendment proposed to RR. It was suggested that at this stage, we may continue to monitor progress on these Agenda items.

#### **Topic A; Tolerances for certain orbital characteristics of non-GSO space stations in the FSS, BSS or MSS**

##### **Preliminary Views**

India supports the method that provides adequate tolerance to accommodate other NGSO systems in similar altitudes to ensure efficient sharing of orbital resources and the tolerance should be just adequate for operators to safely fly their satellites on a day-to-day basis. Noting that this tolerance is only for determining whether an operator is operating satellites within its ITU filing parameters, and sufficient ITU filing tolerance is required to enable accommodation of additional systems on an operational basis.

#### **Topic B: Non-GSO bringing into use post-milestone procedure**

##### **Preliminary Views:**

India recommends that this issue may be postponed until WRC-27. This issue may be addressed after experience is gained with the Resolution 35 milestone process

#### **Topic D – Topics for which consensus was achieved in ITU-R**

##### **Topic D2 – Inclusion of new Appendix 4 Parameters from S.1503 updates**

##### **Preliminary Views:**

India supports the modification to Recommendation ITU-R S.1503 to improve the modelling of NGSO systems while ensuring that Article 22 EPFD limits are met to protect GSO systems.

##### **Topic D3-BR reminders for BIU/BBIU**

##### **Preliminary Views:**

India supports additional reminders from the BR to support administrations in maintaining their ITU filings.

##### **Topic J – Modifications to Resolution 76 (Rev.WRC-15)**

**Discussions:** Further discussions are needed at the national level on this issue, particularly if we should follow RES609 pattern where both operational and planned systems are involved in the consultation meetings or limit such consultations to the existing systems only. Permitting planned systems in these discussions will help the late entrant also to assess the feasibility of coordination/co-

existence/compliance to Art.22. RES609 also states that when the limit is exceeded actual operational systems can be considered for evaluating the aggregate pfd of all NGSO systems.

**Preliminary View:** No PV.



## **Working Group 5: General Issues**

### **Agenda Item 2:**

*to examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with further resolves of Resolution 27 (Rev.WRC-19), and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in resolves of that Resolution;*

This is a standing agenda item in every WRC and its main purpose is to examine revised ITU-R Recommendations to determine their suitability for incorporation by reference in RR, contained in Volume-IV.

#### **Preliminary Views**

India supports the examination and review of ITU-R Recommendations incorporated by reference in the Radio Regulations and, where appropriate, the updating of these references in accordance with Resolution 27 (Rev.WRC-19).

### **Agenda Item 4:**

*in accordance with Resolution 95 (Rev.WRC-19), to review the Resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation;*

This is a standing agenda item in every WRC and its main purpose is to review the Resolutions and Recommendations of previous conferences in RR Volume-III, Edition 2020. WRC-23 shall determine whether there is a need for any modification or suppression of the concerned Resolutions or Recommendations from previous WRCs in accordance with Resolution 95 (Rev.WRC-19).

#### **Preliminary Views**

India supports the review of the Resolutions and Recommendations of previous conferences, in accordance with Resolution 95 (Rev.WRC 19), with a view to keep them relevant and up to date.

### **Agenda Item 9.1 (Topic b):**

*to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention;*

*9.1 on the activities of the Radiocommunication Sector since WRC 19:*

*b) Review of the amateur service and the amateur-satellite service allocations in the frequency band 1 240 1 300 MHz to determine if additional measures are required to ensure protection of the radionavigation-satellite (space-to-Earth) service operating in the same band in accordance with Resolution 774 (WRC 19);*

In the RR, the frequency band 1240 – 1300 MHz is globally allocated to the radio navigation satellite service (Space-to-Earth) on a primary basis and the amateur service on a secondary basis. The portion 1260 – 1270 MHz is also allocated to the amateur satellite service on a secondary basis by footnote 5.282.

#### **Preliminary Views**

India supports ongoing work in ITU-R in line with Resolution 774(WRC-19) to ensure the protection of RNSS (space-to-Earth) receivers from the amateur and amateur-satellite services in the frequency band

1240-1300MHz and supports continued use of this frequency band for amateur and amateur satellite service as secondary service.

**Agenda Item 10:**

*to recommend to the ITU Council items for inclusion in the agenda for the next world radiocommunication conference, and items for the preliminary agenda of future conferences, in accordance with Article 7 of the ITU Convention and Resolution 804 (Rev.WRC-19)*

**Discussions:** This is standing agenda item in WRC under which proposals for finalising agenda items for WRC-2027 are decided.

WG-5 forwarded **three contribution documents** on AG 10 ( 01 by 5G India Forum and 02 by ITU APT Foundation of India).

1. Identification of frequency bands for IMT in portion(s) of the frequency ranges 7.125-24 GHz and 92-275 GHz including possible additional allocations to the mobile service on a primary basis or the future development of IMT for 2030 and beyond [5G IF]
2. Review the usage and sharing conditions of the band 13.75-14 GHz to enable efficient use of the band by uplink geostationary and non GSO FSS earth stations, including FSS earth stations using smaller antenna sizes [IAFI]
3. Studies relating to the use of 51.4-52.4 GHz band to enable use by gateway earth stations transmitting to non-geostationary FSS satellite orbit systems (Earth-to-space) [IAFI]

Working Group 5 discussed the contribution document submitted by 5GIF on AI-10 at its meetings held on 5.01.2023 & 10.01.2023; however, it could not bring consensus on the views and hence unanimously agreed to forward the document for consideration of the NPC.

There was no discussion held on the other two contribution documents submitted by IAFI at the WG5 level as these documents were submitted at later stage, hence WG5 forwarded these documents for discussion in the NPC meeting.

As no agreement could be reach over these documents in the NPC meeting held on 30.01.2023, NPC formed a Sub-Working Group to deliberate upon the document by 5G India Forum. The remaining two documents were sent to Working Group-5 for discussions.

These documents were again presented and discussed in the next meeting of NPC held on 03.02.2023. The meeting agreed to send the two documents proposed by IAFI. However, consensus could not be achieved for submission of document from 5G India Forum.

The following concerns were expressed in the meeting:

- That some of the frequency bands in range 7.125-24 GHz are have large satellite usages, Radio location services, Earth Exploration Satellite Services and passive services.
- That there are bands which have been identified for IMT in WRC-19 but are not being used as on date. These bands could be used to meet the requirements for IMT-2030 and beyond.
- Further, there was a suggestion that identification of sub bands for IMT in the range 7.125-24 GHz requires national study or decisions similar to the way it was taken up for 3300-3600 MHz and other band

The proponent of the contribution document and various other industry stakeholders opined that the documents was intended to explore the feasibility of IMT identification in frequency range 7.125-24 GHz and 92-275 GHz. Studies are necessary to identify the potential candidate bands for IMT.

Since, no consensus view could be formed on this contribution document in the NPC meeting held on 03.02.2023 also, the NPC Chairman suggested that this document would be further examined and discussed within DoT and accordingly decision would be taken for its submission to APG23-5. The meeting agreed to the suggestion of the NPC Chairman.

