

*DRAFT INDIA VIEWS ON WRC
AGENDA ITEMS FOR APG23-4
(APT CONFERENCE
PREPARATORY GROUP FOR
WRC-23)*

*FOR DISCUSSION IN THE
NATIONAL
PREPARATORY
COMMITTEE*

**PRELIMINARY VIEWS ON WRC-23 AGENDA ITEMS 1.1, 1.2, 1.3, 1.4, 1.5,
9.1 TOPIC C)**

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)

1. Background

Resolution 223 (Rev.WRC-19) invites

(i) the ITU Radiocommunication Sector 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;

(ii) the 2023 World Radiocommunication Conference to consider, based on the results of the studies referred to in invites the ITU Radiocommunication Sector above, possible measures to address, in the frequency band 4 800-4 990 MHz, protection of stations of the AMS and MMS located in international airspace and waters from other stations located within national territories and to review the pfd criteria in RR No. 5.441B.

2. Discussions

Under the radio regulations, the band 4800-4990 MHz is allocated to the MOBILE Service on a primary basis, as reproduced below with a number of footnotes.

From RR No. 5.442, it is clear that the allocation to Mobile service in 4950-4990 MHz is restricted only to land mobile and maritime mobile and does not cover the Aeronautical Mobile service. Therefore the protection under this agenda item in the band 4950-4990 should only be for the stations in the Land Mobile and Maritime Mobile service and not for the stations in the Aeronautical Mobile Service.

4 800-5 250 MHz

Allocation to services		
Region 1	Region 2	Region 3
4 800-4 990	FIXED MOBILE 5.440A 5.441A 5.441B 5.442 Radio astronomy 5.149 5.339 5.443	

5.440A: *In Region 2 (except Brazil, Cuba, French overseas departments and communities, Guatemala, Paraguay, Uruguay and Venezuela), and in Australia, the band 4 400-4 940 MHz may be used for aeronautical mobile telemetry for flight testing by aircraft stations (see No. 1.83). Such use shall be in accordance with Resolution 416 (WRC-07) and shall not cause harmful interference to, nor claim protection from, the fixed-satellite and fixed services. Any such use does not preclude the use of this band by other mobile service applications or by other services to which this band is allocated on a co-primary basis and does not establish priority in the Radio Regulations. (WRC-07)*

5.441A: *In Brazil, Paraguay and Uruguay, the frequency band 4 800-4 900 MHz, or portions thereof, is identified for the implementation of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of this frequency band for the implementation of IMT is subject to agreement obtained with neighbouring countries, and IMT stations shall not claim protection from stations of other applications of the mobile service. Such use shall be in accordance with Resolution 223 (Rev.WRC-19). (WRC-19)*

5.441B: *In Angola, Armenia, Azerbaijan, Benin, Botswana, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, China, Côte d'Ivoire, Djibouti, Eswatini, Russian Federation, Gambia, Guinea, Iran (Islamic Republic of), Kazakhstan, Kenya, Lao P.D.R., Lesotho, Liberia, Malawi, Mauritius, Mongolia, Mozambique, Nigeria, Uganda, Uzbekistan, the Dem. Rep. of the Congo, Kyrgyzstan, the Dem. People's Rep. of Korea, Sudan, South Africa, Tanzania, Togo, Viet Nam, Zambia and Zimbabwe, the frequency band 4 800-4 990 MHz, or portions thereof, is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of IMT stations is subject to agreement obtained under No. 9.21 with concerned administrations, and IMT stations shall not claim protection from stations of other applications of the mobile service. In addition, before an administration brings into use an IMT station in the mobile service, it shall ensure that the power flux-density (pfd) produced by this station does not exceed $-155 \text{ dB(W/(m}^2 \cdot 1 \text{ MHz))}$ produced up to 19 km above sea level at 20 km from the coast, defined as the low-water mark, as officially recognized by the coastal State. This pfd criterion is subject to review at WRC-23. Resolution 223 (Rev.WRC-19) applies. This identification shall be effective after WRC-19. (WRC-19)*

5.442: *In the frequency bands 4 825-4 835 MHz and 4 950-4 990 MHz, the allocation to the mobile service is restricted to the mobile, except aeronautical mobile, service. In Region 2 (except Brazil, Cuba, Guatemala, Mexico, Paraguay, Uruguay and Venezuela), and in Australia, the frequency band 4 825-4 835 MHz is also allocated to the aeronautical mobile service, limited to aeronautical mobile telemetry for flight testing by aircraft stations. Such use shall be in accordance with Resolution 416 (WRC-07) and shall not cause harmful interference to the fixed service. (WRC-15)*

2. Preliminary Views

On Band 4800-4940 MHz:

India support protection of stations of the aeronautical mobile service (AMS) and the maritime mobile service (MMS) located in international airspace or waters (i.e. outside national territories) and operated in the frequency band 4 800-4 940 MHz on the basis of the pfd limit provided in RR **5.441B** in addition to resolve of Resolution **223 (Rev.WRC-19)**.

On Band 4940-4990:

India supports review of the pfd limit provided in RR **5.441B** for the protection of the stations in the maritime mobile service, located in international waters (i.e. outside national territories) and operated in the frequency band 4 940-4 990.

Agenda Item 1.2:

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

1. Background

Resolution **245 (Rev.WRC-19)** invites

i) the ITU Radiocommunication Sector *to* conduct and complete the sharing and compatibility studies in time for WRC-23, with a view to ensure the protection of services to which the frequency band is allocated on a primary basis, without imposing additional regulatory or technical constraints on those services, and also, as appropriate, on services in adjacent bands, for the frequency bands:

- 3 600-3 800 MHz and 3 300-3 400 MHz (Region 2);
- 3 300-3 400 MHz (amend footnote in Region 1);
- 7 025-7 125 MHz (globally);
- 6 425-7 025 MHz (Region 1);
- 10.0-10.5 GHz (Region 2),

ii) the WRC-23 to consider, based on the results of the above studies, additional spectrum allocations to the mobile service on a primary basis and to consider identification of frequency bands for the terrestrial component of IMT.

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.

6 425-6 725 MHz band is allocated for FSS globally. While 6 425-6 725 MHz band is allocated to FSS globally (Earth-to-space) and is not subject to a Plan, 6 725-7 025MHz band is allocated to FSS globally (Earth-to-space) and is subject to AP30B Plan. India has been using this band extensively for decades for providing satellite based services from the satellites of India as well as other countries. This band is used to provide various services that include telecommunication, strategic services, societal applications like tele-medicine, tele-education, disaster management services, meteorological data collection and feeder uplinks for MSS which support safety of life services such as GMDSS and AMS(R).

Considering the less susceptibility to atmospheric and rain fade degradation, this band is used globally by all satellite operators. Especially, this band has unique characteristic of low degradation to rain fade. Hence, ideal for providing services over the regions that are situated in the tropical regions. This band is also best suited for covering wider geographical area. Therefore, transition to other higher frequency bands (Ku, Ka) is unlikely and long term use of this band will continue. In addition, higher satellite bands (Ku, Ka) are extensively used by existing GSO and NGSO satellites and face high demand for future GSO satellites and constellations of NGSO systems.

2. Preliminary Views

India views on the following bands:

- 3 300-3 400 MHz (amend footnote in Region 1, and Region 2);

India support the band for IMT identification for global harmonization of band for economies scale benefit and support studies to protect adjacent band existing services.

- 6 425-7 025 MHz (Region 1) ;

In view of the above, the preliminary view of India is that for any possible IMT identification in the band 6 425-7 025 MHz in Region 1 , should protect the satellite services in Region 3.

- 7 025-7 125 MHz (globally);

India supports possible identification in this range for IMT for global harmonization and benefits of economies of scale and is of the view that any possible identification of the band for IMT while protecting existing services and not impose undue regulatory or technical constraints on existing primary services allocated in this band..

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);

1. Background

Resolution 246 (Rev.WRC-19) invites

(i) the ITU Radiocommunication Sector to conduct sharing and compatibility studies in time for WRC-23 between the mobile service and other services allocated on a primary basis within the frequency band 3 600-3 800 MHz and adjacent frequency bands in Region 1, as appropriate, to ensure protection of those services to which the frequency band is allocated on a primary basis and not impose undue constraints on the existing services and their future development

ii) the 2023 World Radiocommunication Conference based on the results of studies in resolves to invite the ITU Radiocommunication Sector, to consider possible upgrade of the allocation of the frequency band 3 600-3 800 MHz to the mobile, except aeronautical mobile, service on a primary basis within Region 1, and to take appropriate regulatory actions,

India is having existing satellite usages in the band 3 700 – 4 200 MHz

2. Preliminary Views

India is of the view that the allocation of the frequency band 3 600-3 800 MHz to the mobile, except aeronautical mobile service to primary services within Region 1 based on the sharing and compatibility studies as per Resolution **246 (Rev.WRC-19)** while protecting existing and planned satellite services 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;

1. Background

i) Resolution **247 (Rev.WRC-19)** invites

(i) the ITU Radiocommunication Sector to conduct and complete in time for WRC-23, taking into account the results of studies already performed and those in progress within ITU-R, sharing and compatibility studies to ensure the protection of services, without imposing any additional technical or regulatory constraints in their deployment, to which the frequency band is allocated on a primary basis, including other IMT uses, existing systems and the planned development of primary allocated services, and adjacent services, as appropriate, for certain frequency bands below 2.7 GHz, or portions thereof, globally or regionally harmonized for IMT, i.e.:

- 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)

ii) India has submitted the sharing and compatibility studies associated with the frequency band 2 500-2 690 MHz (band -4 under this agenda) to WP 5D (the responsible Study Group for this Agenda Item) to ensure the protection of the incumbent BSS, MSS and RDSS (NavIC) services

from HIBS. All of these services, which use handheld/miniature user terminals with omnidirectional antenna, are presently supporting critical strategic applications across the country including the hilly, deep rural, mountainous and difficult terrains in the borders of the country.

The Indian studies are included in the working document being prepared by the WP 5D. However, the Indian studies with regard to potential interference from HIBS UE to these satellite services are presently kept under square bracket in the working document. This is due to observations by the few administrations that studies involving HIBS UEs are not within the scope of the Resolution of this agenda item , as the specifications of the HIBS UE and IMT UE are the same, and this Agenda Item does not include the studies on potential interference from the IMT to the Satellite services.

India is of the view that Resolution 247 does not limit the studies to only HIBS BS. Also, as HIBS are envisaged to complement the IMT (which means that HIBS would be typically used where IMT is not deployed), HIBS are likely to operate in the hilly/difficult terrains/rural regions (for e.g the border regions of India). This would result in the deployment of UEs in the border areas and it is imperative that studies are done involving HIBS UEs as well. Also, there is no reference ITU document exists that provides sharing and compatibility studies between such ground based IMT UEs and MSS, BSS and RDSS.

These different views are presently included in the Chairman's report of the SWG AI 1.4, and the issues is likely to be discussed in the upcoming WP 5D meeting in June 2022.

The Resolution 247 can be interpreted in both ways, as there is no clarity in the Resolution in this regard, which is recognized by the WP 5D as well. The arguments provided by India in WP 5D are very strong and can't be ignored. Chairman of the concerned WG (Spectrum & Sharing Studies) has also included his views in the report that in such cases, the different views could be captured in the CPM text.

India, for many years/decades has been using parts of the frequency band 2 500-2 690 MHz for long term critical and strategic satellites applications (MSS, BSS and RDSS). India has IMT assignments in the portions of the 2500-2690MHz band, i.e. 2535-2555MHz and 2635-2655MHz operating in TDD mode.

2. Preliminary Views

India supports technical and regulatory provision for the protection of existing and planned satellite services in the band 2500-2690 MHz.

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

Resolution **235 (Rev.WRC-15)** invite

i) ITU-R, after the 2019 World Radiocommunication Conference and in time for the 2023 World Radiocommunication Conference

1 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, taking into account the relevant ITU Radiocommunication Sector (ITU-R) studies, Recommendations and Reports;

2 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, taking into account relevant ITU-R studies, Recommendations and Reports;

3 to conduct sharing and compatibility studies, as appropriate, in order to provide relevant protection of systems of other existing services,

ii) the 2023 World Radiocommunication Conference to consider, based on the results of studies above, provided that these studies are completed and approved by ITU-R, possible regulatory actions in the frequency band 470-694 MHz in Region 1, as appropriate.

2. Preliminary Views

India is of the preliminary view that any changes made to RR provisions in Region 1 under this Agenda Item shall not impact any existing or future allocations in the band and also shall not impose any procedural or regulatory constraints for RR provisions in Region 3.

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);

1. Background

Resolution 175 (WRC-19) invite 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, and instructs the Director of the Radiocommunication Bureau to report to WRC-23 on the results of these studies

2. Preliminary Views

India support 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. The IMT systems for fixed wireless broadband shall not impose restrictions or shall not cause interference to other radiocommunications services

Agenda Item: Verification of No. 21.5 for the notification of IMT stations operating in the frequency band 24.45-27.5 GHz which use an antenna that consists of an array of active elements

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.

1. Background

Characteristics of stations in the terrestrial services in the frequency band 24.45-27.5 GHz which use an antenna that consists of an array of active elements require to notify as per Annex 1 of Appendix 4 of RR. The notification by administrations of an antenna that consists of an array of active elements shall be consistence.

At present in WP5D study group following two views were emerged;

View 1: Total Radiated Power (TRP) with a reference bandwidth

View 2: Conducted power delivered by a single transmitter.

2. Preliminary Views

As per ongoing studies at WP5D, the station with integrated AAS with no provision to measure conducted power raised difficulties to provide data against the Item Identifier 8AA “Power delivered to the antenna” (see RR Appendix 4 Table 1). To deal with the situation WP5D studies has been splitted into two approaches, i) TRP with reference bandwidth, and ii) derive conducted power from TRP for single transmitter. Later approach is more advantageous for the growth of IMT while providing protection to satellite as per RR provisions. Currently India doesn’t have any position on the issue, however, India will support the method which will ensure appropriate protection to satellite and give opportunities for IMT growth and innovation in active antenna system.

PRELIMINARY VIEWS ON WRC-23 AGENDA ITEMS 1.7, 1.9 AND 1.10

Agenda Item 1.7:

To consider a new aeronautical mobile-satellite ® service (AMS®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®S, the ARNS, and in adjacent frequency bands;

2. Background

This Agenda Item deals with a possible new allocation to the Aeronautical Mobile-Satellite(R) service within the frequency band of 117.975-137 MHz to relay standard VHF communications operating under the aeronautical mobile (R) service, and to complement terrestrial infrastructures over oceanic and remote areas. This would not require modification to aircraft equipment, as the space segment would be able to receive and transmit to standard VHF radios already installed on board aircraft.

The new AMS(R)S allocation would enable the relay of existing aeronautical VHF communications via satellites to extend the direct controller-pilot communications for aircraft operating in remote/oceanic region without the need to change the existing aircraft equipage.

2. Preliminary Views

- APT Members support the new AMS®S allocation that is limited to the relaying of aeronautical VHF air traffic management communications in accordance with the Standards and Recommended Practices (SARPs) in accordance with ICAO.
- Since as stated by ICAO, there is no need for compatibility studies between the two services and no protection limit is required for Radio Astronomy, **India supports Method B**

Agenda Item 1.9:

to 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 (route) service and ensure coexistence of current HF systems alongside modernized HF systems

2. Background

In order to use digital HF aeronautical spectrum which would increase the data rates to reach required performance by modern aeronautical systems, RR Appendix 27 needs to allow the use of multiple contiguous and/or non-contiguous 3kHz channels simultaneously.

APT Members are of the view that there are differing wideband HF technologies and are of the view that changes to RR. Appendix 27 should allow new digital wideband HF systems taking into account technology neutrality

2. Preliminary Views

- APT Members are of the view that there are differing wideband HF technologies and are of the view that changes to RR. Appendix 27 should allow new digital wideband HF systems taking into account technology neutrality
- Exhaustive study is required for the Agenda Item and as of now no inputs can be provided. However, India supports APT views on 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);

The frequency range 15.4-15.7 GHz is used or partly used by the radiolocation service (RLS), aeronautical radionavigation service (ARNS) and fixed-satellite service (FSS) (earth-to-space).

The frequency band 22-22.21 GHz under consideration is used by the fixed service (FS) for applications requiring the transport of large quantity of data between two fixed locations.

2. Background

The frequency range 15.4-15.7 GHz is used or partly used by the radiolocation service (RLS), aeronautical radionavigation service (ARNS) and fixed-satellite service (FSS) (earth-to-space).

The frequency band 22-22.21 GHz under consideration is used by the fixed service (FS) for applications requiring the transport of large quantity of data between two fixed locations.

From the studies, it indicates that the services can co-exist in the 15.4-15.7 GHz band.

In the 22-22.21 GHz band, studies based on Monte Carlo simulation suggest that the services can co-exist except for EESS for which further studies are being conducted. Additionally, in the frequency band 22-22.21 GHz, India has MW Links

2. Preliminary Views

- From the studies, it indicates that the services can co-exist in the 15.4-15.7 GHz band.
- In the 22-22.21 GHz band, studies based on Monte Carlo simulation suggest that the services can co-exist except for EESS for which further studies are being conducted. Additionally, in the frequency band 22-22.21 GHz, India has MW Links
- India supports new allocation for Aeronautical Mobile Service in 15.4-15.7 GHz and for the frequency band 22-22.21 GHz, we may wait for results of further studies.

Working Group 3

PRELIMINARY VIEWS ON WRC-23 AGENDA ITEMS 1.12, 1.13, 1.14, 9.1 TOPIC A & 9.1 TOPIC D

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);

1. Background

Resolution 656 (Rev.WRC-19) mentions that spaceborne active radio-frequency sensors can provide unique information on physical properties of the Earth and other planets. There is an interest in using active spaceborne sensors in the vicinity of the frequency range 40-50 MHz for measurements of the Earth's subsurface to provide radar maps of subsurface scattering layers with the intent to locate water/ice/deposits. The worldwide, periodic measurements of subsurface water deposits require the use of spaceborne active sensors.

In this context, ITU invites for 2023 world radiocommunication conference to consider the results of studies on spectrum needs 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, and take appropriate action,

In India, in 40-47 MHz band there are primary allocations to Fixed & Mobile and band 47-50 MHz is allocated for Fixed, Mobile and Broadcasting services. Further, the use of frequency band 47-50 MHz (and beyond that) by wind profiler radars in the radiolocation service is permitted on case to case basis. In the frequency range 40-50 MHz, Space Research services have secondary allocation from 40-40.2 MHz and 40.98-41.015 MHz. There is extensive usage in 40-50 MHz band by Indian Administration and also future plans for usage.

2. Preliminary Views

India is of the view that no change to the RR should be considered in respect of current allocation to EESS (active) for spaceborne radar sounders within the range of frequencies around 45 MHz, as there are extensive current usages and plans for future uses.

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);

1. Background

It is mentioned in Resolution 661 (WRC-19) that there is a need for broadband communication downlinks in the SRS for the purpose of transmitting future scientific data at high data transmission speeds. The number of space agencies are already considering the possibility of using this frequency band for next-generation SRS satellites.

The frequency band 14.8-15.35 GHz is currently allocated to the fixed and mobile services on a primary basis and to the space research service (SRS) on a secondary basis.

In India, the 14.8-15.35 GHz band is extensively used for fixed services providing microwave backhaul connectivity to the IMT networks. The frequency band 15.2-15.35 GHz is currently allocated to the EESS (passive) and SRS (passive) on a secondary basis (**RR No. 5.339**). Further, the frequency band 15.35-15.4 GHz is currently allocated to the EESS (passive), the radio astronomy service and the SRS (passive) on a primary basis;

Resolution **661 (WRC-19)**;

In this context, ITU invites for 2023 world Radiocommunication Sector conference to conduct and complete in time for WRC-23 sharing and compatibility studies in order to determine the feasibility of upgrading the SRS allocation to primary status in the frequency band 14.8-15.35 GHz, with a view to ensuring protection of the existing primary services.

2. Preliminary Views

India is of the view that no change to the RR should be considered in respect of current allocation to SRS due to extensive usage of the band 14.8-15.35 GHz for FS.

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);

1. Background

In Resolution **662 (WRC-19)**, ITU recognizes that some passive sensor systems under development plan to operate on some channels in the frequency range 239-248 GHz, given the specific characteristics of this frequency band for ice-cloud analysis.

Resolution **662 (WRC-19)** invites for 2023 World Radiocommunication Conference to review the existing primary allocations to the EESS (passive) in the frequency range 231.5-252 GHz in order to analyse if these allocations are aligned with the observation requirements of passive microwave sensors. To study the impact that any change to the EESS (passive) allocations in the frequency range 231.5-252 GHz might have on the other primary services in these frequency bands. To study, as appropriate, possible adjustments to the EESS (passive) allocations in the frequency range 231.5-252 GHz, taking into account the results under resolves to invite the ITU Radiocommunication Sector 1 above,

2. 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) subject to the outcome of the results of ITU-R studies. Any changes to the EESS (passive) allocations in the frequency range 231.5-252 GHz shall not adversely affect the operation of other primary services in this frequency band.

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;

1. Background

Space weather observations are important for detecting solar activity events that impact services critical to the economy, safety and security of administrations and their population. These observations are made from ground-based and space-based systems. Some of the sensors operate by receiving signals of opportunity, including, but not limited to, low-level natural emissions of the Sun, Earth's atmosphere and other celestial bodies, and therefore may suffer harmful interference at levels which could be tolerated by other radio systems. While all spectrum-reliant space weather observation systems are important, the most critical need for radio regulatory protection is for those systems that are used operationally in the production of forecasts and warnings of space weather events that can cause harm to important sectors of national economies, human welfare and national security;

In this context, ITU invites for 2023 World Radiocommunication Conference to identify, in time for WRC-23, and based on existing and possible further ITU-R studies on the technical and operational characteristics, specific space weather sensors which need to be protected by appropriate regulation, including: – to determine if receive-only space weather sensors shall be designated as applications of the Metajds service; – to determine the appropriate radiocommunication service, if any, for cases where it is determined that receive-only space weather sensors do not fall under the Metajds service.

2. Preliminary Views

India supports ITU-R studies relating to the identification of space weather sensors, their technical and operational characteristics, spectrum requirements and appropriate radio service designations with a view to describing appropriate recognition and protection in the Radio Regulations without placing additional constraints on incumbent services.

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;

1. Background

Under studies considered for WRC 19 agenda item 1.6, a preliminary study on the protection of EESS (passive) sensors operating in the 36-37 GHz was submitted to the ITU-R. This preliminary study indicated that it may be necessary to not exceed an out-of-band e.i.r.p of -34 dBW/100 MHz, for all angles greater than 71.4 degrees from nadir, for FSS non-GSO space stations operating in the frequency band 37.5-38 GHz. In addition, interference into the cold calibration channel of the EESS (passive) sensor operating in the frequency band 36-37 GHz had not been studied.

WRC 19 invites ITU-R to conduct further study of this topic and develop Recommendations and/or Reports, as appropriate, and Report back to WRC 23 to take action, if necessary.

2. Preliminary Views

India supports studies in ITU-R for the protection of EESS (passive) sensors operating in the band 36-37 GHz from non-GSO FSS systems in the band 37.5-38 GHz, while ensuring that no additional constraints are placed on incumbent services in the band 37.5-38 GHz with due consideration of operational aspects of non-GSO FSS system, leading to ITU-R Recommendations and/or Reports, as appropriate.

Working Group-4

PRELIMINARY VIEWS ON WRC-23 AGENDA ITEMS 1.15, 1.16, 1.17, 1.18, 1.19, AND NO. 7

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);

1. Background

World Radiocommunication Conference 2019 (WRC-19) adopted agenda item 1.15 and Resolution 172 that calls for studies for possible operation of earth stations on aircraft and vessels (hereafter referred to as A-ESIM and M-ESIM respectively) communicating with geostationary space stations in the fixed-satellite service in the frequency band 12.75-13.25 GHz (Earth-to-space).

Previously, ITU has addressed aeronautical and maritime earth stations operating with GSO FSS satellites in Study Group 4 and at several WRCs and has adopted technical and regulatory regimes to allow such operations. In the Radio Regulations, Resolution 902 (WRC-03), Resolution 156 (WRC-15); and Resolution 169 (WRC-19) prescribe the technical and regulatory provisions to allow GSO FSS networks to communicate with earth stations on aircraft or vessels to provide broadband communications.

Resolution 156 (WRC-15) is regarding ESIM communicating with GSO FSS networks in the 19.7-20.2 GHz and 29.5-30.0 GHz bands; Resolution 169 (WRC-169) provides the technical and operational measures for ESIM communicating with GSO FSS networks in the frequency bands 17.7-19.7 GHz and 27.5-29.5 GHz.

Working Party (WP) 4A the responsible group for the Agenda Item 1.15 to conduct sharing studies in ITU-R to ensure protection of the other primary services in the band such as FSS, FS and MS as well as the protection of EESS (active) and ARNS operating in the adjacent band 13.25-13.4 GHz.

Chair's Report on the meeting of WP 4A (Geneva, 11-20 May 2022) contains Annex 18 to WP 4A Chair's Report (Document 4A/691-E) Working Document on WRC-23 Agenda Item and Annex 28 to WP 4A Chair's Report (Document 4A/691-E), Preliminary Draft CPM Text for WRC-23 Agenda Item 1.15 including Draft New Resolution [A115](WRC-23).

2. Preliminary Views

- 1 the development of appropriate regulatory framework and technical requirements for operation of A-ESIM and M-ESIM communicating with GSO FSS networks in the frequency band 12.75-13.25 GHz (Earth-to-space) that will ensure the protection of the **incumbent services including terrestrial services** operating in accordance with RR in the band as well as in the adjacent bands and not adversely affect the assignment of those services and their future development.
- 2 that GSO FSS A-ESIM and M-ESIM in the frequency band 12.75-13.25 GHz shall operate in consistent with the envelope defined in Appendix 30B and also only in the authorized territories (air space and territorial waters) of notifying administrations under Article § 6.6 of Appendix 30B.
- 3 that the use of the frequency band 12.75-13.25 GHz (Earth-to-space) by A-ESIM and M-ESIM shall not result in any changes or restrictions to the allotment in the Plan, assignments in the List of **Appendix 30B**, and those recorded in the MIFR including the assignments arising from the implementation of **Resolution 170 (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);

1. Background

Permitting use of non-GSO FSS Earth stations in Motion (NGSO-FSS ESIM) in the 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)

Other allocated (primary) services and usages of these bands in India

- 17.7-18.6 GHz and 18.8-19.3 GHz and 19.7-20.2 GHz :
 - o FS, FSS and MS
 - o India - Microwave Backhaul assignments

- o India - FSS – Inflight connectivity (IFMC)
- 27.5-29.1 GHz and 29.5-30 GHz (Earth-to-space)
- o FS,FSS (E-s), MS
- o India – 5G (27.5-28.5GHz)

Additionally, Earth exploration-satellite service (EESS) (passive) and space research service (SRS) (passive) in the adjacent frequency bands need to be protected

Based on the current usage and assignments, the preliminary view should primarily consider the sharing study results (4A/691-E), it is important to ensure feasible protection from

- non-GSO FSS (ESIMs s-E) with the FS and GSO FSS ESIMs operation.
- non-GSO FSS (ESIM E-s) with the MS and GSO FSS ESIMs operation.
- non-GSO FSS with adjacent band services

2. Preliminary Views

1. In this frequency band 17.7-18.6 GHz and 18.8-19.3 GHz and 19.7-20.2 GHz, 27.5-28.5 GHz non-GSO ESIMs receivers shall not claim protection and cause interference to terrestrial services to which the frequency band is allocated.

2. non-GSO ESIM do not adversely affect the provision of UAS CNPC under Resolution 155 (Rev. WRC-19); make a clear regulatory distinction between satellite networks or satellite network resources providing UAS CNPC and those providing non-safety ESIMs applications.

3. In the frequency band 27.5-29.1 GHz,

a. there is a potential interference from the Aeronautical non-GSO ESIMs and terrestrial services when operated without regulatory measures

b. based on the studies maritime non-GSO ESIMs will cause interference to FS and MS receive stations when operated with the limits agreed in Resolution 169 (WRC-19).

Hence A-SIM and M-ESIM should be allowed to operate only with the specified technical, operational and regulatory conditions to ensure that deployment of A-SIM and M-ESIM shall not cause any additional constraints on the existing terrestrial services and shall be subject to agreement obtained under No. 9.21 with administrations whose services, operating in accordance with the Table, may be affected. Further, the specified technical, operational and regulatory conditions shall be adopted to avoid any interferences to terrestrial receive stations including the services in the adjacent bands (draft new Resolution AI116 (WRC-23).

4. Protection of GSO FSS services

a. In addition to the RR No. 22, non-GSO satellite system shall not claim protection from GSO satellite networks in the FSS.

b. Article 22 includes efpd limits for non-GSO FSS systems in the frequency bands 17.8 18.6 GHz, 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), and 29.5-30 GHz (Earth-to-space) for protection of GSO networks from non-GSO systems.

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;

1. Background

WRC-23 will consider regulatory actions for possible provision of satellite-to-satellite links, including new ISS allocations, in the frequency ranges 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz, and 27.5-30 GHz in order to facilitate relaying of data from non-GSO space stations through satellite networks in the fixed-satellite service.

The 11.7-12.7 GHz frequency range is allocated to the fixed, mobile, broadcasting, broadcasting satellite, and fixed-satellite service on a primary basis. The 18.1-18.6 GHz, 18.8-19.7 GHz, and 27.5-29.5 GHz frequency ranges are allocated to the fixed, mobile, and fixed-satellite services on a primary basis. The Radio Regulation has provision for feeder links operations of non-GSO mobile-satellite service (MSS) in the 19.3-19.7 GHz and 29.1-29.5 MHz frequency bands. The 19.7-20.2 GHz and 29.5-30 GHz frequency bands are allocated to the fixed-satellite and mobile-satellite services on a primary basis. There is an adjacent band primary allocation to the Earth-exploration satellite service (passive) in 18.6-18.8 GHz.

Under this agenda item, Resolution 773 (WRC-19) invites the ITU-R:

- to develop the technical and operational characteristics of different types of space stations that plan satellite-to-satellite transmissions in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz;
- to study the technical and operational characteristics, including spectrum requirements, off-axis equivalent isotropically radiated power (e.i.r.p.) values and out-of-band emission limits, for transmissions between space stations in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz;
- to study sharing and compatibility between satellite-to-satellite links intending to operate between space stations in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz and current and planned stations in the FSS and other existing services allocated in the same frequency bands and adjacent frequency bands, including passive services, with a view to ensuring protection of the primary services in the bands.
- to develop, for different types of space stations, the technical conditions and regulatory provisions for satellite-to-satellite operations in the frequency bands 11.7-12.7

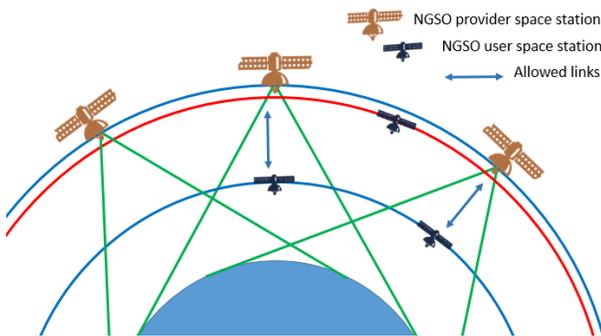
GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz, or portions thereof, including new ISS allocations, as appropriate, taking into account the results of the studies above.

WP4A is the responsible group for the Agenda Item 1.17 to conduct sharing studies in ITU-R to ensure protection of the existing primary services in the bands and in the adjacent frequency bands.

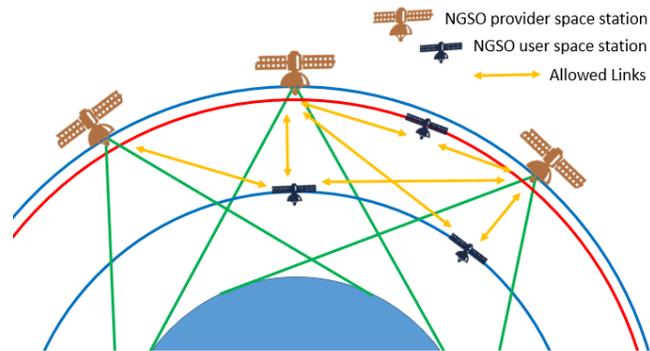
Chair's Report on the meeting of WP 4A (Geneva, 11-20 May 2022) contains Annex 30 to WP 4A Chair's Report (Document 4A/691-E), Preliminary Draft CPM Text for WRC-23 Agenda Item 1.17 including Draft New Resolution [A117-sat-to-sat] (WRC-23) and Annex 20 Working document on WRC-23 agenda item 1.17.

The “within the cone of coverage” concept of operations The “expanded-cone” concept of operations

The “within the cone of coverage” concept of operations



The “expanded-cone” concept of operations



2. Preliminary Views

India, like several other countries, have existing uses in many of these frequency bands. The recently launched GSAT 24 satellite by India, makes use of the 11.7-12.2 GHz planned BSS band for the first time. Microwave backhaul systems operate in the 17.7-19.7 GHz band, which need be protected from introduction of the new service. India also has existing and planned use of the Ka/Ku band and coordination with affected administration is being taken up for several satellite networks in the Fixed Satellite Service (FSS); GSAT 29 already brought into use. *(Hence, based on the stakeholder's views, a view can be conveyed to APG that :)* India supports the developments of an appropriate regulatory framework to enable the operation of satellite-to-satellite links within the FSS in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz, while ensuring protection of existing services, their current and future applications and expansions in the same and adjacent frequency 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. Background

WRC-19 adopted WRC-23 agenda item 1.18 for the consideration of new mobile satellite service (MSS) allocations for MSS systems, as described in Resolution 248 (WRC-19), potentially operating in the frequency bands 1 695-1 710 MHz (Region 2), 2 010-2 025 MHz (Region 1), 3 300-3 315 MHz (Region 2) and 3 385-3 400 MHz (Region 2) for future development of narrowband MSS systems while ensuring the protection of existing primary services in those frequency bands and adjacent frequency bands.

There is an increasing demand of MSS systems using small satellites, for the delivery of narrowband MSS applications. Similar to terrestrial mobile systems, it is infeasible for any two MSS systems to operate co-frequency in the same service area unless the operation and characteristics of the MSS systems is delicately coordinated at the design stage. Past studies suggested that the technical and operational characteristics of existing MSS systems may impose significant constraints to a new MSS system, hampering the sharing of MSS spectrum. Since existing MSS allocations below 5 GHz are fully utilized by incumbent MSS systems which have large geographical coverage or global coverage that effectively removed the possibility of geographical separation, additional MSS spectrum is required for the implementation of such non GSO MSS systems.

ITU-R WP 4C which is a responsible group for this agenda item and reviewing the Working Document towards a Preliminary DNRRep ITU-R M.[NB-MSS] dealing with sharing and compatibility studies between narrowband MSS systems and systems within the services operating in the proposed frequency bands and in the adjacent bands.

2. Preliminary Views

1. India is of the view that that the results of sharing and compatibility studies should not impose any constraints to the incumbent services operating in the band and adjacent bands in Region 3, while noting that the issue concerns with Region 1 and 2

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);

1. Background

WRC-23 agenda item 1.19, in accordance with Resolution 174 (WRC-19), invites ITU-R Sector to conduct, and complete in time for WRC-23, sharing and compatibility studies between the FSS (space-to-Earth) and the BSS (space-to-Earth) and between the FSS (space-to-Earth) and the FSS (Earth-to-space), in order to consider a possible new primary allocation to the FSS (space-to-Earth) in the frequency band 17.3-17.7 GHz for Region 2, while ensuring the protection of existing primary allocations in the same and adjacent frequency bands, as appropriate, and without imposing any additional constraints on existing allocations to the BSS (space-to-Earth) and the FSS (Earth-to-space).

An FSS (space-to-Earth) emission is similar to a BSS (space-to-Earth) emission. Both consist of a space station transmitting a signal towards the Earth that will be received by fixed earth station terminals. In principle, the interference scenario with respect to other services should not be different, however, with this new allocation, the flexibility in possible uses of the band would be increased.

In accordance with Resolution 174 (WRC-19), the sharing and studies have to be done with the existing services in the frequency band 17.3-17.7 GHz; fixed-satellite service (Earth-to-space) and broadcasting-satellite service (space-to-Earth) and the existing services in adjacent frequency bands: Earth exploration-satellite service, space research service, radiolocation service, fixed service and mobile service. Working Party 4A is the responsible group for this agenda item.

The different sharing scenarios to study the compatibility of incumbent services and services in the adjacent bands were considered and Annex 31 to Document 4A/691-E to Chair's report contains Preliminary Draft CPM text for this Agenda Item, which summarizes and analyses the results of the studies

2. Preliminary Views

India is of the view that that the results of sharing and compatibility studies should not impose any constraints to the incumbent services operating in the band and adjacent bands in Region 3, while noting that the issue concerns with Region 2.

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;

Topic A:

Tolerances for certain orbital characteristics of non-GSO space stations in the FSS, BSS, and MSS

Topic B:

Non-GSO bringing into use post-milestone procedure

Topic C:

Protection of geostationary satellite networks in the MSS operating in the 7/8 and 20/30 GHz bands from emissions of non-geostationary satellite systems operating in the same frequency bands and identical directions

Topic 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

Topic E:

AP30B Improved procedures for new Member States

Topic F:

Excluding uplink service area in AP30A for Region 1 & 3 and AP30B

Topic G:

Amendments to Res. 770 (WRC-19)

Topic H:

Implicit agreement in RR AP30/30A/30B

Topic I:

Special agreements under RR Appendix 30B

Topic J:

MODs to Res. 76 (Rev. WRC-15)

Topic K:

MODs to Res. 553 (Rev. WRC-15)

Topic L:

TT&C for non-GSO in-orbit servicing

2. Preliminary Views

Topic A:

To ensure the efficient and interference free use of space spectrum, India can support the development of equivalent limits for Tolerances for certain orbital characteristics of non-GSO space stations of the FSS, BSS and MSS.

Topic B:

India can support the development of post-milestone procedure for systems that are subject to Resolution 35 (WRC-19).

Topic C:

This is a slightly complex issue. An appropriate preliminary view shall be formed based on the discussions and progress in subsequent WP-4A meetings.

Topic D:

For Topic D1:

India can support modification to appendix 1 to annex 1 of RR AP30B to align the values of orbital separation to those in section 1.1 and 1.2 of the annex adopted by WRC-19.

For Topic D2 and D3:

This topic would be further discussed and developed by WP 4A in subsequent meetings. An appropriate preliminary view shall be formed based on the discussions and progress in subsequent WP-4A meetings.

Topic E:

Indian Administration supports AP30B Improved procedures for new Member States

Topic F:

This topic would be further discussed and developed by WP 4A in subsequent meetings. An appropriate preliminary view shall be formed based on the discussions and progress in subsequent WP-4A meetings.

Topic G:

An appropriate preliminary view shall be formed based on the discussions and progress in subsequent WP-4A meetings.

Topic H:

India supports these changes to ensure long term protection of Plan assignments/allotment.

Topic I:

This topic was introduced in the last WP-4A meeting, which was adopted for further discussions. An appropriate preliminary view shall be formed based on the discussions and progress in subsequent WP-4A meetings.

Topic J:

India supports the proposed modifications to Resolution 76 (Rev.WRC-15) that would ensure measures to protect GSO FSS & BSS networks

Topic K:

This topic was introduced in the last WP-4A meeting, which was adopted for further discussions. An appropriate preliminary view shall be formed based on the discussions and progress in subsequent WP-4A meetings.

Topic L

This topic was introduced in the last WP-4A meeting, which was adopted for further discussions. An appropriate preliminary view shall be formed based on the discussions and progress in subsequent WP-4A meetings.

PRELIMINARY VIEWS ON WRC-23 AGENDA ITEM 2, 4 AND 9.1 (TOPIC B)

This document provides India's preliminary views on agenda item 2, 4 and 9.1 topic (b).

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;

Background

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. Resolution 27 (Rev.WRC-19) resolves that WRC reviews the ITU-R Recommendations that have been revised during the preceding study period and determines, whether the corresponding reference to the Recommendation in the Radio Regulations should be updated to reflect the revised version of the ITU-R Recommendation, otherwise the earlier version of the Recommendation is retained. The revised ITU-R Recommendations will be examined based on the results of the CPM23-2 for arriving at a final position.

Preliminary Views

India supports the examination and review of ITU-R Recommendations incorporated by reference into the Radio Regulations and where appropriate the updating of these references.

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;

Background

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)**. **It may be noted that review will focus** only on those Resolutions/ Recommendations that are not related to any other agenda item of WRC-23.

Preliminary Views

India supports the principle and intent of Resolution 95 (Rev.WRC-19) to ensure Resolutions and Recommendations of previous WRCs are relevant and kept up to date.

Agenda Item 9.1 (Topic b):

9 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);

Resolution 774 (WRC-19) – Studies on technical and operational measures to be applied in the frequency band 1 240-1 300 MHz to ensure the protection of the radionavigation-satellite service (space-to-Earth)

Background

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**.

ITU-R WP5A is the responsible group for this agenda item and has responsibility for developing the CPM text in collaboration with ITU-R WP 3M, WP 4C, WP 7C (contributing group), which has responsibility for coexistence studies under this issue.

Preliminary draft new (PDN) Report ITU-R M. [AMATEUR.CHARACTERISTICS] provides the detailed information on the review of amateur and amateur-satellite service applications and a compilation of appropriate and relevant parameters and operational characteristics for the studies, while PDN Report ITU-R M. [AMATEUR-RNSS] details the potential interference analysis and related studies. Furthermore, ITU-R is developing a Recommendation ITU-R M. [AS.

GUIDANCE] providing guidelines to assist administrations and the amateur and amateur-satellite services to ensure the protection of the RNSS (space-to-earth) in the frequency band 1 240-1 300 MHz from harmful interference. Annex-6 to WP 5A Chair's Report (Document 5A/597-E) contains Draft CPM Text for this agenda item.

Preliminary Views

India supports ongoing studies in various Study Groups of 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 1240-1300 MHz.
