



Highlights on WRC23 Outcome & Activities



Protect satellite bands from other services

- 1.2 IMT in 3/6/7/10 GHz - Res. 245 (WRC-19)
- 1.3 Mobile Service in 3600-3800 MHz in Region 1 - Res. 246 (WRC-19)
- 9.1 c) IMT in bands of the Fixed Service (FS) - Res. 175 (WRC-19)
- Art 21 RR21.5 and Table 21-2 (WRC-19 doc. 550)

Enhance use of existing satellite bands

- 1.8 Use of FSS for CNPC links of UAS- Res. 155 (WRC-19)
- 1.15 GSO FSS earth stations on aircraft and vessels in 12.75-13.25 GHz - Res. 172 (WRC-19)
- 1.16 NGSO ESIMs in Ka-band - Res. 173 (WRC-19)
- 1.17 Satellite-to-satellite links in Ku and Ka-bands - Res. 773 (WRC-19)
- 7 Improvements to satellite procedures - Res. 86 (WRC-07)
- 9.1 d) EESS (passive) in 36-37 GHz vs FSS NGSO in 37.5-38 GHz (WRC-19 doc. 535)

Develop new satellite bands

- 1.18 New MSS allocations for narrow-band mobile satellite systems - Res. 248 (WRC-19)
- 1.19 New primary FSS allocation in 17.3-17.7 GHz in R2 - Res. 174 (WRC-19)

10 WRC-27 Agenda

WRC-23 Held in Dubai 20 Nov – 15 Dec 2023

Member States Participation: 163 Countries, 3,900 Delegates

- Approved: 43 NEW Resolutions
- Revised: 56 EXISTING Resolutions
- Suppressed: 33 Resolutions
- No surprise in contentious Issues:
 - Agenda item 1.2: Upper 6 GHz (6425-7125 MHz)
 - Agenda item 1.3: 3.5 GHz (3300 – 3800 MHz)
 - Agenda item 1.5: Below 1 GHz (UHF 470 – 694 MHz)
- Global Harmonisation is getting more difficult; hence, IMT identification is now by footnotes
- The role of Regional Chairs is significant in collective decision-making on contentious agenda items during the conference.

IMT RELATED TOPICS

- **6GHz (AI 1.2):** WRC identified 3.6-3.7 GHz for Region 2 (with a country footnote for 14 countries) for identification in the band 3.7-3.8 GHz, and 6.425-7.125 GHz for IMT in Region 1 with a country footnote (and with a country footnotes for two countries in Region 2 and 3 countries in Region 3). The flexibility for the countries to consider whether to adopt IMT by adding their name to the footnotes. The criteria adopted for the protection of FSS are not considered satisfactory and may well be revisited at WRC-27.
- **3.6-3.8 GHz (AI 1.3):** The mobile service was added to the band and identified for IMT through a footnote with many countries in ATU and ASMG regions. **A footnote was added, keeping the mobile service secondary in 3.7-3.8 GHz**, allowing continued FSS use in six African countries.
- **Fixed Wireless Access (FWA) using IMT technology in FS Bands (AI 9.1 Topic c):** The Radiocommunication Assembly (Nov 2023) adopted a new resolution on this issue, and it was consequently not considered by WRC.
- **Article 21.5 (protection of FSS space receivers):** Updates have been made in the RR (Radio Regulations) to indicate that power levels in RR No 21.5 can be considered as TRP (Total Radiated Power). No changes for bands above 30 GHz.
- **IMT Future Agenda Item*:** These bands will be studied for a possible IMT identification:
 - 4 400-4 800 MHz (or a portion thereof) in Region 1 and Region 3;
 - 7 125-8 400 MHz (or a portion thereof) in Region 2 and Region 3;
 - 7 125-7 250 MHz and 7 750-8 400 (or a portion thereof) in Region 1;
 - 14.8-15.35 GHz.
- ***Critical that core Ku band FSS / BSS allocations in the 10.7- 14.8 GHz band avoided from the scope of this FAI.***

SATELLITE RELATED TOPICS

- **Protection of GSO from NGSO epfd (AI 7 J):** Meetings on NGSO aggregate limit are to start, with meetings limited to planning until the ITU-R work on developing the methodology is completed, which should be done by July 2027.
- **ESIM (AI 1.15/1.16):** For each of these, a Resolution was approved under which aeronautical and maritime terminals (ESIMs) communicating with geostationary satellites (in Ku-band) and non-geostationary satellites (in Ka-band), will operate.
- **UAS CNPC Links (AI 1.8):** Resulted in a “No Change” outcome, as ITU will wait for the relevant SARPS to be ready from the ICAO (International Civil Aviation Organisation) side. An AI for 2031 was agreed to look for bands in the 5 GHz range.
- **New MSS Allocation for IOT (AI 1.18):** The WRC did not allocate spectrum for this application, as no studies were completed, due to a lack of clarity on the definition of the application.
- **17 GHz Allocation in R2 (1.19):** FSS (space-to-Earth) allocation in the band 17.3-17.7 GHz in Region 2 adopted.
- **NGSO PFD Limits in Ka-band (AI 9.2, No. 21.16.6):** Equations updated to address larger constellations.

FUTURE AGENDA ITEMS (FAI) for WRC-27

- 1.1 Q/V Band ESIM for GSO & NGSO
- 1.2 Small Antennas in 13.75 – 14 GHz
- 1.3 Q/V Band Gateways for NGSO
- 1.4 Ka-Band FSS and BSS Allocation in R3 & epfd limits in R1 and R3
- 1.5 non-GSO FSS/MSS earth stations: unauthorized operations & service area exclusion
- 1.6 Equitable Access in Q/V Bands
- 1.7 IMT usage of 4400-4800 MHz, 7125-8400 MHz and 14.8-15.35 GHz
- 1.10 Power limits on FSS, MSS & BSS to protect Fixed & Mobile in 70 & 80 GHz bands
- 1.11 MSS space-to-space links
- 1.12 NGSO MSS Allocation for low data rate
- 1.13 MSS IMT Allocation for Direct-to-Device
- 1.14 Additional MSS Allocation in 2 GHz
- 1.16 Radio Quiet Zones w.r.t. NGSO systems

NB: NON- WRC Related Activities

- ❖ *Revisions to improve the fidelity of modeling NGSO systems and interference into GSOs in Rec. S.1503 EPFD limits software*
- ❖ *Technical studies w.r.t. ensuring continued protection of FSS and BSS systems under Art22/Res76 epfd limits, without regulatory consequences, based on WRC-23 Minutes of the Tenth Plenary, p. 4-5 (published 15 Jan. 2024), available at <https://www.itu.int/md/R23-WRC23-C-0525/en>.*
- ❖ *Studies on implementation of Resolution ITU-R 74 (RA-23) on space sustainability, with results to be reported to RAG (Radiocommunications Advisory Group) and RA-27 (Radiocommunications Assemblies) - (not a formal FAI)*