

**ITUWRS**  
ONLINE2020

29<sup>TH</sup> WORLD RADIOCOMMUNICATION SEMINAR  
30 November - 11 December 2020

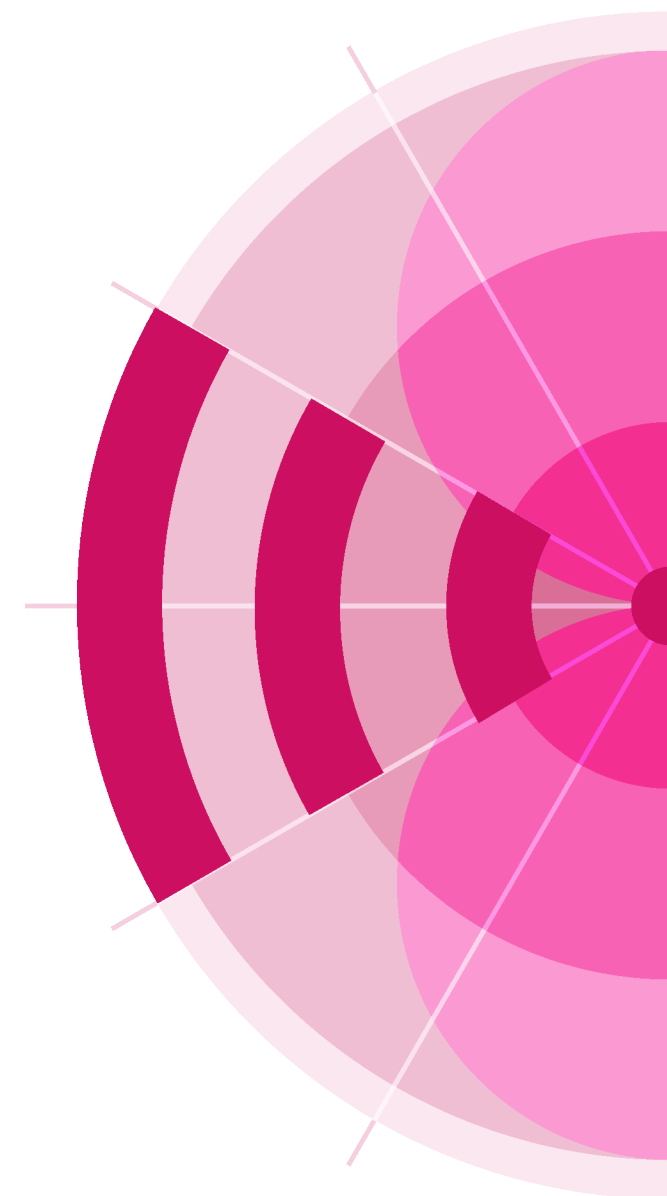
# ITU Preparations for CPM23-2, RA-23 and WRC-23 (processes & topics)

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Radiocommunication Bureau, ITU

[www.itu.int/go/wrs-20](http://www.itu.int/go/wrs-20)

#ITUWRS

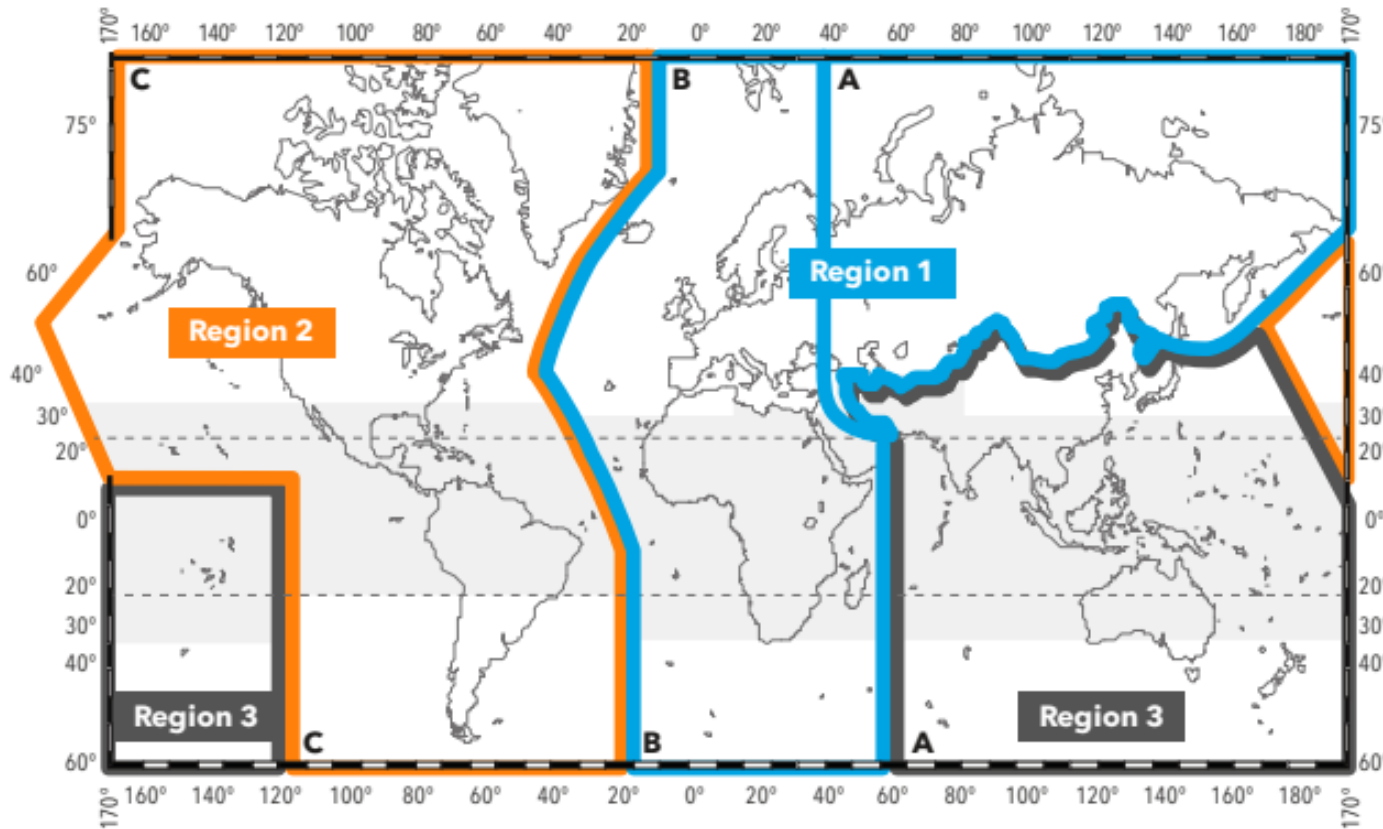


# World Radiocommunication Conferences (WRCs)

- Updated the Radio Regulations, the international treaty on the use of radio spectrum and satellite orbits
- Brought together all stakeholders in a process that is aimed at building consensus
- Provided a stable and predictable regulatory environment needed for future investments
- Enabled new radiocommunication systems and applications to access the radio spectrum
- Protected the operation of existing radiocommunication services
- Ensured the rational, equitable, efficient and economical use of the radio-frequency spectrum and satellite-orbit resources



# Worldwide or Regional Spectrum Harmonization

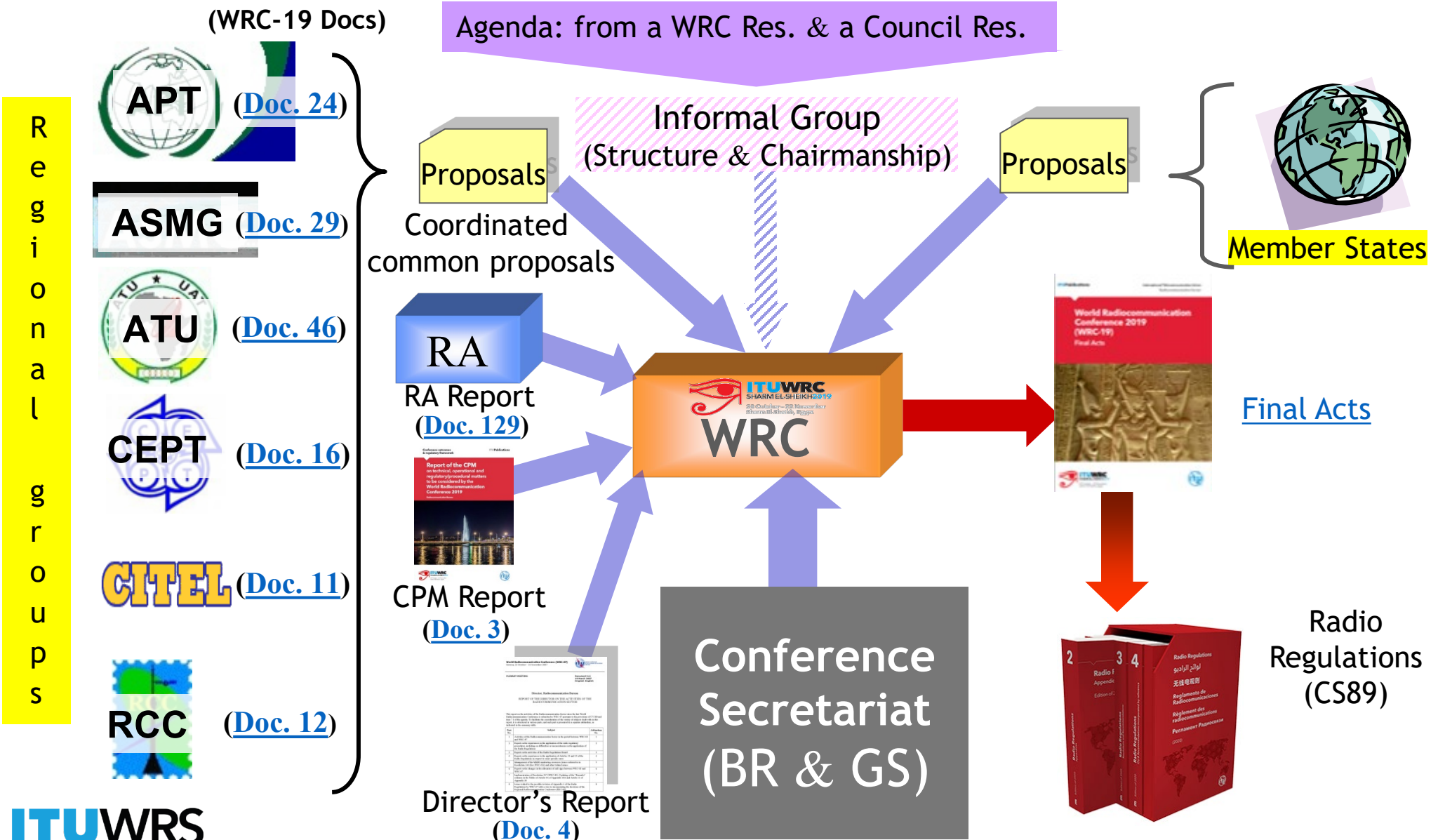


## Benefits:

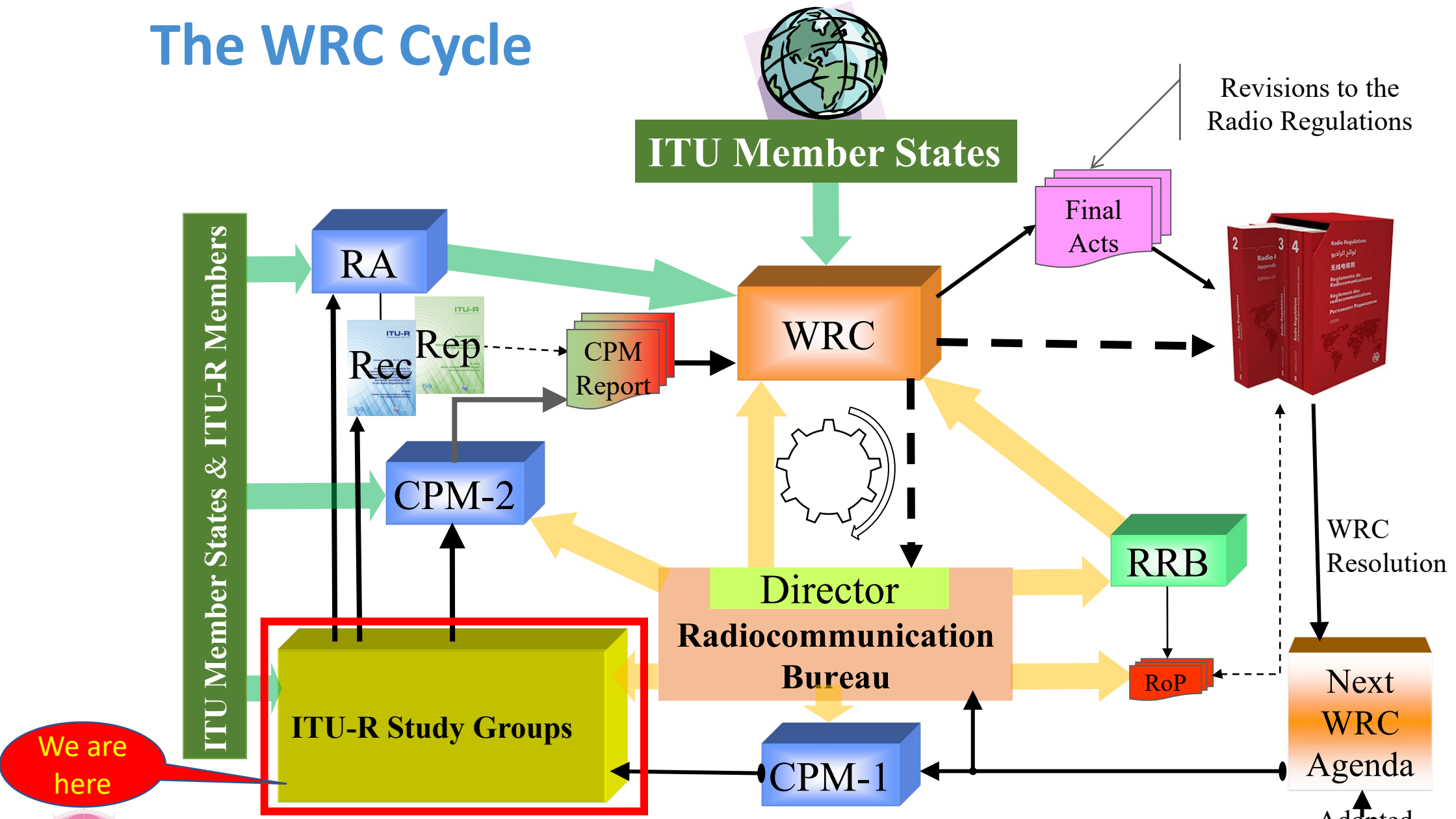
- Reduces the potential for **harmful interference**
- Enables interoperability and **international roaming**, allowing citizens to use the same device in different countries
- Increases economies of scale, thereby enabling **affordable devices and services**
- Supports **emergency communications**

# The WRC Process

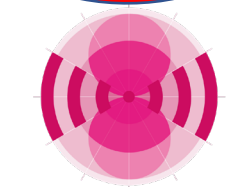
Agenda: from a WRC Res. & a Council Res.



# The WRC Cycle



We are here



**ITUWRS**  
ONLINE2020

RRB: Radio Regulations Board  
 RA: Radiocommunication Assembly  
 WRC: World Radiocommunication Conference  
 CPM: Conference Preparatory Meeting  
 Rec/Rep: ITU-R Recommendation/Report  
 RoP: Rules of Procedure  
 Adopted by ITU Council



# Main Steps towards WRC-23

**WRC-19**: WRC-23 agenda - [Resolution 811 \(WRC-19\)](#)

CPM23-1

25-26 Nov. 2019; Results [@CA/251](#)

Meetings of ITU-R SGs, WPs / TG responsible/contributing on AIs

CPM23-2 (\*\* Q2 of 2023)

[for final CPM Report to be available 5 months prior to WRC-23]

Final regional group meetings & national preparations  
**Member States' (common) proposals to WRC-23**

**RA-23**; **WRC-23** (\*\* Q4 of 2023)

**Council**: Res.1399 on WRC-23 agenda\*,  
Dates & venue still to be determined

\* see Council-20  
Doc. [C20/69](#)

National and regional preparations

\*\* Currently planned in



# Conference Preparatory Meeting for WRC-23 (CPM-23)

In accordance with Resolution ITU-R 2-8, the CPM shall prepare a consolidated Report on the ITU-R preparatory studies and possible solutions to the WRC agenda items, to be used in support of the work of World Radiocommunication Conferences. [More >](#)



[www.itu.int/ITU-R/go/rcpm](http://www.itu.int/ITU-R/go/rcpm)

Meetings and Events | Related activities | Highlights

References | Related ITU-R Texts | Circulars

## Work of the ITU-R responsible groups

- ▶ [ITU-R Preparatory Studies for WRC-23 \(updated 6 November 2020\)](#)
- ▶ [Regional preparation for WRC-23](#)
- ▶ [Proposed detailed structure of the Draft CPM Report to WRC-23 \(updated 11 September 2020\)](#) **TIES**
- ▶ [Preparation of the draft CPM Report to WRC-23 - \(CA/251 Addendum 1\)](#)

Constitution and Convention  
Final Acts of PP-18

## WRC-19 Outcomes (incl. RR Edition 2020)

- ▶ [Radio Regulations](#)
- ▶ [Rules of Procedure](#)
- ▶ [Final Acts WRC-19](#)
- ▶ [Minutes of the WRC-19 Plenaries](#)
- ▶ [WRC-19 decisions](#)

## Categorization (linked to WRC (P)Als; calling for ITU-R studies; addressed to BR; etc.)

- ▶ [W\(A\)RC Resolutions](#)
- ▶ [W\(A\)RC Recommendations](#)

## First Session FOR WRC-23: CPM23-1

## CPM23-1 DOCUMENTS

- ▶ Monday 2019-11-25 - Tuesday 2019-11-26
- ▶ Place : **Egypt, Sharm el-Sheikh**
- ▶ Status : **Confirmed** - [Add to Calendar](#)
- ▶ Invitation - (CA/247)
- ▶ List of Registered Participants
- ▶ Registration
- ▶ Information for participants
- ▶ CPM meetings Sharepoint
- ▶ Meeting sessions
- ▶ Captioning **TIES**
- ▶ Webcast **TIES**

- ▶ [Result of CPM23-1 - \(CA/251\)](#)
- ▶ Contributions "as received" **TIES**
- ▶ Contributions\* **TIES** - Template
- ▶ Administrative Documents (ADM) **TIES**
- ▶ Information Documents (INFO) **TIES**
- ▶ Temporary Documents (DT) **TIES**
- ▶ Informal documents on Sharepoint **TIES**
- ▶ Administrative Circulars (CA)
- ▶ Administrative Circulars (CACE)
- ▶ CPM-19 - Archives
- ▶ CPM Previous sessions - Archives

## Results of CPM23-1 and additional information



# First Session of CPM-23

See [Resolution ITU-R 2-8](#) on Conference Preparatory Meeting (CPM)

- ✓ **Sharm el-Sheikh, EGY, 25-26 Nov. 2019** (330 participants, 73 MS, 11 SM, 11 contributions)  
⇒ results published in CA/251 of 19 Dec. 2019 ([www.itu.int/md/R00-CA-CIR-0251/en](http://www.itu.int/md/R00-CA-CIR-0251/en))
- ✓ Define framework of preparatory studies:
  - **Structure of the draft CPM Report**  
(see the proposed detailed structure at: <https://www.itu.int/oth/R0A0A000014/en>) with **5 Chapters, one Annex and eight (co-)Rapporteurs**
  - **Identify responsible ITU-R Groups** for each WRC-23 agenda item (AI) & topic
    - ⇒ 8 existing Working Parties and
    - ⇒ one **new TG 6/1 for AI 1.5** (see ToR in Annex 9 of [CA/251](#) [see also the additional slide](#))
    - + 4 existing SGs for the WRC-27 preliminary agenda items**and contributing ITU-R groups** (see Annexes 4, 7 and 8 to [CA/251](#) + Add.1)
  - For the sharing and compatibility studies, service/application **characteristics & parameters** from contributing WPs are **required by 15 June 2021**  
**at the latest and unless otherwise specified** (e.g. 15 May 2021 in case of TG 6/1)



# ITU-R Responsible Groups activities

- ⇒ **Examine contributions from the membership**  
(Member States, Sector members, Associates, Academia) (see also [CACE/955](#))
- ⇒ **Ensure necessary coordination with the contributing groups**  
(liaison statements to and from contributing working parties)
- ⇒ **Carry out technical studies** (incl. compatibility & sharing studies)  
& **develop necessary draft ITU-R Rec. & Reports**  
for consideration by the relevant ITU-R Study Group(s)
- ⇒ **Develop draft CPM texts, including:**
  - **Executive Summary \*; Background \*; Summary & Analysis of study results**
  - **Proposed method(s) to satisfy the agenda items \***
  - **with associated examples of regulatory texts \***

to be sent to **CPM Chapter Rapporteurs** on time for **CPM23-2**
- ⇒ **Finalize the technical studies prior to RA-23**

\* Not needed for the draft CPM texts on the AI 9.1 topics and WRC-27 preliminary AIs, for which only a summary of the results of ITU-R studies should be prepared.



# CPM-23 Management Team

Organised in accordance with [Res. ITU-R 2-8](#) and composed of:

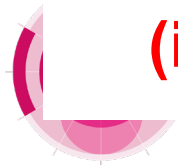
- ✓ CPM-23 Chairman, Vice-Chairmen and Chapter Rapporteurs (= Steering Committee)
- ✓ Chairmen of Study Groups and Responsible Groups

⇒ **Consolidate the draft CPM texts/chapters  
into the draft CPM Report to WRC-23 (as an input to CPM23-2)**

See also [CA/251 Add.1](#) on Preparation of the **draft CPM Report to WRC-23**

## Second Session of CPM-23

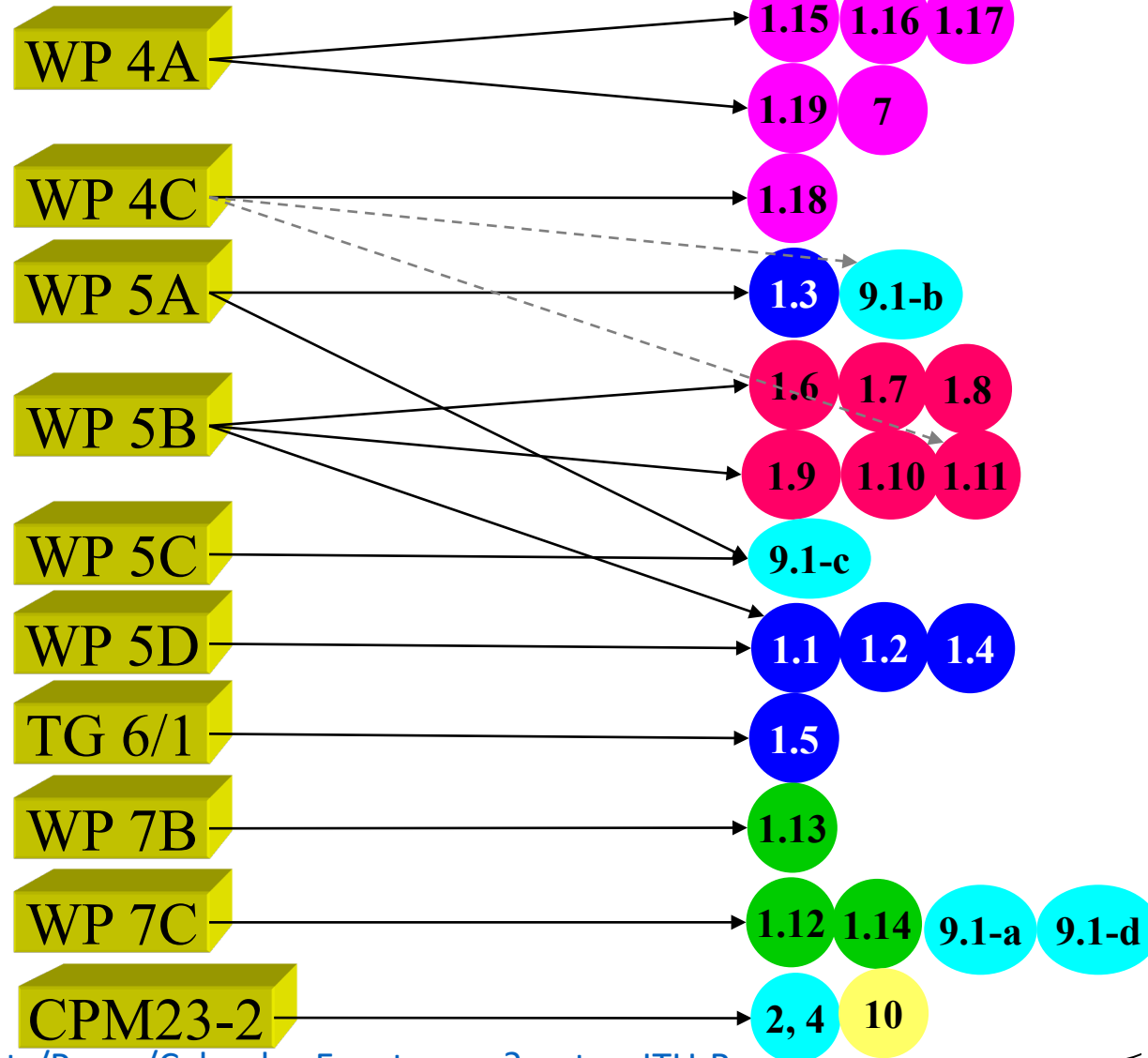
- **Based on the draft CPM Report**  
(available in six official ITU languages a minimum of 2 months before CPM23-2)
- **Consider contributions from ITU Member States  
& ITU-R Sector Members**
- **Consider also a draft of the BR Director's Report to WRC-23**
- ⇒ **Finalize the CPM Report to WRC-23**  
(incl. draft solutions (methods) to satisfy the agenda items)



# Summary of CPM Report Preparation

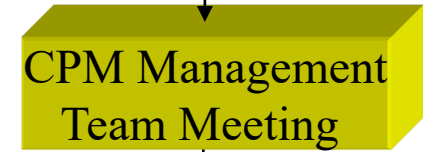
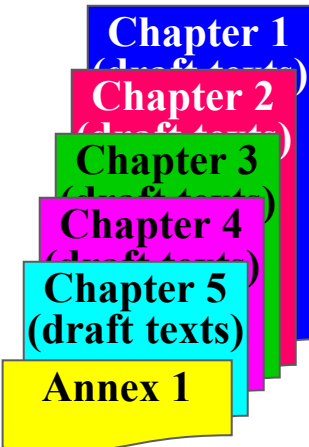
Responsible  
ITU-R Groups

WRC-23 agenda items (AI),  
incl. topics under AI 9.1



Dates/Deadlines

To CPM-23  
Chapter  
Rapporteurs  
**prior to  
21 October  
2022\***



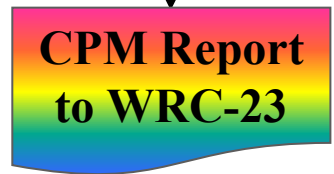
**[2-3  
Nov. 2022]\***



2 months  
prior to  
CPM23-2



**[2<sup>nd</sup> quarter  
of 2023]\*\***



5 months  
prior to  
WRC-23

Up-to-date information  
on next meetings  
at: [www.itu.int/en/events/Pages/Calendar-Events.aspx?sector=ITU-R](http://www.itu.int/en/events/Pages/Calendar-Events.aspx?sector=ITU-R)


\* May be postponed based on CPM23-2 dates


\*\* To be confirmed based on WRC-23 dates

# Topics on the WRC-23 Agenda


## WRC-23 agenda



**1.1** **Mobile**  $3.3 \leq \text{MS \& IMT} \leq 10.5 \text{ GHz}$

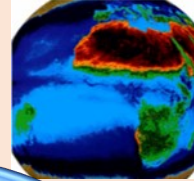
**1.2** 


**1.3**  $0.694 \leq \text{HIBS} \leq 2.7 \text{ GHz}$  

**1.4** **Broadcasting**  $470 \leq \text{BS, MS} \leq 960 \text{ MHz}$


**1.5** 





 **Spaceborne radar sounders (2<sup>nd</sup>ary)**


**EESS (active) @ 45 MHz**  **1.12**


**SRS @ 14.8-15.35 GHz** **1.13**

**Remote-sensing observation requirements - EESS (passive) @ 231.5-252 GHz** **1.14** 


**1.6**  **Sub-orbital vehicles**

**1.7** **Aviation** **New AMS(R)S) VHF alloc.**

**1.8**  **UAS CNPC links via FSS**

**1.9**  **Dig. techno. for aviation safety-of-life applications (App.27)**

**1.10** **New AMS alloc. (around 15.5 & 22 GHz) for non-safety applications**

**1.11** **Maritime** **GMDSS modernization and e-navigation** 


**A-ESIM & M-ESIM (GSO Ku-FSS)** **1.15**

**ESIM (NGSO Ka-FSS)** **1.16** 

**ISS / Sat.-to-Sat. links** **1.17**

**NB MSS for IoT (L/S-bands)** **1.18**

**Ka-FSS (s-E) (R2)** **1.19**  

**Satellite regulatory issues** **7** 

*Note: The WRC-23 agenda item numbers are indicated in italic (agenda items 2, 3, 4, 5, 6, 8, 9 (9.1, 9.2, 9.3) and 10 are not mentioned here).*

► **19 specific and 11 standing items, see [Res. 811 \(WRC-19\)](#)**



# WRC-23 Agenda items on Fixed, Mobile & Broadcasting issues

WRC-23 agenda items 1.1 to 1.5



1.1 ➤ In the band **4 800-4 990 MHz** (identified for IMT in 39 countries), consider the pfd criteria in No. **5.441B** for the **protection of stations of the aeronautical and maritime mobile services** located in international airspace and waters from **other stations located within national territories** ➤ [Res. 223 \(Rev.WRC-19\)](#)

1.2 ➤ Consider the **identification for IMT** of the following frequency bands: **3 300-3 400 MHz** (sub-Reg.1 & Reg.2), **3 600-3 800 MHz** (Reg.2), **6 425-7 025 MHz** (Reg.1), **7 025-7 125 MHz** (globally) and **10.0-10.5 GHz** (Reg.2) ➤ [Res. 245 \(WRC-19\)](#)

1.3 ➤ Consider a **primary allocation** of the band **3 600-3 800 MHz** to the **mobile service** within **Region 1** ➤ [Res. 246 \(WRC-19\)](#)

1.4 ➤ Consider 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 ➤ [Res. 247 \(WRC-19\)](#)



studies of bands **694-960 MHz**, **1 710-1 885 MHz** (1 710-1 815 MHz for ↑ only in Reg. 3), **2 500-2 690 MHz** (2 500-2 535 MHz for ↑ only in Reg. 3, except 2 655-2 690 MHz in Reg. 3)

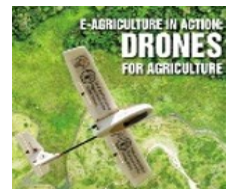
1.5 ➤ Review the **spectrum use and spectrum needs of existing services** in **470-960 MHz** in **Region 1** and consider **regulatory actions** in **470-694 MHz** in **Region 1** ➤ [Res. 235 \(WRC-15\)](#)



# WRC-23 Agenda items on Aeronautical & Maritime issues

WRC-23 agenda items 1.6 to 1.11

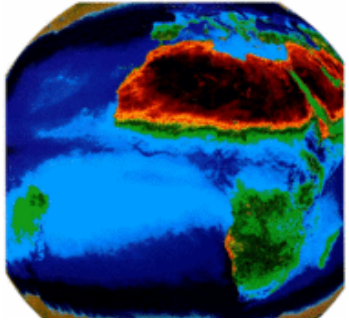
- 1.6 ➤ Consider regulatory provisions to facilitate **radiocommunications for sub-orbital vehicles** ➤ [Res. 772 \(WRC-19\)](#)
- 1.7 ➤ Consider **AMS(R)S allocation** for both the E-s & s-E directions of **aeronautical VHF communications in all or part of the frequency band 117.975-137 MHz** ➤ [Res. 428 \(WRC-19\)](#)
- 1.8 ➤ Review and, if necessary, revise **Res. 155 (Rev.WRC-19) & No. 5.484B** to accommodate the **use of FSS networks by control and non-payload communications of unmanned aircraft systems** ➤ [Res. 171 \(WRC-19\)](#)
- 1.9 ➤ Review Appendix **27**, to accommodate **digital technologies for commercial aviation safety-of-life applications** in **existing HF bands** allocated to the **AM(R)S** and ensure coexistence of current and modernized HF systems ➤ [Res. 429 \(WRC-19\)](#)
- 1.10 ➤ Consider **spectrum needs**, for possible **new AMS allocations** for **non-safety aeronautical mobile applications** ➤ [Res. 430 \(WRC-19\)](#)
- 1.11 ➤ Consider possible **regulatory actions** to support the **modernization of the GMDSS** and **implementation of e navigation** ➤ [Res. 361 \(Rev.WRC-19\)](#)



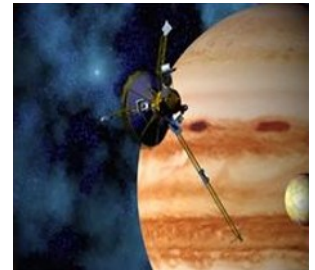
# WRC-23 Agenda items on Science issues

WRC-23 agenda items 1.12 to 1.14

- 1.12 ➤ Consider new **secondary allocation** to the **EESS (active) service** for **spaceborne radar sounders** within the range of frequencies **around 45 MHz** ➤ [Res. 656 \(Rev.WRC-19\)](#)



- 1.13 ➤ Consider to **upgrade of the allocation** of the frequency band **14.8-15.35 GHz** to the **space research service** ➤ [Res. 661 \(WRC-19\)](#)

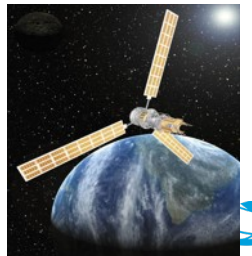


- 1.14 ➤ Consider possible adjustments of the existing or possible new primary **frequency allocations to EESS (passive)** in the frequency range **231.5-252 GHz**, to ensure alignment with more up-to-date **remote-sensing observation requirements** ➤ [Res. 662 \(WRC-19\)](#)

# WRC-23 Agenda Items on Satellite issues

WRC-23 agenda items 1.15 to 1.19

- 1.15 ➤ Consider the use of the band **12.75-13.25 GHz** (E-s) by **earth stations on aircraft and vessels** communicating with **GSO** space stations in the **FSS globally** ➤ [Res. 172 \(Rev.WRC-19\)](#)
- 1.16 ➤ Consider the use of the bands **17.7-18.6 GHz** and **18.8-19.3 GHz** and **19.7-20.2 GHz** (s-E) and **27.5-29.1 GHz** and **29.5-30 GHz** (E-s) by **non-GSO FSS** earth stations in motion (ESIM) ➤ [Res. 173 \(WRC-19\)](#)
- 1.17 ➤ Consider **inter-satellite links** in specific frequency bands\*, or portions thereof, by adding an inter-satellite service allocation where appropriate  
\* ➤ [Res. 773 \(WRC-19\)](#) refers to **satellite-to-satellite links** in bands **11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz** and **27.5-30 GHz**
- 1.18 ➤ Consider **spectrum needs** and potential **new MSS allocations\*** for future development of **narrowband MSS systems** ➤ [Res. 248 \(WRC-19\)](#)  
\* in the bands **1 695-1 710 MHz** (R2), **2 010-2 025 MHz** (R1), **3 300-3 315 MHz** and **3 385-3 400 MHz** (R2)
- 1.19 ➤ Consider new **primary allocation** to the FSS (s-E) direction in the frequency band **17.3-17.7 GHz** in **Region 2** ➤ [Res. 174 \(WRC-19\)](#)

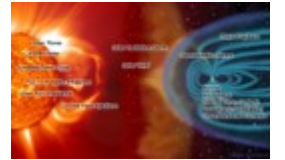




# Other topics on the WRC-23 Agenda

WRC-23 agenda item 9.1

- a) Consider 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 RR** without placing additional constraints on incumbent services ▶ [Res. 657 \(Rev.WRC-19\)](#)
- b) Consider **amateur service & 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 RNSS (s-E)** operating in the same band ▶ [Res. 774 \(WRC-19\)](#)
- c) Study the **use of IMT system for fixed wireless broadband** in the frequency bands **allocated to the fixed services** on primary basis ▶ [Res. 175 \(WRC-19\)](#)

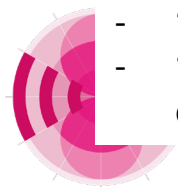


## Additional topic identified at CPM23-1

- d) **Protection of EESS (passive)** in the frequency band **36-37 GHz** from **non-GSO FSS space stations** ▶ [WRC-19 Doc. 573 Sec. 35.2](#)

Note: CPM23-1 also identified responsible ITU-R Working Parties (WPs) for the following studies to be reported directly to the BR Director:

- “Updating provisions related to aeronautical services in the Radio Regulations” (by WP 5B, see [CA/251 Annex 4](#) and Resolution **427 (WRC-19)**)
- “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” (by WP 5D, see [CA/251 Annex 4](#) and [WRC-19 Document 550](#))



# Other standing items on the WRC-23 Agenda

WRC-23 agenda item 2

Consider the **new approved versions**, if any, of the **ITU-R Recommendation incorporated by reference** in the RR (list in RR Vol.4, mandatory application)

▶ [Res. 27 \(Rev.WRC-19\)](#)

WRC-23 agenda item 4

**Review of the W(A)RC Resolutions and Recommendations not related to other Als** (see RR Vol. 3), considering **progress of ITU-R studies, implementation of previous WRC decisions, end of transitional measures**, etc.

▶ [Res. 95 \(Rev.WRC-19\)](#)

WRC-23 agenda item 8

Consider requests from administrations **to delete their country footnotes** or to have their **country name** deleted from footnotes, if no longer required (see RR Article 5), **towards more spectrum harmonization**

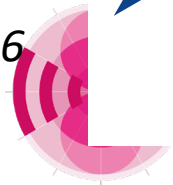
▶ [Res. 26 \(Rev.WRC-19\)](#)

# WRC-27 Preliminary Agenda items

WRC-23 agenda item 10

▶ [see Res. 812 \(WRC-19\)](#)

- 2.1 ▶ Consider **additional RLS spectrum allocations** on a co-primary basis in the band **231.5-275 GHz** and **identification for RLS applications** in bands in the range **275-700 GHz** for millimetre and sub-millimetre wave **imaging systems** ▶ [Res. 663 \(WRC-19\)](#)
- 2.2 ▶ Consider the technical, operational and regulatory measures, as appropriate, to facilitate the **use of the bands 37.5-39.5 GHz (s-E), 40.5-42.5 GHz (s-E), 47.2-50.2 GHz (E-s) and 50.4-51.4 GHz (E-s)** by **aeronautical and maritime earth stations in motion (ESIM)** communicating with **GSO FSS** space stations ▶ [Res. 176 \(WRC-19\)](#)
- 2.3 ▶ Consider the allocation of all or part of the frequency band **[43.5-45.5 GHz]** to the **fixed-satellite service** ▶ [Res. 177 \(WRC-19\)](#)
- 2.4 ▶ Consider the introduction of **pfd and e.i.r.p. limits in Article 21** for the frequency bands **71-76 GHz** and **81-86 GHz** ▶ [Res. 775 \(WRC-19\)](#)
- 2.5 ▶ Consider conditions for the use of the **71-76 GHz** and **81-86 GHz** bands by stations in the **satellite services** to ensure **compatibility with passive services** ▶ [Res. 776 \(WRC-19\)](#)
- 2.6 ▶ Consider regulatory provisions for recognition of **space weather sensors** and their protection in the RR, taking into account the results of ITU R studies reported to **WRC-23 under agenda item 9.1** ▶ [Res. 657 \(Rev.WRC-19\)](#)

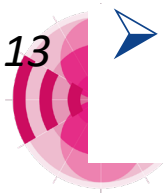


# WRC-27 Preliminary Agenda items (cont'd)

WRC-23 agenda item 10

▶ [see Res. 812 \(WRC-19\)](#)

- 2.7 ▶ Consider **NGSO FSS system feeder links** in the bands **71-76 GHz** (space-to-Earth and proposed new Earth-to-space) and **81-86 GHz** (Earth-to-space) ▶ [Res. 178 \(WRC-19\)](#)
- 2.8 ▶ Consider **space-to-space links** in the bands **[1 525-1 544 MHz]**, **[1 545-1 559 MHz]**, **[1 610-1 645.5 MHz]**, **[1 646.5 1 660.5 MHz]** and **[2 483.5-2 500 MHz]** among **NGSO and GSO satellites** operating in the **MSS** ▶ [Res. 249 \(WRC-19\)](#)
- 2.9 ▶ Consider spectrum allocations to the **MS** in the band **1 300-1 350 MHz** to facilitate the **future development of mobile-service applications** ▶ [Res. 250 \(WRC-19\)](#)
- 2.10 ▶ Consider **improving the utilization** of the **VHF maritime frequencies** in Appendix 18 ▶ [Res. 363 \(WRC-19\)](#)
- 2.11 ▶ Consider **new EESS (Earth-to-space) allocation** in the band **22.55-23.15 GHz** ▶ [Res. 664 \(WRC-19\)](#)
- 2.12 ▶ Consider **use of existing IMT identifications** in the frequency range **694-960 MHz** by consideration of the possible **removal of the limitation regarding aeronautical mobile** in the IMT for the **use of IMT user equipment by non-safety applications**, where appropriate ▶ [Res. 251 \(WRC-19\)](#)
- 2.13 ▶ Consider a possible **worldwide allocation** to the **MSS** for the **future development of narrowband mobile-satellite systems** in the range **[1.5-5 GHz]** ▶ [Res. 248 \(WRC-19\)](#)



# ITU-R Preparatory Studies for WRC-23

[www.itu.int/go/rcpm-wrc-23-studies](http://www.itu.int/go/rcpm-wrc-23-studies)

- Webpage updated on a regular basis after meetings of the responsible groups

Resolution **811 (WRC-19)** contains the WRC-23 agenda.

WRC-23 agenda Item (Chapter)	Issue	WRC Resolution (*)	Responsible Group(s)	Information from Responsible Group(s) <sup>ITU-R</sup>
1		-	-	-
1.1 (1)		Res.223 (Rev.WRC-19)	WP 5B (1) WP 5D (1)	Doc. 5B/93 Sec. 2.3, 7 & 10.2.1.1 Doc. 5D/134 Chapter 4 Attachment 4.16 (b) & Doc. 5D/222, Chapter 2 Attachments 2.8 (a) (b) & 2.9 (a)(b), 2.11 (a) & 2.17 (a) & Chapter 4 Sections 4 & 5 & Attachments 4.8 & 4.9 (b)
1.2 (1)		Res.245 (WRC-19)	WP 5D	Doc. 5D/134, Chapter 4 Attachment 4.18 (b) & Doc. 5D/222, Chapter 2 Attachments 2.8 (a) (b) & 2.9 (a) (b), 2.11 (a) & 2.17 (a) & Chapter 4 Sections 4 & 5 & Attachments 4.8 & 4.9 (b)
1.3 (1)		Res.246 (WRC-19)	WP 5A	Doc. 5A/85 Sec.2, 3.6, 4 & 5 & Annexes 4 (c) & 5 (b)
1.4 (1)		Res.247 (WRC-19)	WP 5D	Doc. 5D/134, Chapter 4 Attachments 4.20 (b), 4.21 (c) & 4.22 & Doc. 5D/222, Chapter 2 Attachments 2.8 (a) (b) & 2.9 (a) (b), 2.11 (a) & 2.17 (a) & Chapter 4 Sections 4 & 5 & Attachments 4.8 & 4.9 (b)
1.5 (1)		Res.235 (WRC-15)	TG 6/1 (2)	See Administrative Circular CA/251
1.6 (2)		Res.772 (WRC-19)	WP 5B (3)	Doc. 5B/93 Sec. 2.1, 2.7, 7 & 10.2.1.2
1.7 (2)		Res.428 (WRC-19)	WP 5B (3)	Doc. 5B/93 Sec. 2.1, 2.7, 7, 10.2.1.3 & 10.2.2.1
1.8 (2)		Res.171 (WRC-19) - Res.155 (Rev.WRC-19)	WP 5B (3)	Doc. 5B/93 Sec. 2.1, 2.6, 2.7, 7, 10.5.1.1 & 10.5.2
1.9 (2)		Res.429 (WRC-19)	WP 5B	Doc. 5B/93 Sec. 2.7, 7 & 10.2.1.4
1.10 (2)		Res.430 (WRC-19)	WP 5B	Doc. 5B/93 Sec. 2.7, 7 & 10.2.1.5
1.11 (2)		Res.361 (Rev.WRC-19)	WP 5B (4)	Doc. 5B/93 Sec. 2.7, 7 & 10.3.1.1 & Annex 1 (b)
1.12 (3)		Res.656 (Rev.WRC-19)	WP 7C	Doc. 7C/22 Sec. 3.1.5
1.13 (3)		Res.661 (WRC-19)	WP 7B	Doc. 7B/14 Sec. 2.3 & Annexes 1, 2 & 3 (b)
1.14 (3)		Res.662 (WRC-19)	WP 7C	Doc. 7C/22 Sec. 3.3.7
1.15 (4)		Res.172 (WRC-19)	WP 4A	Doc. 4A/30 & Annexes 1 & 2 (b)
1.16 (4)		Res.173 (WRC-19)	WP 4A	Doc. 4A/30 & Annexes 1 & 2 (b)
1.17 (4)		Res.773 (WRC-19)	WP 4A	Doc. 4A/30 & Annexes 1 & 2 (b)
1.18 (4)		Res.248 (WRC-19)	WP 4C	Doc. 4C/30 & Annexes 1 & 2 (b)
1.19 (4)		Res.174 (WRC-19)	WP 4A	Doc. 4A/30 & Annexes 1 & 2 (b)

# Information on the regional preparation for WRC-23

➤ [Resolution 72 \(Rev. WRC-19\)](#)

[www.itu.int/go/wrc-23-regional](http://www.itu.int/go/wrc-23-regional)

## Asia-Pacific Telecommunity (APT)



- ▶ <http://www.aptsec.org/APTAPG>
- ▶ Chairman, APG-23:  
Dr. Kyu-Jin Wee (Rep. of Korea),  
[kjwee56@rapa.or.kr](mailto:kjwee56@rapa.or.kr); [kjwee56@hotmail.com](mailto:kjwee56@hotmail.com)

## Arab Spectrum Management Group (ASMG)



- ▶ Chairman, AMSG:  
Mr. Tariq AL AWADHI, UAE,  
[tariq.alawadhi@tra.gov.ae](mailto:tariq.alawadhi@tra.gov.ae)

## African Telecommunications Union (ATU)



- ▶ <http://www.atu-uat.org>
- ▶ Secretary General – African Telecommunications Union:  
Mr John OMO  
[sg@atu-uat.org](mailto:sg@atu-uat.org)

## European Conference of Postal and Telecommunications Administrations (CEPT)



- ▶ <http://www.cept.org/ecc/groups/ecc/cpg>
- ▶ Chairman, CPG:  
Mr. Alexandre Kholod, Switzerland,  
[alexandre.kholod@bakom.admin.ch](mailto:alexandre.kholod@bakom.admin.ch)

## Inter-American Telecommunication Commission (CITEL)



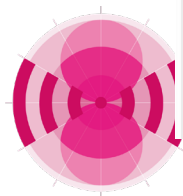
CITEL

- ▶ <http://www.citel.oas.org/en/Pages/PCCII>
- ▶ Chairman of the PCC.II Working Group for the Preparation of CITEL for Regional and World Radiocommunication Conferences:  
Mr. Victor Martinez, Mexico,  
[victor.martinezv@ift.org.mx](mailto:victor.martinezv@ift.org.mx)

## Regional Commonwealth in the Field of Communications (RCC)



- ▶ <http://www.en.rcc.org.ru>
- ▶ Chairman, RCC WG WRC-23/RA-23:  
Mr. Albert Nalbandian, Armenia,  
[abo441@mail.ru](mailto:abo441@mail.ru)
- ▶ Preliminary position of the RCC Administrations on the WRC323 agenda items (as of 4 September 2020)



# ITU Inter-Regional Workshops on WRC-23 Preparation

➤ Resolution 72 (Rev. WRC-19)

**[1<sup>st</sup> IRW in  
Q4  
2021]**

- To be scheduled halfway through the preparatory cycle
  - ⇒ Presentation and review of the on-going preparatory studies of the ITU-R responsible groups for CPM-23
  - ⇒ Presentation of the organization, preliminary views, draft priorities and positions of the regional groups

**[2<sup>nd</sup> IRW in  
Q4  
2022]**

- To be scheduled few months prior to CPM23-2
  - ⇒ Presentation of the draft CPM Report to WRC-23 (explanation of the draft Methods to satisfy WRC-23 agenda items)
  - ⇒ Presentation and review of the regional groups' draft views, positions and common proposals

**[3<sup>rd</sup> IRW  
in Q3  
2023]**

- To be scheduled few months prior to WRC-23
  - ⇒ Presentation of the CPM & Dir. Reports to WRC-23
  - ⇒ Presentation and review of the regional groups' draft views, positions and common proposals



# Thank you!

ITU – Radiocommunication Bureau

Questions to [brmail@itu.int](mailto:brmail@itu.int) or [xxxx@itu.int](mailto:xxxx@itu.int)

## Additional slides on

- RA-19 & WRC-19 numbers, key outcomes and access to them
- Numbers for WRC-19 new Res. & new Art. 5 footnotes
- Other information on CPM-23 and CPM23-1
- Radio services abbreviations



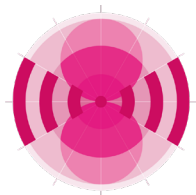
# Radiocommunication Assembly 2019

- Held on 21 – 25 October 2019, in Sharm El-Sheikh, Egypt
- **521** participants, **91** ITU Member States, **48** ITU-R Sector members
- **Maintained** the ITU-R structure with **6** ITU-R Study Groups, CCV, RAG and CPM,  
**Appointed** Chairmen and Vice-Chairmen of these groups (see [Res. ITU-R 4-8](#) & [Doc. RA19/PLEN/84](#))  
**Approved** programme of work/Questions ([Res. ITU-R 5-8](#)) &  
working methods (Res. ITU-R [1-8](#) & [Res. ITU-R 2-8](#))
- **Approved** **23** revised ITU-R Resolutions (on e.g. IMT, Sat., IoT, SRD, PPDR, CRS, ENG, etc.)  
**2** new ITU-R Resolutions (on broadcasting)
- **Approved** **5** ITU-R Recommendations (including M.1036-6 on frequency arrangements for terrestrial IMT)



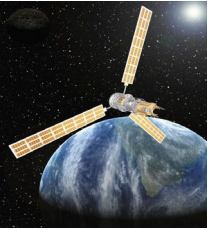
# WRC-19 in numbers

- 4 week discussions, 28 October - 22 November 2019 , Sharm El-Sheikh, Egypt
- 3 420 participants , 163 administrations, 129 other entities, including industry
- 38 agenda items and issues, 568 documents, 5811 proposals
- Spectrum and regulations for most radiocommunication services

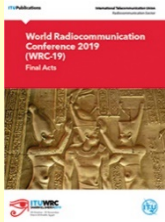


# Key outcomes of WRC-19

- Identification of **17.5 GHz** of **additional harmonized frequency bands** for **IMT** (incl. IMT-2020, 86% harmonized globally in 3 bands)
- Identification of **additional harmonized frequency bands** for **HAPS systems**, now **5.25 GHz** of spectrum is available for HAPS, ~46% harmonized globally in 4 bands
- Expansion of a truly **GMDSS**, identification of spectrum for **NAVDAT, AMRD, VDES**
- Definition of a **stable regulatory framework** for **non-GSO systems** bases on a milestone-approach
- Opening of **new orbital slots** in the **Broadcasting Satellite Service Plan**
- Definition of **regulatory, operational and technical conditions** for **GSO ESIMs**
- Approbation of new WRC Recommendations to encourage use of **globally or regionally harmonized frequency bands** for **evolving ITS** and continue the **development of spectrum harmonization of RTTS**
- Global harmonization of part of the **amateur service spectrum**
- New measures limiting **unauthorized uplink ES transmissions**
- **Gender Declaration**



# WRC-19 outcomes & follow-up



## WRC-19 Final Acts

[www.itu.int/pub/R-ACT-WRC.14-2019/en](http://www.itu.int/pub/R-ACT-WRC.14-2019/en)

ITU Council 2020 documents on WRC-19 and WRC-23  
(see Doc. [C20/27](#) & [C20/56](#) and [C20/55](#) & [C20/69](#) respectively)

See relevant BR Circular Letters at:

[www.itu.int/md/R00-CR-CIR/en](http://www.itu.int/md/R00-CR-CIR/en)

## Circulars

	Number	Title
<input type="checkbox"/>	<a href="#">[ 456 ]</a>	WRC-19 decisions included in the Minutes of Plenary meetings
<input type="checkbox"/>	<a href="#">[ 455 ]</a>	Implementation of Resolution 559 [COM5/3] (WRC-19)



Radio Regulations – Edition of 2020  
available on the [MyITU](#) portal

# Access to WRC-19 outcomes

[www.itu.int/go/wrc-19](http://www.itu.int/go/wrc-19)

World Radiocommunication Conference 2019 (WRC-19), Sharm el-Sheikh, Egypt, 28 October to 22 November 2019



YOU ARE HERE HOME > ITU-R > CONFERENCES AND MEETINGS > WRC > WRC-19

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WRC-19 News Invitation Letters and Credentials Contacts



WRC-19 documents



▶ How Mexico seeks to connect its rural citizens better: Arturo Robles (VIDEO)  
05 February 2020

▶ WRC-19: Enabling global radiocommunications for a better tomorrow  
02 December 2019

▶ WRC-19 identifies additional frequency bands for 5G  
22 November 2019

▶ WRC-19 identifies additional frequency bands for High Altitude Platform Station systems  
22 November 2019

▶ ITU Members agree to new milestones for non-geostationary satellite deployment  
20 November 2019

About WRCs

WRC-19 Homepage

Registration to RA-19 and WRC-19:

- ▶ Delegate registration
- ▶ Media accreditation

Host Country website

WRC-19 Documents and Proposals

Preparation of proposals for the work of WRC-19

Practical Information for Participants

- ▶ WRC Security Briefing
- ▶ Local Transportation

WRC-19 documents

▶ Final Acts

▶ Minutes of the Plenary Meetings

▶ Contributions (C)

▶ WRC-19 Proposal Management System - This tool provides an easy-to-use web access to the proposals for the work of the Conference

▶ Temporary Documents (DT)

▶ Information Documents (INFO) English only

▶ Administrative Documents (ADM) English only

▶ WRC-19 SharePoint

▶ Other Documents and Electronic Resources

Quick Links

- ▶ Webcast
- ▶ Captioning
- ▶ WRC-19 SharePoint

WRC-19 Final Acts

Minutes of the Plenary Meetings

WRC-19 Documents (Proposals, White, White Series, Blue, Pink)

Proposal (+ Doc.) Management System

Access to all other documents, incl. TD, Blue and Pink series

Special ITU News Magazine WRC-19 Key Outcomes



# WRC-19 Proposal (+Doc.) Management System

[www.itu.int/net4/Proposals/WRC19/Main](http://www.itu.int/net4/Proposals/WRC19/Main)

WRC-19

See Report of the CPM

Full Text Search



Filtering

May also be used to display CPM Report regulatory examples

Export content(s)

Export results

970 documents, 5811 proposals

Overall numbers of issued documents with proposals\*  
(\*incl. typically ADD/MOD/SUP/NOC on RR provisions)

English	Agenda Item	Action	Source	Doc. Number	Proposal	Provision/Reference	Mapping	Destination	Received	Properties	
		1.13	MOD	AHGPL4A	544	4	5.338A	Vol.1/Chp. II	COM7	11/21/2019	
		1.13	MOD	B61	556	1	5.338A	Vol.1/Chp. II	PLEN	11/21/2019	
		1.6	MOD	B60	555	1	5.338A	Vol.1/Chp. II	PLEN	11/21/2019	
		1.8	MOD	AHGPL4C	529 R1	1	1 610-1 660 MHz	Vol.1/Chp. II	PLEN	11/21/2019	
		1.8	ADD	AHGPL4C	529 R1	2	5.ADJBAND	Vol.1/Chp. II	PLEN	11/21/2019	
		1.8	ADD	AHGPL4C	529 R1	3	5.INBAND	Vol.1/Chp. II	PLEN	11/21/2019	
		1.8	MOD	B61	556	2	1 610-1 660 MHz	Vol.1/Chp. II	PLEN	11/21/2019	
		1.8	ADD	B61	556	3	5.ADJBAND	Vol.1/Chp. II	PLEN	11/21/2019	
		1.8	ADD	B61	556	4	5.INBAND	Vol.1/Chp. II	PLEN	11/21/2019	

# WRC-19 PMS filtering (ex. for AI 1.13)

[www.itu.int/net4/Proposals/WRC19/Main](http://www.itu.int/net4/Proposals/WRC19/Main)

WRC-19 See Report of the CPM

Full Text Search

**Filtering**

Document Type/Color: **Blue**

Agenda Item: 1.13

Action: Any Value

Source: Any Value

Doc. Number (e.g.: 5 A10):

Proposal Number:

Provision:

Mapping: Any Value

Subject: Any Value

Destination: Any Value

Received Since:

Received Before:

**Filtering to display only the Blue documents/proposals approved by the Plenary on agenda item 1.13 (IMT)**

2 documents, 22 proposals

English >	Agenda Item	Action	Source	Doc. Number	Proposal	Provision/Reference	Mapping	Destination	Received	Properties
	1.13	MOD	B61	556	1	5.338A	Vol.1/Chp. II	PLEN	11/21/2019	
	1.13	MOD	B61	556	7	22-24 75 GHz	Vol.1/Chp. II	PLEN	11/21/2019	

# WRC-19 new Resolutions and Recommendations

WRC-19 No.	Res. No.	WRC-19 No.	Res. No.	WRC-19 No.	Res. No.
COM4/1	427	COM5/9	660	COM6/15	248
COM4/2	240	COM5/10	769	COM6/16	174
COM4/3	165	COM5/11	770	COM6/17	774
COM4/4	166	COM5/12	771	COM6/18	175
COM4/5	167			COM6/19	812
COM4/6	168	COM6/1	811	COM6/20	663
COM4/7	241	COM6/2	245	COM6/21	176
COM4/8	242	COM6/3	246	COM6/22	177
COM4/9	243	COM6/4	247	COM6/23	775
COM4/10	244	COM6/5	772	COM6/24	776
		COM6/6	428	COM6/25	178
COM5/1	22	COM6/7	171	COM6/26	249
COM5/2	558	COM6/8	429	COM6/27	250
COM5/3	559	COM6/9	430	COM6/28	363
COM5/4	768	COM6/10	661	COM6/29	664
COM5/5	32	COM6/11	662	COM6/30	251
COM5/6	169	COM6/12	172		
COM5/7	35	COM6/13	173	<b>WRC-19 No.</b>	<b>Rec. No.</b>
COM5/8	170	COM6/14	773	COM4/1	208





# WRC-19 new RR Article 5 footnotes

WRC-19 No.	Final Acts No.
5.A18	5.82C
5.A11	5.166B
5.B11	5.166C
5.E11	5.166E
5.C11	5.166D
5.D11	5.166A
5.169 <i>bis</i>	5.169A
5.A11 <i>bis</i>	5.169B
5.A17	5.203C
5.AA17	5.209A
5BB17	5.218A
5.A192	5.228AB
5.B192	5.228AC
5.A12	5.260A
5.B12	5.260B
5.C12	5.264A
5.D12	5.264B
5.ADJBAND	5.373
5.INBAND	5.373A

WRC-19 No.	Final Acts No.
5.A116	5.446D
5.A15	5.517A
5.B114	5.530E
5.C114	5.532AA
5.A113	5.532AB
5.D114	5.534A
5.F114	5.543B
5.G114	5.550D
5.A16	5.550C
5.B16	5.550E
5.BCD113	5.550B
5.F113	5.553A
5.H113	5.553B
5.A919	5.555C
5.J113	5.559AA
5.X115	5.564A

# Conference Preparatory Meeting for WRC-23 (CPM-23)

[www.itu.int/ITU-R/go/rcpm](http://www.itu.int/ITU-R/go/rcpm)

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# Draft CPM Report – ToC

(see Annex 6 to [CA/251](#))

<u>Chapters of the draft CPM Report</u>	<u>WRC-23 agenda items</u>
<b>1.</b> Fixed, Mobile and Broadcasting issues	<b>1.1, 1.2, 1.3, 1.4, 1.5</b>
<b>2.</b> Aeronautical and maritime issues	<b>1.6, 1.7, 1.8, 1.9, 1.10, 1.11</b>
<b>3.</b> Science issues	<b>1.12, 1.13, 1.14</b>
<b>4.</b> Satellite issues	<b>1.15, 1.16, 1.17, 1.18, 1.19, 7</b>
<b>5.</b> General issues	<b>2, 4, 9.1 topics a), b), c), d)</b>
Annex 1	<b>Information on WRC-23 agenda item 10 (WRC-27 preliminary agenda items)</b>

# CPM Chapter Rapporteurs

<u>Chapters</u>	<u>(Co-)Rapporteurs</u>
1. Fixed, Mobile and Broadcasting issues	<b>Dr. H. ATARASHI (J)</b> for Als 1.1, 1.2 and 1.4 <b>Mr. U.A. MAHMUD (NIG)</b> for Als 1.3 and 1.5
2. Aeronautical and maritime issues	<b>Mr. M. ALHASSANI (UAE)</b>
3. Science issues	<b>Mr. T. A. BAKAUS (B)</b>
4. Satellite issues	<b>Ms. F. MAGNIER (F)</b> for Als 1.15, 1.16, 1.17, 1.18, 1.19 <b>Mr. G. KWIZERA (RRW)</b> for AI 7
5. General issues	<b>Mr. J. HUANG (CHN)</b> <b>Dr. J. PARK (KOR)</b>

(see details at [www.itu.int/en/ITU-R/study-groups/rcpm/Pages/cpm-23-chp-rapporteurs.aspx](http://www.itu.int/en/ITU-R/study-groups/rcpm/Pages/cpm-23-chp-rapporteurs.aspx))

# Structure of the draft CPM texts for an agenda item in a given chapter

(see Annexes 6 and 11 to [CA/251](#))

<b>Chapter N</b>	
<b>Agenda Item 1.XY</b>	
[Relevant WRC Resolutions if any]	
<b>N/1.XY/1</b>	<b>Executive Summary*</b>
<b>N/1.XY/2</b>	<b>Background*</b>
<b>N/1.XY/3</b>	<b>Summary and Analysis of the results of ITU-R studies, including a list of relevant ITU-R Recommendations</b>
<b>N/1.XY/4</b>	<b>Method(s) to satisfy the agenda Item</b>
<b>N/1.XY/5</b>	<b>Regulatory and procedural considerations</b>

\* Not more than half a page of text

<b>Chapter 5</b>
<b>Agenda Item 9.1(9.1-[x])</b>

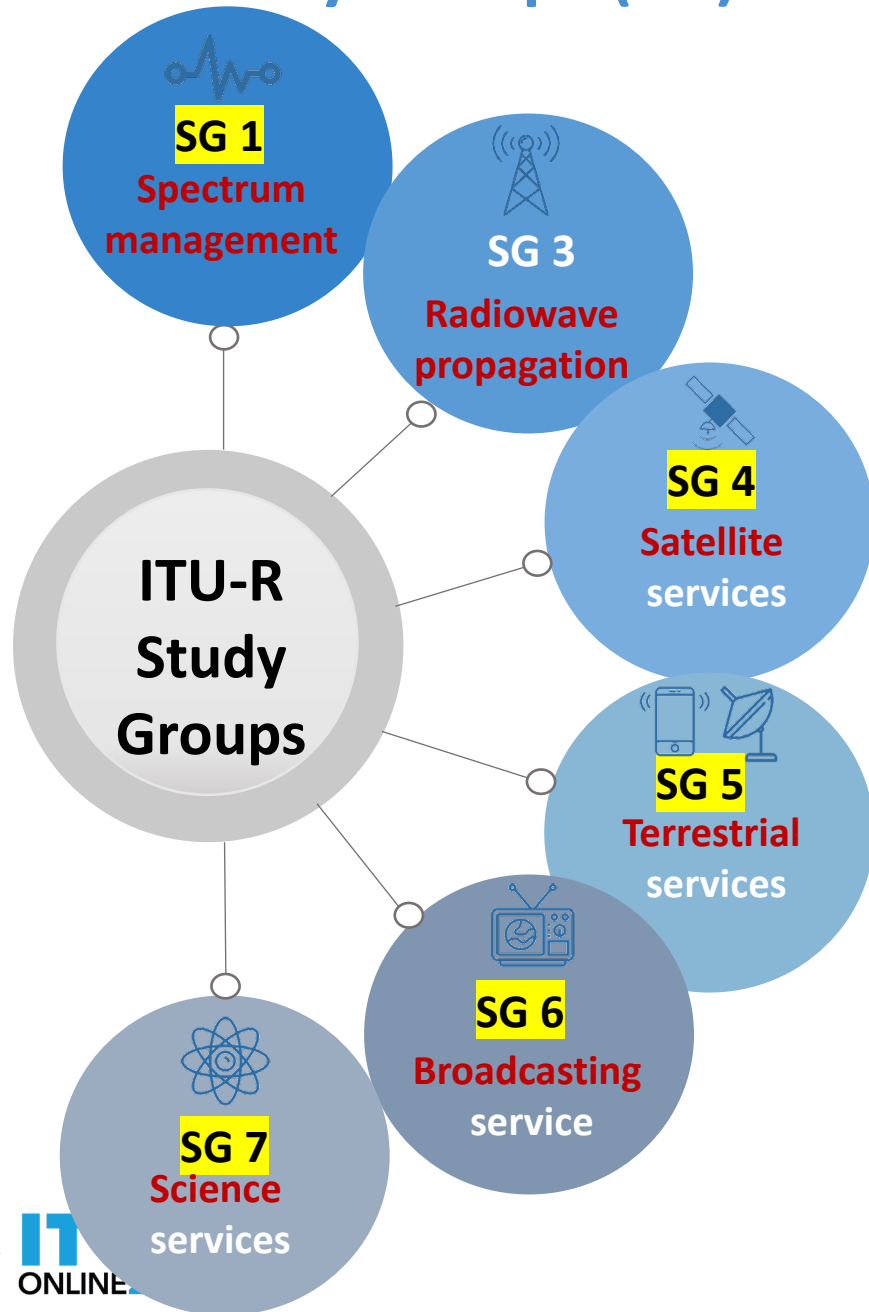
<b>5/9.1-[x]</b> [label of the topic]
<b>Summary of the results of ITU-R studies</b>

<b>Annex 1 – Information on WRC-23 AI 10</b>
--

<b>2.[x]</b> [label of the agenda item]
[Text of a short summary of ITU-R studies completed under the preliminary agenda item]

(see the Proposed detailed Structure for the Draft CPM Report to WRC-23 at: [www.itu.int/oth/R0A0A000014/en](http://www.itu.int/oth/R0A0A000014/en))

# ITU-R Study Groups (SG)



**SG 1**

- WP 1A** – Spectrum engineering techniques
- WP 1B** – Spectrum management methodologies and economic strategies
- WP 1C** – Spectrum monitoring

**SG 3**

- WP 3J** – Propagation fundamentals
- WP 3K** – Point-to-point propagation
- WP 3L** – Ionospheric propagation and radio noise
- WP 3M** – Point-to-point and Earth-space propagation

**SG 4**

- WP 4A** – Efficient orbit/satellite utilization for FSS and BSS
- WP 4B** – Systems, air interfaces, performance and availability objectives for FSS, BSS and MSS (incl. IP-based applications and SNG)
- WP 4C** – Efficient orbit/satellite utilization for MSS and RDSS

**SG 5**

- WP 5A** – Land mobile > 30 MHz, fixed WAS, amateur & amateur-satellite
- WP 5B** – Maritime and aeronautical mobile services and radiodetermination
- WP 5C** – HF and other systems < 30 MHz in the fixed and land mobile services
- WP 5D** – IMT systems

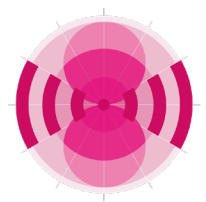
**SG 6**

- WP 6A** – Terrestrial broadcasting delivery
- WP 6B** – Broadcast service assembly and access
- WP 6C** – Programme production and quality assessment
- TG 6/1** – WRC-23 agenda item 1.5 (use of the band 470-960 MHz)



**SG 7**

- WP 7A** – Time signals and frequency standard emissions
- WP 7B** – Space radiocommunication applications: space operation, space research, Earth exploration, meteorological satellite services
- WP 7C** – Remote sensing systems (active and passive): Earth exploration-satellite, MetAids, space research services
- WP 7D** – Radio astronomy



ITU  
ONLINE

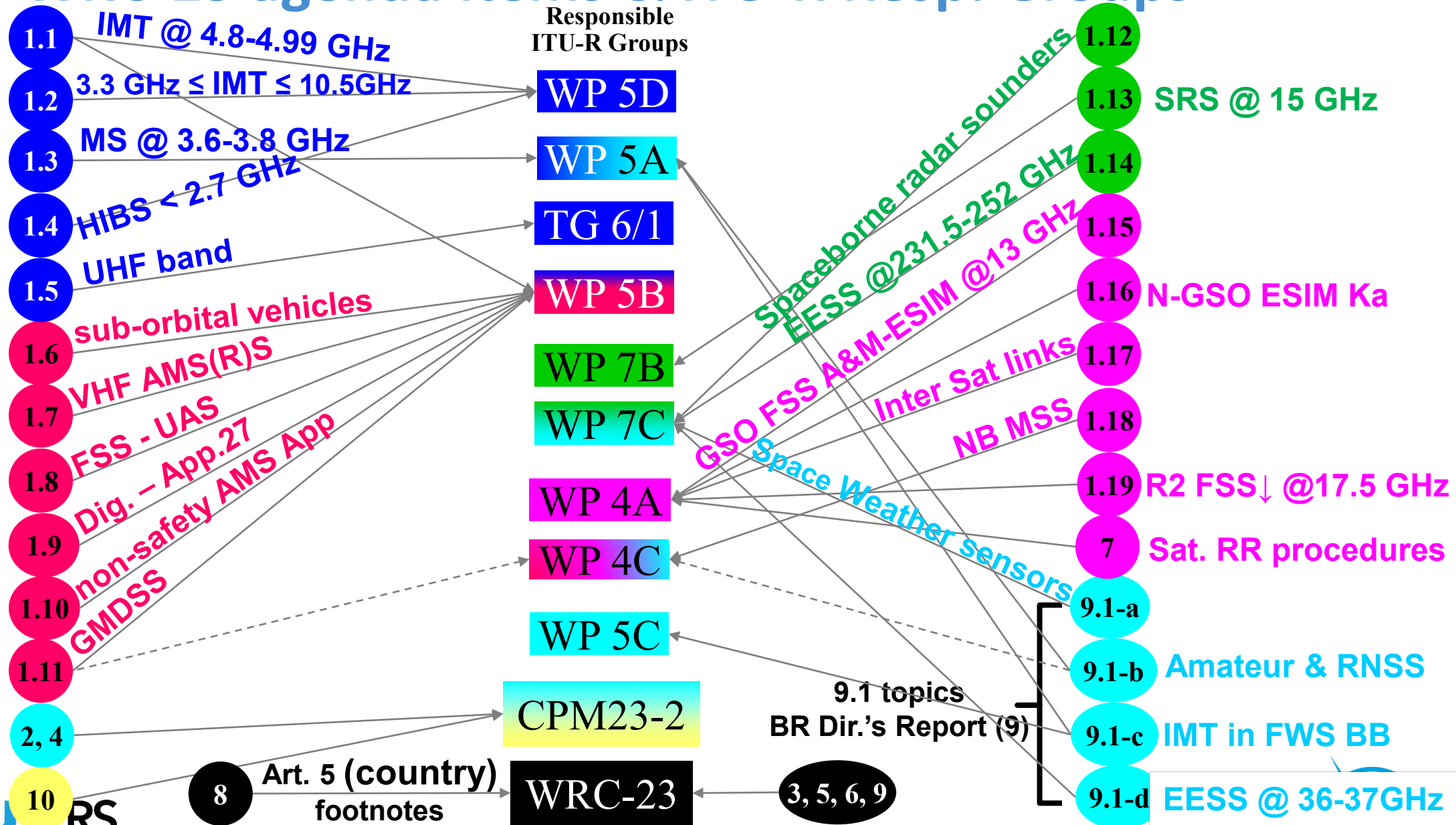


# New TG 6/1 on WRC-23 AI 1.5

- ✓ Taking into account **CPM23-1 Decision** (see [CA/251 Annex 9](#)), **SG 6 established new TG 6/1** ([www.itu.int/en/ITU-R/study-groups/rsg6/tg6-1](http://www.itu.int/en/ITU-R/study-groups/rsg6/tg6-1))
- ✓ **SG 6 appointed Mr. Sergey PASTUKH as the Chairman**
- ✓ **SG 5 appointed Dr. Abdulhadi ABOU-ALMAL as the Vice-Chairman**
- **By 15 May 2021**, in accordance with *resolves to invite ITU-R 1* of [Res. 235 \(WRC-19\)](#), results of studies on **spectrum use and spectrum needs within the band 470-960 MHz** should be reported by:
  - **Working Party (WP) 6A** regarding the **Broadcasting Service** (including the needs of the countries party to the GE06 Agreement)
  - **SG 5 relevant WPs** regarding the **Mobile** (except aeronautical mobile) **Service**
- **By 15 May 2021**, **study assumptions** (incl. propagation model, system parameters) and **technical characteristics** including protection criteria of the **services allocated in the band 470-694 MHz** should be provided by the **WPs\***  
(\* Contributing Working Parties: 3K, 3M, 5A, 5B, 5C, 5D, 6A)
- **TG 6/1 is responsible for conducting the sharing and compatibility studies** ([resolves to invite ITU-R 2 & 3](#)) and **developing the draft CPM text**
- **CPM23-1 provided also elements for the scheduling of the 5 or 6 meetings of TG 6/1**



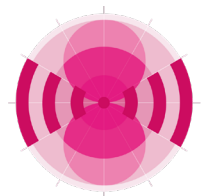
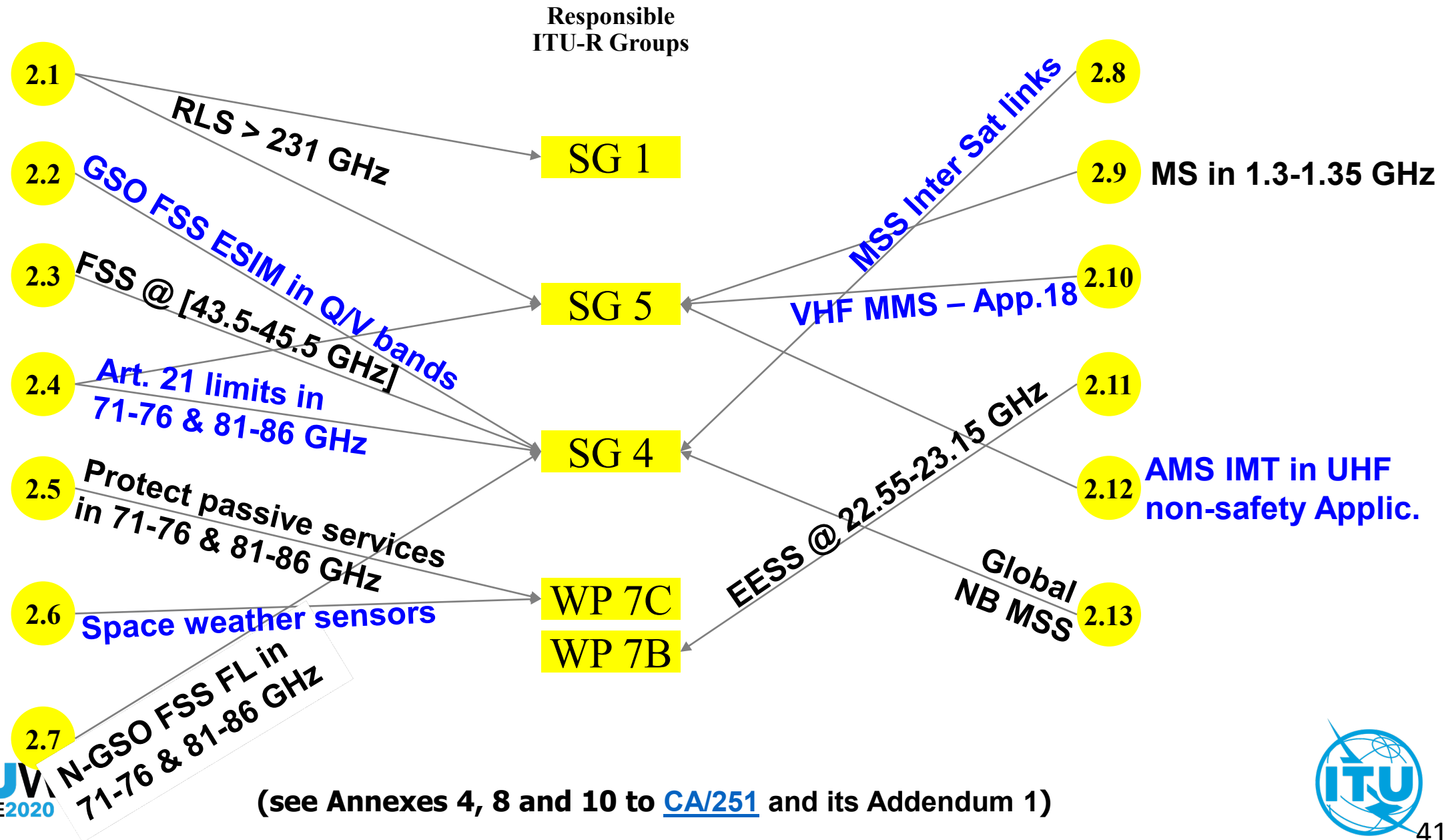
# WRC-23 agenda items & ITU-R Resp. Groups



+Studies to be reported directly to the BR Director by:  
 - WP 5D on No. 21.5 limit (see CA/251 Annex 4)  
 - WP 5B on Res. 427 (WRC-19)



# WRC-27 preliminary items & ITU-R Resp. Groups



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(see Annexes 4, 8 and 10 to [CA/251](#) and its Addendum 1)



# Overlapping frequency bands between some WRC-23 agenda items

1.2 (IMT) WP 5D	1.16 (non-GSO FSS ESIMs) WP 4A	1.17 (ISL) WP 4A	1.18 (narrowband MSS) WP 4C
3 300-3 400 MHz (Regions 1 & 2)			3 300-3 400 MHz (Region 2)
	27.5-29.1 GHz (E-s) 29.5-30 GHz (E-s)	27.5-30 GHz (s-s)	
* E-s: Earth-to-space; s-s: space-to-space.			

- The responsible groups are invited to **exchange the necessary characteristics, parameters and protection criteria to complete studies addressing mutual compatibility and sharing feasibility** among the applicable services/applications.
- They should **coordinate their work and review**, as appropriate, the **progress of studies so that any potential difficulties can be addressed**.

# Description of the texts\* assigned to the ITU-R Study Groups and their WPs/TG

(Working Methods in [Res. ITU-R 1-8](#))

- **Spectrum Management** (SG 1, see [Doc. 1/1](#))
- **Radiowave Propagation** (SG 3, see [Doc. 3/1](#))
- **Satellite Services** (SG 4, see [Doc. 4/1](#))
- **Terrestrial Services** (SG 5, see [Doc. 5/1](#))
- **Broadcasting Service** (SG 6, see [Doc. 6/1](#))
- **Science Services** (SG 7, see [Doc. 7/1](#))

\* ITU-R Questions,  
Recommendations,  
Reports, Handbooks,  
Resolutions,  
Opinions, Decisions  
and  
W(A)RC Resolutions and  
Recommendations

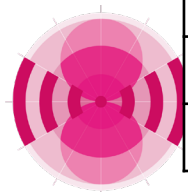
## ITU-R Collaboration with other sectors and organizations

- ITU-T ([Res. ITU-R 6-3](#)) and ITU-D ([Res. ITU-R 7-4](#))
- Other relevant organizations, incl. ISO, IEC & CISPR ([Res. ITU-R 9-6](#))

Related elements from **27<sup>th</sup> RAG** (see [CA/252](#)) and **16<sup>th</sup> CVC** ([Doc. CVC-16/2](#))  
(CG#1 on Gender Declaration; Res. 1-8 & 15-6; Studies relating to WRC 23 AIs, [CACE/955](#), etc.)

# Radio service abbreviations (1/2)

<b>Abbreviations</b>	<b>Radio services</b>	<b>RR definition</b>
AMS	aeronautical mobile service	No. <b>1.32</b>
AM(R)S	aeronautical mobile (route) service	No. <b>1.33</b>
AMSS	aeronautical mobile-satellite service	No. <b>1.35</b>
AMS(R)S	aeronautical mobile-satellite (route) service	No. <b>1.36</b>
ARNS	aeronautical radionavigation service	No. <b>1.46</b>
ARNSS	aeronautical radionavigation-satellite service	No. <b>1.47</b>
ARS	amateur service	No. <b>1.56</b>
ARSS	amateur-satellite service	No. <b>1.57</b>
BS	broadcasting service	No. <b>1.38</b>
BSS	broadcasting-satellite service	No. <b>1.39</b>
EESS	Earth exploration-satellite service	No. <b>1.51</b>
FS	fixed service	No. <b>1.20</b>
FSS	fixed-satellite service	No. <b>1.21</b>
ISS	inter-satellite service	No. <b>1.22</b>
LMS	land mobile service	No. <b>1.26</b>
LMSS	land mobile-satellite service	No. <b>1.27</b>
MetAids	meteorological aids service	No. <b>1.50</b>
MetSat	meteorological-satellite service	No. <b>1.52</b>



# Radio service abbreviations (2/2)

<b>Abbreviations</b>	<b>Radio services</b>	<b>RR definition</b>
MMS	maritime mobile service	No. <b>1.28</b>
MMSS	maritime mobile-satellite service	No. <b>1.29</b>
MRNS	maritime radionavigation service	No. <b>1.44</b>
MRNSS	maritime radionavigation-satellite service	No. <b>1.45</b>
MS	mobile service	No. <b>1.24</b>
MSS	mobile-satellite service	No. <b>1.25</b>
RAS	radio astronomy service	No. <b>1.58</b>
RDS	radiodetermination service	No. <b>1.40</b>
RDSS	radiodetermination-satellite service	No. <b>1.41</b>
RLS	radiolocation service	No. <b>1.48</b>
RLSS	radiolocation-satellite service	No. <b>1.49</b>
RNS	radionavigation service	No. <b>1.42</b>
RNSS	radionavigation-satellite service	No. <b>1.43</b>
SOS	space operation service	No. <b>1.23</b>
SFTSS	standard frequency and time signal service	No. <b>1.53</b>
SFTSSS	standard frequency and time signal-satellite service	No. <b>1.53</b>
SRS	space research service	No. <b>1.55</b>

