



| ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY





ICAO WRC-27 Preparatory Workshop

ITU Preparatory process towards WRC-27

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Workshop on ITU World Radiocommunication Conference 2027
(WRC-27 Workshop)
(Bangkok, Thailand, 24-25 February 2025)

WRC History



ITU's World Radiocommunication Conferences provide spectrum and regulations for radio systems since 1906

WRCs promote and accommodate **all** wireless technologies

Aviation communication and navigation systems are important, **but** you are not the only spectrum user

WRC Decisions on Aviation Spectrum

- 1927 aeronautical definitions
- 1938 HF AM(R)S allocations
- 1947 ARNS, AM(R)S allocations in VHF
- 1963 First satellite allocations
- 1959 Plan for HF AM(R)S
- 1971 allocations 1.5/1.6 GHz
-
- 2015 Allocation for WAIC, GFT
- 2019 **No decision** on GADSS, sub-orbital
- 2023 VHF space-based, wide-band HF



WRC Objectives

- Allocate spectrum for emerging radio applications, while protecting the existing usage
(example: *spectrum for space-based VHF -> protection of adjacent science services*)
- Maintain the right balance between the spectrum allocated to radiocommunication services
(*reasonable spectrum requirements and sound and objective sharing studies*)
- Achieve global interoperability of equipment, spectrum harmonization for economies of scale
(*especially relevant for maritime, aeronautical, cellular systems*)
- Create regulatory certainty for users, regulators and telecom industry
(*prerequisite for stable investments and development of the industry*)



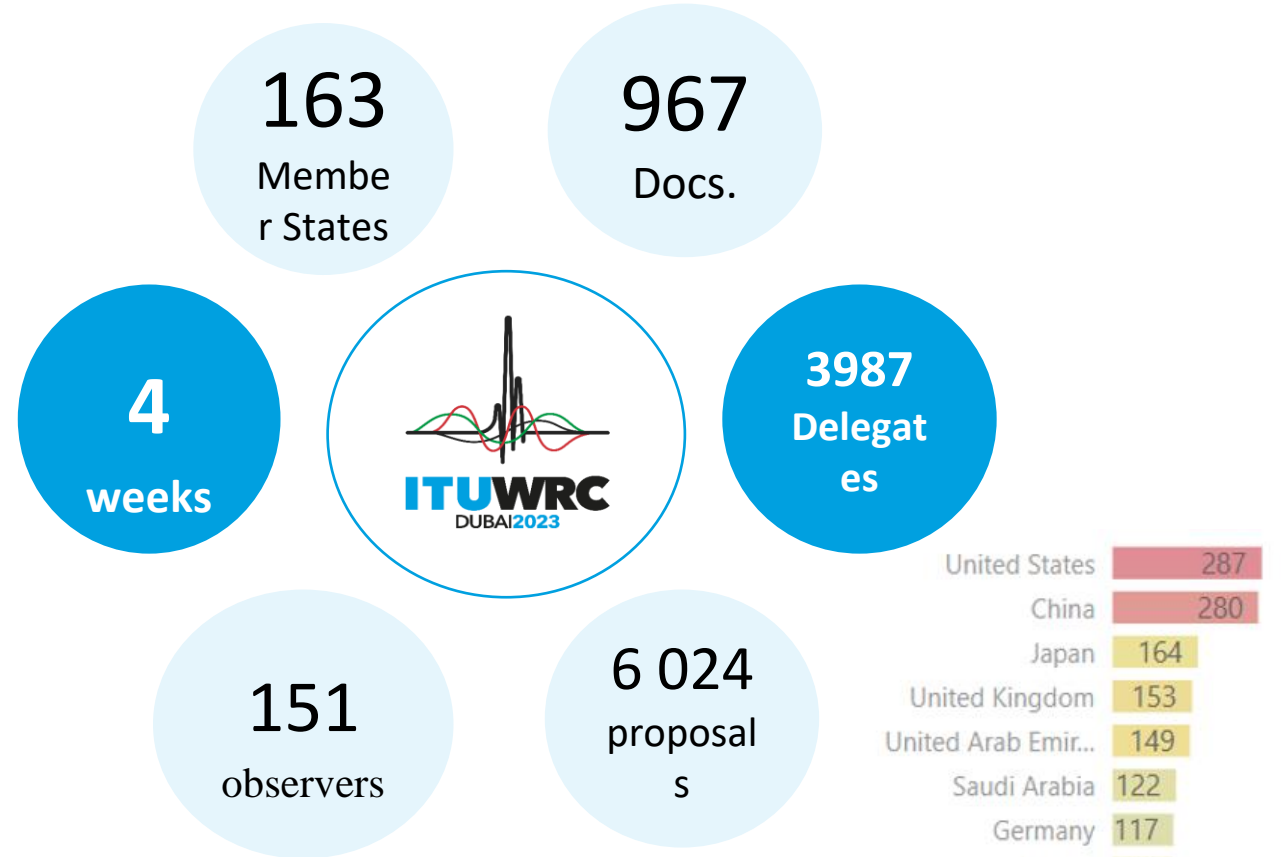
WRC evolution

IRTC-1906 ('WRC-1906')

10 days
120 participants
30 countries



WRC-23

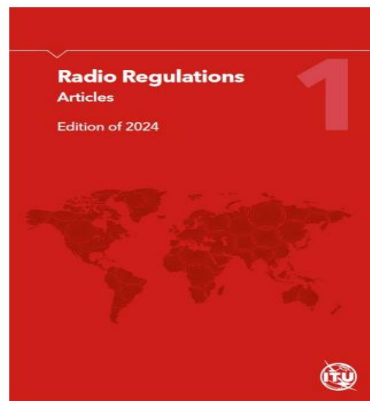


WRCs are held every 3-4 years

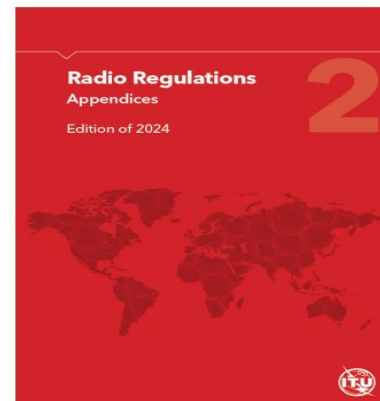


ITU Radio Regulations

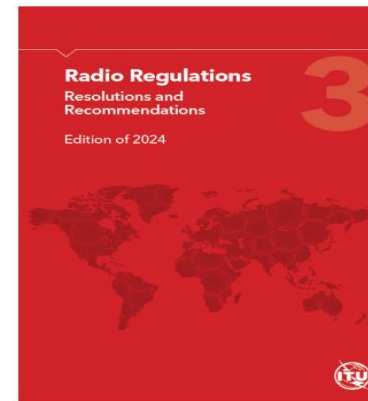
- World Radiocommunication Conferences develop and update **the Radio Regulations (RR)**
- RR contain international rules for use of spectrum and satellite orbits
- RR is an intergovernmental treaty: mandatory for application by ITU Member States
- Main goals of the RR:
 - interference free operation of stations
 - harmonization of spectrum spectrum/orbit use



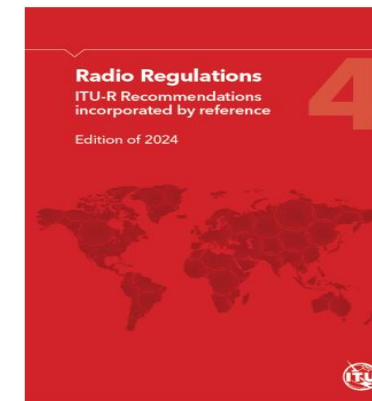
VOLUME 1:
Articles
(62)



VOLUME 2:
Appendices
(23)*



VOLUME 3:
Resolutions (202)*
and
Recommendations (25)*



VOLUME 4:
ITU-R Recommendations
incorporated by reference
(39)*

RR edition 2024 entered into force on 1.01.25, available in 6 UN languages at [Radio Regulations - ITU](https://www.itu.int/rr)



WRC-27 preparation cycle





Important steps of WRC process


- **Agenda** – determines the scope of discussions
 - Agenda is important, stable. It has a legal notion
- **ITU-R Studies**- heart of all WRC preparations
 - Making sure that all interference scenarios are analysed and cleared, to keep interference within manageable limits
- **WRC** – allocates bands and establishes operational conditions for newly allocated services
 - WRC is treaty making Conference, so the final say remains with ITU Member States

ICAO participates in all preparation steps (CPM, studies, WRC), except decision-making at WRC



ITU-R Preparatory Studies for WRC-27

www.itu.int/go/rcpm-wrc-27-studies

WRC-27 agenda Item (Chapter)	Topic	WRC Resolution (*)	Responsible Group(s)	Information from Responsible Group(s) 
1		-	-	-
1.1 (1)		Res.176 (Rev.WRC-23)	WP 4A	Doc. 4A/128 Annex 1 (b), Doc. 4A/343 (d) (Rev.1) Sec. 2.6.1, 3.2, 3.3, 3.3.1, 3.3.5, 4, 4.1.1, Annex 1 ([f])
1.2 (1)		Res.129 (WRC-23) (ex.COM6/1)	WP 4A (1)	Doc. 4A/128 Annex 3 (b), Doc. 4A/343 (d) (Rev.1) Sec. 2.6.1, 3.3, 3.3.2, 3.3.5, 4, 4.1.1, Annex 3, Annex 4 (c)
1.3 (1)		Res.130 (WRC-23) (ex.COM6/3)	WP 4A	Doc. 4A/343 (d) (Rev.1) Sec. 2.6.1, 3.2, 3.2.1, 3.2.6, 4, 4.2.1, Annex 5, Annex 6 (c), Annex 7 (b)
1.4 (1)		Res.726 (WRC-23) (ex.COM6/24)	WP 4A	Doc. 4A/343 (d) (Rev.1) Sec. 2.6.1, 2.7.1, 3.3, 3.3.3, 3.3.5, 4, 4.1.1, 4.2.1, Annex 8, Annex 9 (c), Annex 10 (b)
1.5 (1)		Res.14 (WRC-23) (ex.COM6/6)	WP 4A	Doc. 4A/343 (d) (Rev.1) Sec 2.1, 2.6.1, 3.4, 3.4.3.1.5, 3.4.4, 4, Annex 11, Annex 12 (c)
1.6 (1)		Res.131 (WRC-23) (ex.COM6/7)	WP 4A	Doc. 4A/128 Annex 11 (b), Doc. 4A/343 (d) (Rev.1) Sec. 2.6.1, 2.7.1, 3.4, 3.4.2, 3.4.4, 4, Annex 13
1.7 (2)		Res.256 (WRC-23) (ex.COM6/26)	WP 5D	Doc. 5D/413 (d), Chapter 1 (a), Annex 1.1 (a), Chapter 2 (a), Annex 2.9.4 (b), Chapter 4 (a), Annexes 4.1 (a), 4.2 (a), 4.7, 4.8 (c), 4.9 [(f)], 4.10, 4.11, 4.12, 4.13, Chapter 6 (a)
1.8 (2)		Res.663 (Rev.WRC-23)	WP 5B	Doc. 5B/216 (d) Sec. 6.5, 7.1, 7.1.1.1, Annex 6 (f)
1.9 (2)		Res.411 (WRC-23) (ex.COM6/2)	WP 5B	Doc. 5B/96 Annex 1 (b), Doc. 5B/216 (d) Sec. 7.2, 7.2.1.1, 7.2.3.4, Annex 20 ([e/f])

- The Table is as of 14 February 2025
- Updated on a regular basis after meetings of the responsible groups



National and regional preparations

➤ *National preparations*

- Starting point of WRCs process. Development of a national position, which is injected in regional and international discussions
- Each telecom regulator has to keep a balance between different services to respond to the needs of the population and national objectives
- Aviation needs to actively participate in development of national positions. To protect the existing usage and satisfy its future requirements

➤ *Regional preparations*

- 6 Regional Telecommunication Organizations
- consolidate views at regional level, assist in discussions between regions, facilitate reaching a common understanding, save time during WRCs (6 views instead of 194)



Information on the regional preparation for WRC-27

www.itu.int/en/ITU-R/conferences/wrc/2027/Pages/reg-prep.aspx

Asia-Pacific Telecommunity (APT)



- ▶ <http://www.apg.int/APTAPG>
- ▶ Chair, APG-27:
Mr. Nobuyuki Kawai, Japan,
no-kawai@kddi.com
aptapg@apt.int

Arab Spectrum Management Group (ASMG)



- ▶ Chair, AMSG:
Mr. Tariq AL AWADHI, UAE,
tariq.alawadhi@tra.gov.ae

African Telecommunications Union (ATU)



- ▶ <http://www.atuuat.africa>
- ▶ Secretary General – African Telecommunications Union:
Mr. John OMO
sg@atuuat.africa

European Conference of Postal and Telecommunications Administrations (CEPT)



- ▶ <http://www.cept.org/ecc/groups/ecc/cpg>
- ▶ Chair, CPG:
Mr. Stephen Talbot, United Kingdom,
stephen.talbot@ofcom.org.uk

Inter-American Telecommunication Commission (CITEL)



- ▶ <http://www.citel.oas.org/en/Pages/PCCII>
- ▶ Chair of the PCC.II Working Group relative to the CITEL's Preparation for WRCs:
Mr. Ricardo Martinez, Colombia (Republic of)
ricardo.martinez@ane.gov.co

Regional Commonwealth in the Field of Communications (RCC)



- ▶ <http://en.rcc.org.ru>
- ▶ Chair, RCC WG WRC-27/RA-27 *:
Mr. Sergey Pastukh, Russian Federation
serg-past@mail.ru; pastuhsy@niir.ru
- ▶ Draft preliminary position of the RCC Administrations on the WRC-27 agenda items (version of 13 September 2024)

Your Region: Asia-Pacific Telecommunity (APT). 38 countries. Next meeting [28 July-1 August] 2025



Preparations at international level (ITU)

1. Studies in ITU-R responsible and contributing Groups
2. Sessions 1 and 2 of the Conference Preparatory Meeting (now under improvement)
3. Three ITU Interregional Workshops on WRC-27 preparations:

1st Workshop: [3 – 5] December 2025

Presentation of ITU-R studies. Presentation of preliminary views of regional groups, international organizations on their positions

2nd Workshop: [Q4 of 2026]

Presentation of the Draft CPM Report. Presentation of regional groups, international organizations on positions for CPM-2

3rd Workshop: [Q 3/4 of 2027]

Presentation of CPM & Director's Reports to WRC-27. Presentation of regional groups, international organizations on positions, common proposals to WRC-27



WRC-27 agenda

FIXED-SATELLITE AND BROADCASTING-SATELLITE

- 1.1** **Aeronautical/maritime earth stations in motion**
47.2-50.2 GHz / 50.4-51.4 GHz
 - 1.2** **Uplink earth stations** – 13.75-14 GHz
 - 1.3** **Gateway earth stations** – 51.4-52.4 GHz
 - 1.4** **Fixed/broadcasting allocation in Region 3** – 17.3-17.7/8 GHz
 - 1.5** **Unauthorized operations of non-geostationary-satellite orbit earth stations**
 - 1.6** **Space sustainability**
37.5-42.5 GHz / 42.5-43.5 GHz / 47.2-50.2 GHz / 50.4-51.4 GHz
 - 7** **Satellite regulatory issues**
-
- 1.7** **IMT**
4400-4800 MHz / 7125-8400 MHz / 14.8-15.35
 - 1.8** **Radiolocation**
231.5-275 GHz / 275-700 GHz
 - 1.9** **Aeronautical mobile (OR) high frequency modernization**
 - 1.10** **Power flux-density / power limits**
71-76 GHz / 81-86 GHz

FIXED, MOBILE AND RADIOLOCATION

MOBILE-SATELLITE

- Space-to-space links** **1.11**
1 518-1 544 MHz / 1 545-1 559 MHz
1 610-1 645.5 MHz / 1 646.5-1 660 MHz
1 670-1 675 MHz / 2 483.5-2 500 MHz
 - MSS - Allocations for IoT development** **1.12**
1427-1432 MHz / 1645.5-1646.5 MHz
1880-1920 MHz / 2010-2025 MHz
 - MSS - IMT-space stations connectivity** **1.13**
 - MSS - Additional allocations** **1.14**
2010-2025 MHz / 2160-2170 MHz
2 120-2 160 MHz
-
- Lunar communications** **1.15**
 - Radio Quiet Zones** **1.16**
 - Space weather sensors protection** **1.17**
 - ≥ 76 GHz – Earth exploration service protection** **1.18**
 - Earth exploration-satellite service allocation** **1.19**
4200 – 4400 MHz / 8400-8500 MHz

SCIENCE

19 agenda items + 11 standing agenda items.
80 % of the WRC-23 Agenda are space related issues



T h a n k y o u !