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INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY

ICAO WRC-27 Preparatory Workshop
Overview of WRC-27 Agenda Items for Aviation

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EUR/MID WRC-27 (World Radiocommunication Conference 2027)
Workshop
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Presentation Overview

01 **ICAO Position Overview**

Position and process

02 **WRC-27 Agenda Items**

All items relevant to aviation

Development of the ICAO Position for WRC-27

ICAO State Letter process

- Initial draft developed by FSMP in 2024 to assess and give direction on WRC-27 Agenda Items relevant to ICAO systems
  - Issued as an ICAO State Letter for comment in Nov 2024
  - ANC reviewed updates in May 2025, and was formally approved by ICAO Council in Jun 2025
- ICAO position will be updated as the WRC-27 agenda items evolve
  - Accounting for results of maturing ITU studies that may change ICAO's position
  - Expect FSMP to finalize updates by Q1 2027 (FSMP WG/24), followed by ANC and then ICAO Council review/approval
  - Updated position will be provided to ICAO member states ready for ITU-R CPM-27 and WRC-27 (Q2 and Q4 2027 respectively)
- The letter urges States to:
  - Apply the ICAO Position to the extent possible in formulating their positions for WRC-27
  - To include aviation experts both in the development of said positions, and
  - as part of their national delegations to WRC-27

Principles of the ICAO WRC-27 Position

- To ensure that any changes to the ITU Radio Regulations do not compromise the safety of civil aviation
- The ITU Radio Regulations shall not conflict with ICAO Standards and Recommended Practices
- The frequency allocations to aeronautical safety services shall be protected in conformity with internationally agreed requirements.
- Changes to frequency allocations need to be supported by adequate studies in the ITU-R Sector or in ICAO, as appropriate

WRC-27 Resources

Location of ICAO WRC-27 Position (approved by the ICAO Council)

https://www.icao.int/sites/default/files/FSMP/065e.pdf

Status of ITU-R WRC-27 Studies:
https://www.itu.int/en/ITU-R/study-groups/rcpm/Pages/wrc-27-studies.aspx

Importance of WRC-27 Agenda Items to ICAO

- WRC-27 Agenda Items of particular importance to ICAO
  - None (!)
- Other WRC-27 Agenda Items of importance to ICAO
  - 1.5, 1.7, 1.9, 1.11, 1.12, 1.13, 1.15, 1.16, 1.17, 1.18, 1.19, 4, 6, 9, 8, and 10
- WRC-27 Agenda items with no expected impact to ICAO Systems
  - 1.1, 1.2, 1.3, 1.4, 1.6, 1.8, 1.10, 1.14, 1.16, 2, 3, 5, 6, and 7

WRC-27 Agenda Items

General Guidance

- A broad statement introduces the agenda item…
  - E.g., “to consider new radiolocation service allocations in the xx to yy GHz band”
- Each agenda item has an associated Resolution that provides details on how the studies should be done…
  - E.g., “Determine spectrum requirements; if those cannot be satisfied in existing bands … ensure protection of existing and future systems …”
- In the slides that follow:

Blue = Aviation should participate in studies

Green = No impact on aeronautical services has been identified at this time

WRC-27 Agenda Items

1.1: to consider the technical and operational conditions for the use of the frequency bands 47.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space), or parts thereof, by aeronautical and maritime earth stations in motion communicating with space stations in the fixed-satellite service and develop regulatory measures, as appropriate, to facilitate the use of the frequency bands 47.2-50.2 GHz and 50.4-51.4 GHz (Earth-to-space), or parts thereof, by aeronautical and maritime earth stations in motion communicating with geostationary space stations and non-geostationary space stations in the fixed-satellite service, in accordance with Resolution **176 (Rev.WRC-23)**

1.2: to consider possible revisions of sharing conditions in the frequency band 13.75-14 GHz to allow the use of uplink fixed-satellite service earth stations with smaller antenna sizes, in accordance with Resolution **129 (WRC-23)**

WRC-27 Agenda Items

1.3: to consider studies relating to the use of the frequency band 51.4-52.4 GHz to enable use by gateway earth stations transmitting to non-geostationary-satellite orbit systems in the fixed-satellite service (Earth-to-space), in accordance with Resolution **130 (WRC-23)**

1.4: to consider a possible new primary allocation to the fixed-satellite service (space-to-Earth) in the frequency band 17.3-17.7 GHz and a possible new primary allocation to the broadcasting-satellite service (space-to-Earth) in the frequency band 17.3-17.8 GHz in Region 3, while ensuring the protection of existing primary allocations in the same and adjacent frequency bands, and to consider equivalent power flux-density limits to be applied in Regions 1 and 3 to non-geostationary-satellite systems in the fixed-satellite service (space-to-Earth) in the frequency band 17.3-17.7 GHz, in accordance with Resolution **726 (WRC-23)**

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1.5: to consider regulatory measures, and implementability thereof, to limit the unauthorized operations of non-geostationary-satellite orbit earth stations in the fixed-satellite and mobile-satellite services and associated issues related to the service area of non-geostationary-satellite orbit satellite systems in the fixed-satellite and mobile-satellite services, in accordance with Resolution **14 (WRC-23)**

1.6: to consider technical and regulatory measures for fixed-satellite service satellite networks/systems in the frequency bands 37.5-42.5 GHz (space-to-Earth), 42.5-43.5 GHz (Earth-to-space), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space) for equitable access to these frequency bands, in accordance with Resolution **131 (WRC-23)**

1.7: to consider studies on sharing and compatibility and develop technical conditions for the use of International Mobile Telecommunications (IMT) in the frequency bands 4 400-4 800 MHz, 7 125-8 400 MHz (or parts thereof), and 14.8-15.35 GHz taking into account existing primary services operating in these, and adjacent, frequency bands, in accordance with Resolution **256 (WRC-23)**

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1.8: to consider possible additional spectrum allocations to the radiolocation service on a primary basis in the frequency range 231.5-275 GHz and possible new identifications for radiolocation service applications in the frequency bands within the frequency range 275-700 GHz for millimetric and sub-millimetric wave imaging systems, in accordance with Resolution **663 (Rev.WRC-23)**

1.9: to consider appropriate regulatory actions to update Appendix 26 to the Radio Regulations in support of aeronautical mobile (OR) high frequency modernization, in accordance with Resolution **411 (WRC-23)**

1.10: to consider developing power flux-density and equivalent isotropically radiated power limits for inclusion in Article 21 of the Radio Regulations for the fixed-satellite, mobile-satellite and broadcasting-satellite services to protect the fixed and mobile services in the frequency bands 71-76 GHz and 81-86 GHz, in accordance with Resolution **775 (Rev.WRC-23)**

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1.11: to consider the technical and operational issues, and regulatory provisions, for space-to-space links among non-geostationary and geostationary satellites in the frequency bands 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 and 2 483.5-2 500 MHz allocated to the mobile-satellite service, in accordance with Resolution **249 (Rev.WRC-23)**

1.12: to consider, based on the results of studies, possible allocations to the mobile-satellite service and possible regulatory actions in the frequency bands 1 427-1 432 MHz (space-to-Earth), 1 645.5-1 646.5 MHz (space-to-Earth) (Earth-to-space), 1 880-1 920 MHz (space-to-Earth) (Earth-to-space) and 2 010-2 025 MHz (space-to-Earth) (Earth-to-space) required for the future development of low-data-rate non-geostationary mobile-satellite systems, in accordance with Resolution **252 (WRC-23)**

1.13: to consider studies on possible new allocations to the mobile-satellite service for direct connectivity between space stations and International Mobile Telecommunications (IMT) user equipment to complement terrestrial IMT network coverage, in accordance with Resolution **253 (WRC-23)**

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1.14: to consider possible additional allocations to the mobile-satellite service, in accordance with Resolution **254 (WRC-23)**

1.15: to consider studies on frequency-related matters, including possible new or modified space research service (space-to-space) allocations, for future development of communications on the lunar surface and between lunar orbit and the lunar surface, in accordance with Resolution **680 (WRC-23)**

1.16: to consider studies on the technical and regulatory provisions necessary to protect radio astronomy operating in specific Radio Quiet Zones and, in frequency bands allocated to the radio astronomy service on a primary basis globally, from aggregate radio-frequency interference caused by non-geostationary-satellite orbit systems, in accordance with Resolution **681 (WRC-23)**

1.17: to consider regulatory provisions for receive-only space weather sensors and their protection in the Radio Regulations, taking into account the results of ITU Radiocommunication Sector studies, in accordance with Resolution **682 (WRC-23)**

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1.18: to consider regulatory provisions for receive-only space weather sensors and their protection in the Radio Regulations, taking into account the results of ITU Radiocommunication Sector studies, in accordance with Resolution **682 (WRC-23)**

1.19: to consider possible primary allocations in all Regions to the Earth exploration-satellite service (passive) in the frequency bands 4 200-4 400 MHz and 8 400-8 500 MHz, in accordance with Resolution **674 (WRC-23)**

2: Use of incorporation by reference in the Radio Regulations

3: to consider such consequential changes and amendments to the Radio Regulations as may be necessitated by the decisions of the conference

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

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5: to review, and take appropriate action on, the Report from the Radiocommunication Assembly submitted in accordance with Nos. 135 and 136 of the Convention

6: to identify those items requiring urgent action by the radiocommunication study groups in preparation for the next world radiocommunication conference

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

8: to consider and take appropriate action on requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, taking into account Resolution **26 (Rev.WRC-23)**

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9: to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention on the activities of the ITU Radiocommunication Sector since WRC-23, on any difficulties or inconsistencies encountered in the application of the Radio Regulations, and on action in response to Resolution **80 (Rev.WRC-07)**

10: to recommend to the ITU Council items for inclusion in the agenda for the next world radiocommunication conference, and items for the preliminary agenda of future conferences, in accordance with Article 7 of the ITU Convention and Resolution **804 (Rev.WRC-23)**

Support of ICAO WRC-27 Position

Recommended actions for aviation representatives in States

- Work with national radio regulators to secure a national/ regional position that incorporates ICAO requirements/considerations
  - Multiple industries competing for spectrum access/protection
  - National industry engagement (incl flag carriers) has significant benefits
- For aviation experts to participate/attend in the ITU-R and regional group meetings
  - Essential to ensure aviation views are implemented in ITU outcomes
  - Encourage both regulators and manufacturers to provide expertise

Thank You

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