



WORKING PAPER

ASSEMBLY — 42ND SESSION

TECHNICAL COMMISSION

Agenda Item 24: Aviation Safety and Air Navigation Priority Initiatives

**DEFENCE OF THE ICAO POSITION ON THE AERONAUTICAL FREQUENCY SPECTRUM
FOR THE WORLD RADIOCOMMUNICATION CONFERENCE (2027) (WRC/27)**

(Presented by Brazil)

EXECUTIVE SUMMARY

This working paper identifies specific World Radiocommunication Conference (2027) (WRC-27) agenda items that present direct or potential threats to aviation spectrum and examines their implications for aviation stakeholders' participation in International Telecommunication Union (ITU) study groups and ICAO Frequency Spectrum Management Panel (FSMP) meetings.

Action: The Assembly is invited to:

- a) consider the most effective ways for aviation administrations and stakeholders to monitor and actively engage in ongoing studies related to the relevant WRC-27 agenda items; and
- b) assess the actual implications of failing to safeguard current and future spectrum access for any of the WRC agenda items of concern.

<i>Strategic Goals:</i>	This working paper relates to <i>Every Flight is Safe and Secure</i> .
<i>Financial implications:</i>	Not applicable.
<i>References:</i>	Administrative Circular CA/270, <i>Preparation of the draft CPM Report for WRC-27 by the ITU-R Radiocommunication Bureau (BR)</i> . State letter 24/93, <i>Draft ICAO Position on items of interest to aviation on the agenda of the International Telecommunication Union (ITU) World Radiocommunication Conference (2027) (WRC-27)</i> . ICAO Frequency Spectrum Management Panel Meetings.

1. INTRODUCTION

1.1 Within the International Telecommunication Union (ITU) framework, the World Radiocommunication Conference (WRC) is held every four years, supported by a preparatory process conducted through Regional Telecommunications Organizations (CITEL, ASMP, RCC, CEPT, APT, and ATU)¹. The WRC is responsible for analysing, reviewing, and updating the radio regulations (RR) as needed, to allocate frequencies to various services in line with the evolving needs of global radiocommunications operations and to address other regulatory matters.

1.2 The RR include the full texts adopted at WRC-95 and all subsequent updates from later WRCs, including appendices, resolutions, and ITU-R recommendations incorporated by reference.

1.3 Each WRC establishes the agenda for the next conference and, provisionally, for the subsequent one. Besides regular agenda items, specific topics are added based on proposals submitted to the Conference. These agenda items enable stakeholders across radiocommunication sectors to propose amendments to the RR, based on the results of studies conducted under each item.

1.4 The United Nations, through its Member States, acknowledges the importance of safeguarding the traveling public and the aviation systems that ensure their safety. To support the critical safety requirements related to the use of the radio frequency spectrum in aviation, the ITU has established the following provisions:

- a) **The ITU Constitution, Article 40:** “*International telecommunication services must give absolute priority to all telecommunications concerning safety of life at sea, on land, in the air or in outer space, as well as to epidemiological telecommunications of exceptional urgency of the World Health Organization*”; and
- b) **The ITU Radio Regulations, Article 4.10:** “*ITU Member States recognize that the safety aspects of radionavigation and other safety services require special measures to ensure their freedom from harmful interference; it is necessary therefore to take this factor into account in the assignment and use of frequencies*”.

1.5 Efficient spectrum management is essential, as it defines the allocation of radiocommunication services, establishes technical standards, and determines which systems and technologies may operate within a country. It encompasses several key aspects: protecting frequencies used by critical services to prevent harmful interference; identifying opportunities to enhance efficiency and support the development and implementation of new technologies within flexible regulatory frameworks; and reducing the cost of telecommunications equipment to promote equitable access across society (ITU, 2022).

1.6 The increasing demand for access to portions of the frequency spectrum reflects ongoing technological advancements and the rapid expansion of bandwidth-intensive applications. Consequently, spectrum allocation and coordination have become major challenges, requiring a careful balance between efficiency and equitable decision-making (ITU-R, 2014).

¹ African Telecommunication Union (ATU), Asia-Pacific Telecommunity (APT), European Conference of Postal and Telecommunications Administrations (CEPT), Inter-American Telecommunication Commission (CITEL), Arab Spectrum Management Group (ASMG) and the Regional Commonwealth in the Field of Communications (RCC).

1.7 ICAO follows the working principle established during the WRC-07 preparatory studies within the ITU: it is responsible for ensuring that ICAO-standardized systems are compatible with existing or planned aeronautical systems that operate in accordance with international aeronautical standards. The compatibility of ICAO-standard systems with non-ICAO aeronautical systems—or with non-aeronautical systems—is addressed through the ITU process.

1.8 The safety of air operations relies on the availability of reliable communication, navigation, and surveillance services. Both current and future communications, navigation, and surveillance (CNS) and air traffic management (ATM) systems depend heavily on access to sufficient, appropriate, and adequately protected radio frequency spectrum to meet the high integrity and availability standards required for aeronautical safety. The spectrum requirements for these systems are outlined in the ICAO Spectrum Strategy.

1.9 Increasing air traffic and emerging aviation applications are placing pressure on air traffic management systems and spectrum resources, likely requiring expanded or additional frequency allocations beyond what current efficiency improvements can provide.

1.10 Compatibility between systems used for the safe operation of aircraft and air traffic management, and those not intended for critical safety communications, operating in the same or adjacent radio frequency bands, must be carefully assessed to ensure the safety of the traveling public.

1.11 Additionally, there is a growing trend in the development of new mobile communication networks, such as IMT 5G base stations with active antennas operating at higher radiated power, and an increasing density of terrestrial devices supporting satellite networks. To ensure ongoing compatibility with other systems and services—especially aviation safety systems—it is important to review and assess the unwanted emission levels of these stations.

2. DISCUSSION

2.1 In the current WRC-27 study cycle, the FSMP has preliminarily identified several agenda items (1.5, 1.7, 1.11, 1.12, 1.13, 1.15, 1.16, 1.17, 1.18, 1.19, 4, 8, 9 and 10) that require close monitoring by the aviation sector. These items fall under the purview of various ITU-R Working Parties, including WP 4A, 4C, 5D, 7B, 7C, and 7D. Although WP 5B is the lead ITU-R group for studies on aeronautical services and is typically the main forum for aviation administrations and stakeholders, it is currently acting as a contributing group for some of these WRC-27 agenda items.

2.2 So far, these groups have discussed these agenda items in at least two meetings in 2024 and 2025. The preliminary outcomes of these discussions now require an analysis by aviation administrations and stakeholders.

2.3 Any proposed change to RR by one radiocommunication sector is likely to impact at least one other sector—often negatively, but sometimes positively. If a sector fails to identify and monitor relevant agenda items or to actively engage in the related studies, it risks outcomes that do not fully account for the potential impact on its operations.

3. **CONCLUSION**

3.1 Given the budget and personnel constraints faced by certain administrations, it is not feasible for aviation representatives to attend all meetings of the ITU-R WPs. However, FSMP members and aviation stakeholders must still find an effective way to track and monitor studies related to the WRC-27 agenda items.

3.2 The Assembly is invited to consider the most effective ways for aviation administrations and stakeholders to monitor and actively engage in ongoing studies related to the relevant WRC-27 agenda items, and to assess the actual implications of failing to safeguard current and future spectrum access for any of the WRC agenda items of concern.

3.3 Active participation by aviation spectrum management experts in relevant ITU-R meetings, such as WP 5B, and in Regional Telecommunications Group meetings is highly encouraged to ensure effective representation and advocacy of aviation interests.

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APPENDIX

ALLOCATION OF ITU-R PREPARATORY WORK FOR WRC-27

WRC-27 agenda item	WRC Resolution	Responsible Group	Contributing Group
1.5	Res.14 (WRC-23)	WP 4A	WP 1B; WP 4C
1.7	Res.256 (WRC-23)	WP 5D	WP 3K; WP 3M; WP 4A; WP 4C ; WP 5A; WP 5B ; WP 5C; WP 7B; WP 7C; WP 7D
1.9	Res.411 (WRC-23)	WP 5B	WP 3L; WP 5C; WP 6A; WP 7A
1.11	Res.249 (Rev. WRC-23)	WP 4C	WP 3L; WP 3M; WP 4A; WP 4B; WP 5A; WP 5B; WP 5C; WP 5D; WP 7B; WP 7C; WP 7D
1.12	Res.252 (WRC-23)	WP 4C	WP 3L; WP3M; WP 4B; WP 5A; WP 5B; WP 5C; WP 5D; WP 7B; WP 7C; WP 7D (WP 4B is requested to provide information on future development of low- data-rate non-GSO MSS systems);
1.13	Res.253 (WRC-23)	WP 4C	WP 3L; WP 3M; WP 4A; WP 4B; WP 5A; WP 5B; WP 5C; WP 5D; WP 6A; WP 7B; WP 7C; WP 7D
1.15	Res.680 (WRC-23)	WP 7B	WP 3J; WP 4A; WP 4C; WP 5A; WP 5B; WP 5C; WP 5D; WP 7A; WP 7C; WP 7D
1.16	Res.681 (WRC-23)	WP 7D	WP 3J; WP 3M; WP 4A; WP 4C; WP 5A; WP 5B; WP 5D
1.17	Res.682 (WRC-23)	WP 7C	WP 3L; WP 3M; WP 4C; WP 5A; WP 5B; WP 5C; WP 5D; WP 6A; WP 7B; WP 7D
1.18	Res.712 (WRC-23)	WP 7C (<i>resolves 1</i>) WP 7D (<i>resolves 2</i>)	WP 3J; WP 3M; WP 4A; WP 4C; WP 5A; WP 5B; WP 5C
1.19	Res.674 (WRC-23)	WP 7C	WP 3J; WP 3M; WP 4A; WP 5A; WP 5B; WP 5C; WP 5D; WP 7B

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