



Agenda Item 5: Report of activities and deliverables of the Interop TF and Subgroups

**COLOMBIAN CIVIL AVIATION AUTHORITY'S ENDORSEMENT OF THE ICAO
POSITION ON RELATED MATTERS TO BE CONSIDERED AT THE WORLD
RADIOCOMMUNICATION CONFERENCE (2023) (WRC-23) OF THE INTERNATIONAL
TELECOMMUNICATION UNION (ITU)**

(Presented by Colombia)

SUMMARY	
<p>This working paper sets out for consideration by the Meeting the endorsement by the Civil Aviation Authority of Colombia, as a State in conjunction with national radio-frequency management bodies, of the ICAO position on crucially important issues in radio-frequency spectrum use and management matters and their direct effect on safety and air navigation, which are on the agenda of the World Radio Communication Conference (2023) (WRC-23) of the International Telecommunication Union (ITU).</p>	
References:	
<ul style="list-style-type: none">• Annex 10 — Aeronautical Telecommunications, Volume II - Communication Procedures including those with PANS status, and Volume V — Aeronautical Radio Frequency Spectrum Utilization .• Manual on Radio Frequency Spectrum Requirements for Civil Aviation, Volume I• Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (Doc 9718)• RAC 210, Aeronautical Regulations of Colombia	
ICAO Strategic Objectives:	<i>A – Safety</i> <i>B – Air Navigation Capacity and Efficiency</i>

1. INTRODUCTION

1.1 The radio spectrum is a limited natural resource made up of the set of electromagnetic waves whose frequency is conventionally fixed below 3000 GHz. It is the exclusive property of the States and as such constitutes a good of public domain, inalienable and imprescriptible, whose management, administration, surveillance and control correspond to each Nation. It is internationally recognized that aeronautical radio services are the main users of radio frequencies, without which aircraft operations could not meet world demand for safe, efficient and profitable transport.

1.2 In the Colombian State, the Ministry of Information and Communications Technologies through Law 1341 of 2009 which defines principles and concepts on the information society and the organization of Information and Communications Technologies – ICT, creates the National Spectrum Agency and through the National Frequency Allocation Table the management is carried out, planning and attribution and monitoring of the radio spectrum in Colombia, which allows the different radiocommunication services in the country to operate in frequency bands previously

defined for each of them, in order to ensure their operability, minimize the probability of objectionable interference and allow the coexistence of telecommunications services within the same frequency band, where applicable.

1.3 The Aerocivil of Colombia has actively participated in the different workshops carried out by ICAO at the regional level in the field of Radio Frequency Spectrum, especially in 2021 and has shared information about the protection of the radio spectrum for air navigation services with the national agencies mentioned above through working tables before a possible use of the spectrum in the 5G frequency band.

2. ANALYSIS

2.1 With regard to the location within the spectrum of CNS aeronautical services used by the civil aviation sector, which are distributed in the frequency spectrum of bands LF, MF, HF, VHF, UHF, SHF and EHF, the fixed satellite service which can include feeder links to other space radiocommunication services is outstanding, while special attention is drawn to down link bands, the aeronautical mobile service between aeronautical stations and aircraft stations, mainly in bands adjacent to the onboard radio altimeter band, or between aircraft stations which may include ship stations or rescue devices such as emergency position indicating radio beacons that operate on designated distress or emergency frequencies, aeronautical mobile service reserved for aeronautical communications on flight safety and regularity, primarily on national or international civil aviation routes, and the aeronautical mobile-satellite service in which mobile earth stations are located on board aircraft.

2.2 The main threats to aviation, should ICAO's spectrum goals not be met satisfactorily, include the likelihood of hazardous interference with radionavigation systems and vital aeronautical radiocommunications. This could have many consequences and could directly and seriously affect the safety and efficiency of flight operations. Long-term planning and commitment are required if future aviation frequency spectrum needs are to be met. In order to respond proactively to growing pressure from other sectors that rely on the frequency spectrum, it is indispensable for authorities in charge of aviation regulation and the aeronautical industry to participate actively in national and international WRC-23 preparatory bodies. The purpose of the ICAO Position is to protect the aeronautical spectrum for all radiocommunication and radionavigation systems that use facilities on land and aboard aircraft.

3. CONCLUSIONS

3.1 Interference in aeronautical services can lead to serious consequences for the safety and efficiency of flight operations.

3.2 To meet future aviation frequency spectrum needs, long-term planning and commitment are required. In order to respond proactively to the increasing pressure from other sectors that depend on the frequency spectrum, it is essential, for the reasons stated above, to develop a regional work initiative, with a strategic group made up of experts from the States and in conjunction with the authorities in matters of management of the radioelectric spectrum of the States, the Civil Aviation Authorities and Providers of Services to Air Navigation and the aeronautical industry, so that they participate actively in the preparatory national and international forums and in the WRC-23 .

3.3 Carry out technical tests together with the industry of the telecommunications sector in the different States of the SAM Region, especially in the vicinity of aeronautical stations and airports to prevent and mitigate the possible adverse effects and the due "bandguard" of the new generations of latest generation stations (5G) for mobile telephony, in order to protect the needs of the aviation industry.

4. SUGGESTED ACTIONS

4.1 The Meeting is invited to:

- a) suggest that SAM Region States initiate, in conjunction with their national spectrum authorities, the evaluation of the proposal to protect the radio frequency spectrum allocated to the aeronautical service, as set out in the Endorsement of the ICAO Position, so that the Inter-American Telecommunication Commission (CITEL) or ITU-R regional meetings may, through representatives of their civil aviation administration and aviation specialists on their national delegations, participate as much as possible in ITU-R regional activities; and
- b) propose that SAM Region States endorse the ICAO Position, as stated in the **Appendix**, at ITU WRC-23 in order to ensure that world aviation aeronautical systems or services do not suffer any unintended consequences.
- c) to analyse other considerations that the Meeting deems relevant.

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APPENDIX

Regulatory provisions to facilitate radiocommunications for sub-orbital vehicles (agenda item 1.6)

- New allocation to the aeronautical mobile-satellite (R) service (AMS(R)S) of aeronautical VHF communications in the frequency band 117.975–137 MHz, while preventing any undue constraints on existing metric wave systems operating in this band (agenda item 1.7).
- Appropriate regulatory action with a view to reviewing and, if necessary, revising Resolution 155 to allow RPAS C2 links to use fixed satellite service (FSS) networks (agenda item 1.8).
- Review of Appendix 27 to the Radiocommunication Regulations and consideration of appropriate regulatory measures in order to accommodate digital technologies for aviation safety-of-life applications in existing aeronautical HF bands (agenda item 1.9).
- Studies on spectrum needs and regulatory measures for possible new allocations for the aeronautical mobile service for the use of non-safety aeronautical mobile applications (agenda item 1.10).
- Review of difficulties or inconsistencies encountered in the application of the Radiocommunication Regulations (agenda item 9.2).
- Possible measures for the protection of stations of the aeronautical and maritime mobile services in 4 800–4 990 MHz located in international waters and airspace from other stations located within national territories (agenda item 1.1).
- Identification of the frequency bands 3 300–3 400 MHz, 3 600–3 800 MHz, 6 425–7 025 MHz, 7 025–7 125 MHz and 10.0–10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis (agenda item 1.2).
- Primary mobile service allocation of the frequency band 3 600–3 800 MHz to the mobile service in IUT Region 1 (agenda item 1.3).
- Use of high-altitude platform stations as IMT base stations in the mobile service in certain frequency bands below 2.7 GHz already identified for IMT at the global or regional level (agenda item 1.4).
- Possible regulatory measures to facilitate the modernization of the Global Maritime Distress and Safety System (GMDSS) and the implementation of e-navigation (agenda item 1.11).
- Possible upgrade to primary status of the allocation for the frequency band 14.8–15.35 GHz to the space research service (agenda item 1.13).
- Harmonization of the use of the frequency band 12.75–13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels communicating with geostationary space stations in the fixed satellite service (agenda item 1.15).
- Technical, operational and regulatory measures to facilitate the use of the frequency bands 17.7–18.6 GHz, 18.8–19.3 GHz and 19.7–20.2 GHz (space-to-Earth) and 27.5–29.1 GHz and 29.5–30 GHz (Earth-to-space) by non-geostationary earth stations in motion in the fixed satellite service, while ensuring due protection of existing services in those frequency bands (agenda item 1.16).

- Appropriate regulatory measures for the establishment of inter-satellite links in specific frequency bands, or portions thereof, by adding an inter-satellite service allocation, where appropriate (agenda item 1.17).
- Review of the Resolutions and Recommendations of past WRCs with a view to their possible revision, replacement or abrogation (agenda item 4).
- Review of the amateur service and the amateur-satellite service allocations in the frequency bands 1 240–1 300 MHz to determine whether additional measures are required to ensure protection of the radionavigation-satellite (space-to-Earth) service operating in the same band (agenda item 9.1b).

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