International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)

WORKING PAPER

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Salvador, Brazil, 16 – 18 November 2022

Agenda Item 2: Global and Regional Developments
2.5 ICAO Assembly 41st. Session Results and Relevant Outcomes

MANAGEMENT OF AERONAUTICAL FREQUENCIES FOR AIR NAVIGATION SERVICES

(Presented by the Secretariat)

EXECUTIVE SUMMARY	
This working paper invites States to take a regional position to analyze in more detail the assignment of frequencies by the International Telecommunications Union (ITU) and the World Radiocommunication Conferences (WRC), with the aim of ensuring the protection of frequencies for aeronautical use and guarantee their availability for current and future aeronautical services.	
Action:	Suggested actions are presented in Section 5.
Strategic Objectives:	• Air Navigation Capacity and Efficiency
References:	• 41st Session of the ICAO Assembly: https://www.icao.int/Meetings/a41/Pages/default.aspx

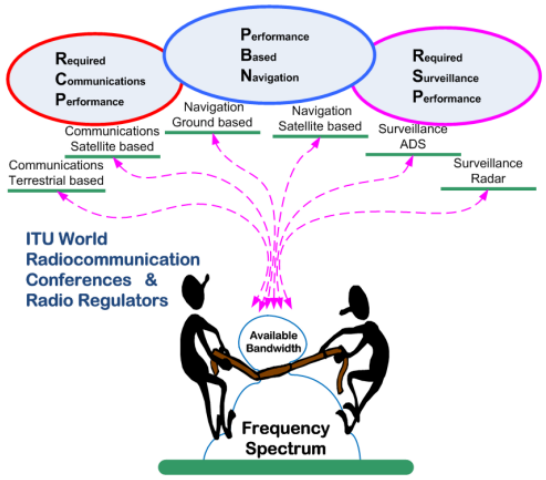
1. Introduction

1.1 The electromagnetic spectrum is a limited natural resource, which is used to provide many services, including communications for air navigation services.

1.2 The allocation of radio spectrum frequencies to the different services is carried out through the International Telecommunications Union (ITU), a specialized agency of the United Nations, in charge of regulating telecommunications at the international level between the different administrations and operating companies.

1.3 Within the ITU, the ITU World Radiocommunication Conferences (WRCs) take place and the preparatory process for the WRC in the ITU and in the Regional Telecommunications Organizations takes place every four years, with the objective of assigning the frequencies according to the needs of global operation. Availability and access to frequency spectrum is completely dependent on this program.

1.4 In the case of Air Navigation Services, the radioelectric spectrum and the allocation of frequencies for these services is extremely important:



- Frequencies for ground-based and satellite-based communications.
- Frequencies for the use of air navigation systems.
- Frequencies for surveillance systems.
- Frequencies for the use of on-board avionics.

In short, the frequencies support performance-based communications, navigation and surveillance (CNS) requirements.

These services use current frequencies and future systems will require the use of other frequency ranges.

1.5 ICAO analyses the WRC agenda four years in advance, with the aim of developing analyses to observe the impact of the new assignment proposals and issue its position to ICAO Member States. With this action, States are alerted of possible negative impacts on the allocation of frequencies for services and requests States to support ICAO's position before the WRC.

1.6 As the radio spectrum is a limited resource, aviation is but one of many users pushing for frequency assignment to provide their services and, for that matter, frequencies that had previously been assigned for aviation use now they are also shared with other services and have been fully assigned to other items.

1.7 An example of this is the allocation of frequencies for the 5G mobile communications service, which can interfere with the operation of aircraft radio altimeters and for which States are currently implementing mitigating measures that prevent operational safety decline.

1.8 The management of aeronautical frequencies must take into account that:

a) the radio spectrum is a scarce natural resource, with finite capacity limits and ever-increasing demand;
b) congestion imposes the need for rational management of the frequency spectrum;
c) frequency management is a combination of administrative procedures and technical procedures; y
d) frequency management needs to ensure interference-free and efficient operation of radio services (e.g. air/ground communications, ground/ground communications and radio navigation).

2. Frequencies Management and Assignment Process

2.1 For the assignment of frequencies there is a stipulated process and a discussion and coordination mechanism between the different stakeholders. In the case of ICAO, when the proposed agenda for the WRC is published (which is presented four years in advance), ICAO shares its position with States for the proposed agenda. The next WRC will be in the year 2023.

2.2 Aeronautical frequency spectrum management:

National Level	Regional Level	International Level
– The national frequency spectrum authority prepares and coordinates the national position. – Aviation is just one of many users pushing for attention.	– The national telecommunications authorities coordinate their position through regional organizations. – Aviation representatives cannot intervene since the National Frequency Spectrum Authority only has "one official position". – ICAO is authorized to participate.	– The national telecommunications authorities coordinate their position through the Study Groups of the ITU Radiocommunication Sector (ITU-R). – The national delegation only has "one official position". – States turn to ICAO for guidance on aviation matters.

2.3 The importance of aviation issues being addressed by each of the States is evident, firstly, in accordance with the recommendations provided by ICAO in the document "ICAO Position for the World Radiocommunication Conference of the ITU" and that each State ensures to:

a) Carry out an analysis of the impact that the items on the ITU agenda have on its aviation operations.
b) Coordinate the national policies that protect aeronautical frequencies with the national entity responsible for assigning frequencies.
c) Bring these protection issues before the regional mechanisms, so that, when the WRC Conference is finally held, States have a protection position on aeronautical frequencies, both for current services and for future aviation services.

2.4 Having frequencies assigned to aeronautical services already established worldwide benefit aviation; as well as ensuring its protection avoids interference that in aviation is reflected in a decline in operational safety.

3. Outcomes of the 41st Session of the ICAO Assembly on Aeronautical Frequency Management

3.1 The Assembly agreed on ***Resolution A41-7: Support for ICAO policy on radiofrequency spectrum matters***, in which it urges Member States, international organizations and other civil aviation stakeholders to strongly support ICAO's strategy on the frequency spectrum, as well as ICAO's position at WRCs and other regional and international activities conducted in preparation for the WRCs, including the following:

a) collaborate to achieve systems with an efficient aeronautical frequency spectrum, as well as efficient management of aeronautical frequencies that meet the "best practices" that currently exist;
b) support ICAO activities related to aeronautical frequency spectrum policy and strategy through relevant regional planning and expert group meetings;
c) commit to fully integrate aviation interests in the development of positions presented to regional telecommunication fora participating in the preparation of joint proposals to the WRC;

d) include in their proposals to the WRC, to the extent possible, material consistent with ICAO's position;
e) support ICAO's position and ICAO's policy statements at ITU's WRCs, as approved by the Council and included in the Manual on Radio Frequency Spectrum Requirements for Civil Aviation (Doc 9718);
f) commit to facilitating civil aviation experts to participate fully both in the development of regional and state positions and in the promotion of aviation interests in the ITU, and
g) ensure, to the extent possible, that its delegations to regional conferences, ITU study groups and WRCs include experts from civil aviation authorities and other civil aviation stakeholders who are fully prepared to represent aviation interests.

3.2 ICAO urges States to give priority to the safety of the public and aviation to implement secure communication services and to consult subject matter experts for decision-making.

3.3 The Assembly has requested the Secretary General to coordinate with the ITU for the proper allocation of the radio spectrum and the protection of aeronautical frequencies, as well as the allocation of resources to develop a strategy under ICAO to support regional and international activities.

4. What should GREPECAS do?

4.1 It is important that, as an implementation mechanism, GREPECAS set up a regional body that contributes to:

a) Support States jointly with ICAO in the analysis of frequency assignment on their operations.
b) Support States with information that strengthens their coordination with the regulatory entities of the national spectrum.
c) Develop regional recommendations to ensure the protection of aeronautical frequencies.
d) Support the harmonization of States' position to have a greater number of votes from States to ensure the protection of the frequencies for aviation use.

5. Suggested actions

5.1 The Meeting is invited to analyse the possibility of creating an Ad-hoc Regional Group within GREPECAS that is responsible for:

a) designing a GREPECAS project responsible for the management of aeronautical frequencies.

b) establishing the objectives of the project, as well as the Terms of Reference (ToR);

c) establishing the necessary mechanisms to begin their work as soon as possible; and

d) assuring the project establishes regional coordination so that the necessary frequencies for aviation are protected.

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