

SP/6.2 to WRC-27



| ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY



ICAO WRC-27 Preparatory Workshop

2

Relevant ICAO Provisions

Mie Utsunomiya

CNS Technical Officer, Air Navigation Bureau
International Civil Aviation Organization (ICAO)

Presentation Overview

1

ICAO Frequency Spectrum **Strategy & Policy**

2

ICAO **Position** for WRC & Relevant State Letters

3

Assembly Resolution A41-7

Management and Defence of Aviation Frequency Spectrum

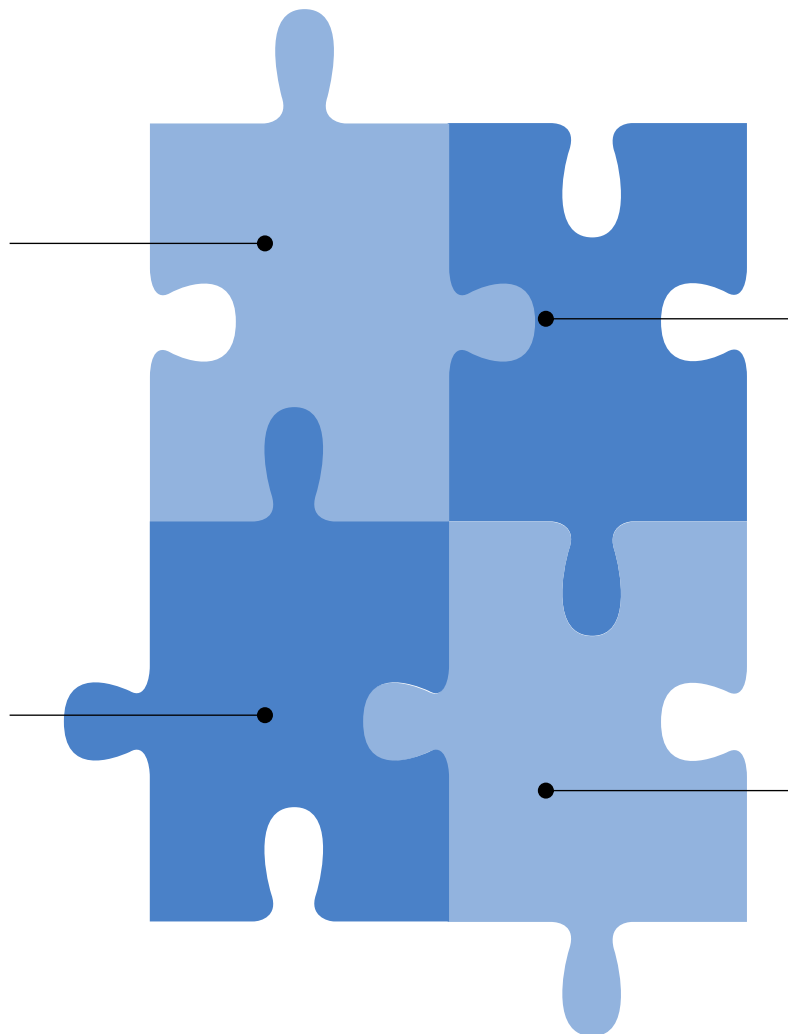
1

ICAO Frequency Spectrum Strategy

High level vision on existing and future spectrum requirements in support of the evolving CNS systems and infrastructure requirements

ICAO Frequency Policy Statements

Statements of official policy on each and every frequency band used by aeronautical systems for the provision of CNS



ICAO Position for WRC

ICAO Position on the specific agenda items of the upcoming ITU WRC to ensure that aeronautical requirements and safety concerns are met

Strategy for establishing and promoting the ICAO WRC Position

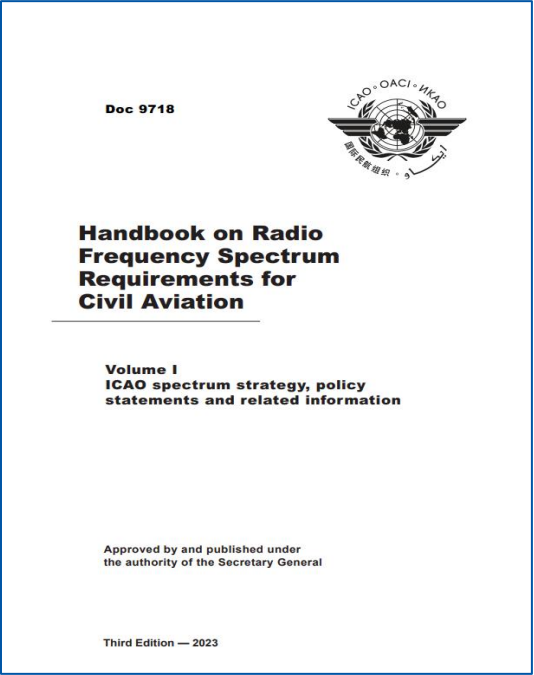
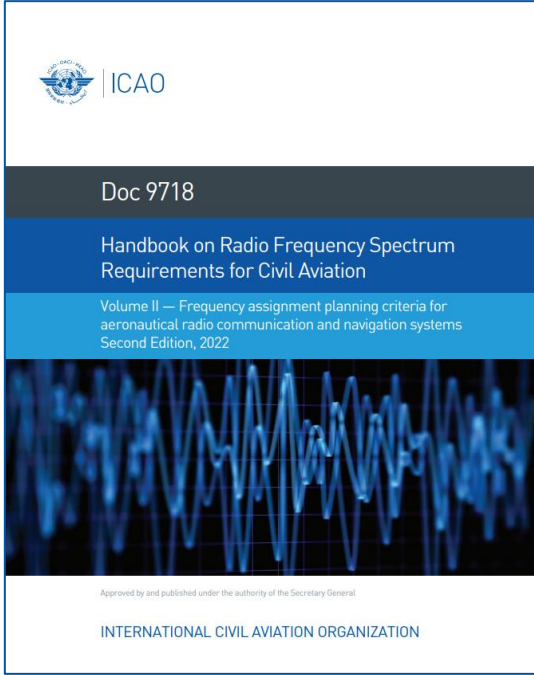
(including **Assembly Resolution A41-7**)

2

3

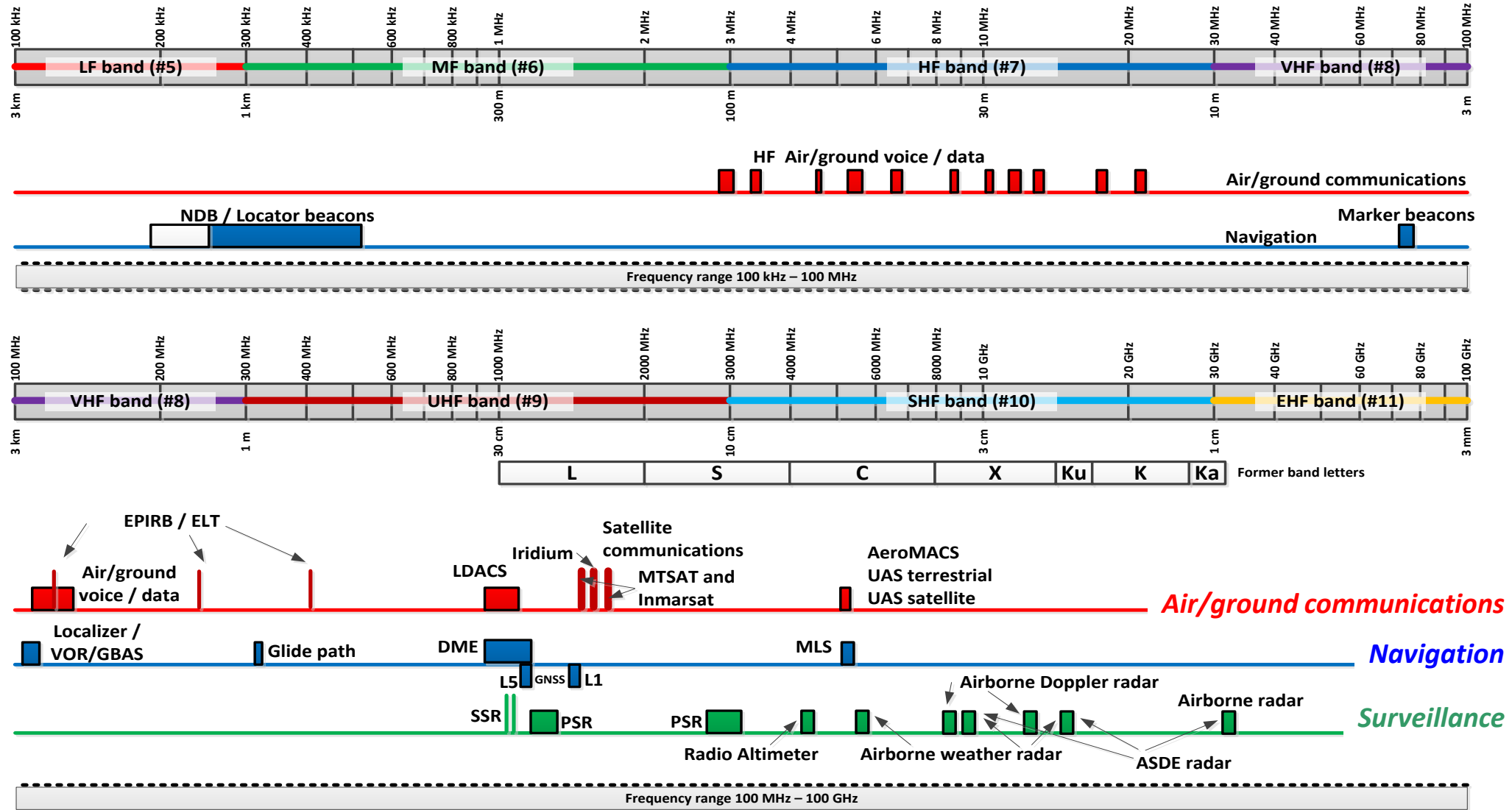
ICAO Doc 9718

Handbook on Radio Frequency Spectrum Requirements for Civil Aviation

Vol. I - ICAO Spectrum Strategy and Policy	Vol. II - Frequency Assignment Planning
 <p>Doc 9718</p> <p>Handbook on Radio Frequency Spectrum Requirements for Civil Aviation</p> <p>Volume I ICAO spectrum strategy, policy statements and related information</p> <p>Approved by and published under the authority of the Secretary General</p> <p>Third Edition — 2023</p> <p>3rd edition (2023)</p>	 <p>Doc 9718</p> <p>Handbook on Radio Frequency Spectrum Requirements for Civil Aviation</p> <p>Volume II — Frequency assignment planning criteria for aeronautical radio communication and navigation systems Second Edition, 2022</p> <p>Approved by and published under the authority of the Secretary General</p> <p>INTERNATIONAL CIVIL AVIATION ORGANIZATION</p> <p>2nd edition (2022)</p>
<p>Handbook on Radio Frequency Spectrum Requirements for Civil Aviation - Volume I — ICAO spectrum strategy, policy statements and related information (Doc 9718-1) ICAO Store</p>	<p>Handbook on Radio Frequency Spectrum Requirements for Civil Aviation - Volume II — Frequency assignment planning criteria for aeronautical radio communication and navigation systems (Doc 9718-2) ICAO Store</p>

Doc 9718 and other relevant draft material can be downloaded from the FSMP website (Documents section) at <http://www.icao.int/safety/fsmp>

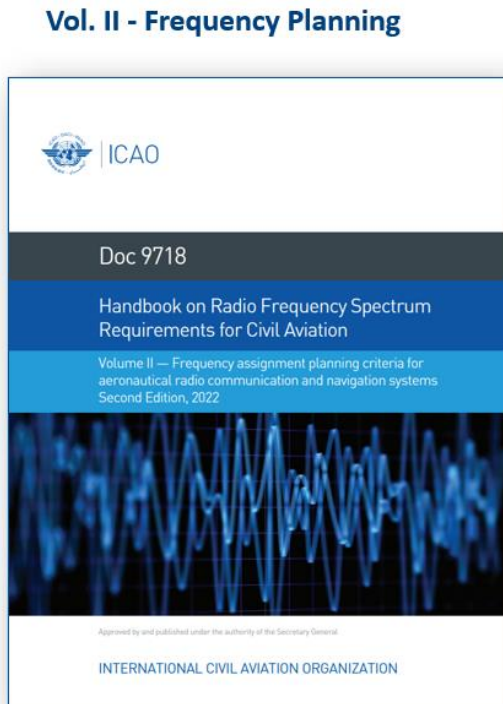
Over 1 GHz of frequency spectrum in global allocations to aeronautical safety services



Notes:
 Drawing not to scale
 Not all Regional or sub-Regional allocations are shown
 Band identification (e.g. VHF) and band # per Radio Regulations
 The satellite communication bands used by MTSAT and Inmarsat are not allocated to the Aeronautical Mobile Satellite (R) Service

Doc 9718 Volume II

Frequency assignment planning



Published for the first time in 2013,

Updated in 2017 and 2022

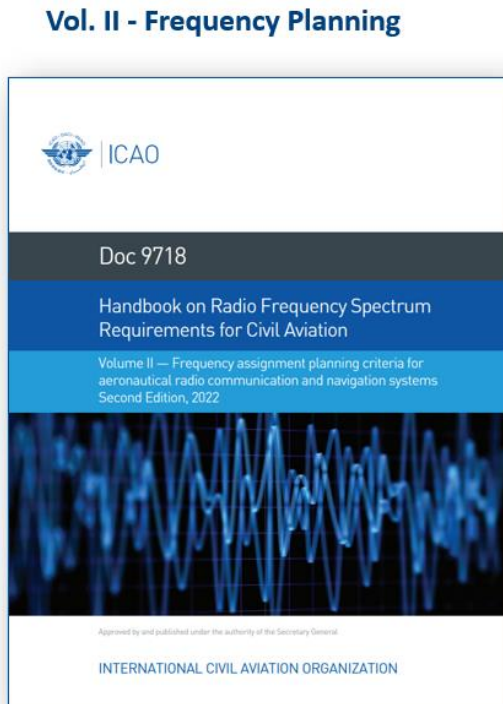
Provides globally harmonized frequency assignment planning criteria and guidance material to support the application of SARPs in Annex 10, Vol. V

- Developed in conjunction with the revisions to Annex 10, Vol. V
- Developed by FSMP (previously ACP Working Group F) and NSP
- **Implementation through Regional Air Navigation Agreement by PIRG**
- Frequency Assignment Planning criteria is used by the ICAO Frequency Assignment Planning software: **Frequency Finder (FF)**

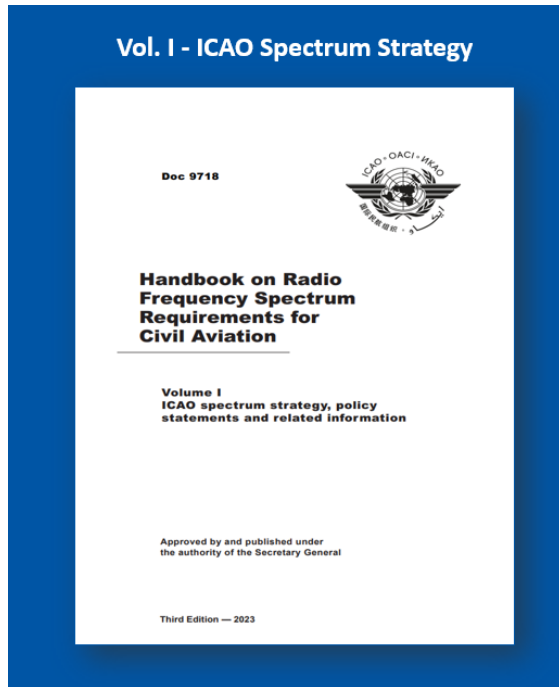
Doc 9718 Volume II

Frequency assignment planning

Future work



- The 2022 update added material on radionavigation systems (ILS, VOR, DME and GBAS), as developed with the help of NSP. Some additional updates of this material is planned in Q2 2025
- Future work will concentrate on refining the existing criteria and adding criteria for systems such as Space based VHF and LDACS



Doc 9718 Volume I

Spectrum Strategy and Policies

Overall ICAO Spectrum Policy (approved by Council)

- 1
 - ICAO Spectrum **Strategy**
 - Long term spectrum use of current and future radio systems
 - ICAO Spectrum **Policy** Statements
 - Specific actions to assist in meeting the Strategic Objectives
- 2
 - ICAO **Position** for future WRC's
 - Medium and long term availability of spectrum for aviation

ICAO Position and WRC preparations



ICAO position established
after WRC agenda established

FSMP is the focal point on
all aspects related to
development of ICAO's position

Reviewed by ANC,
State Letter process,
Approved by Council



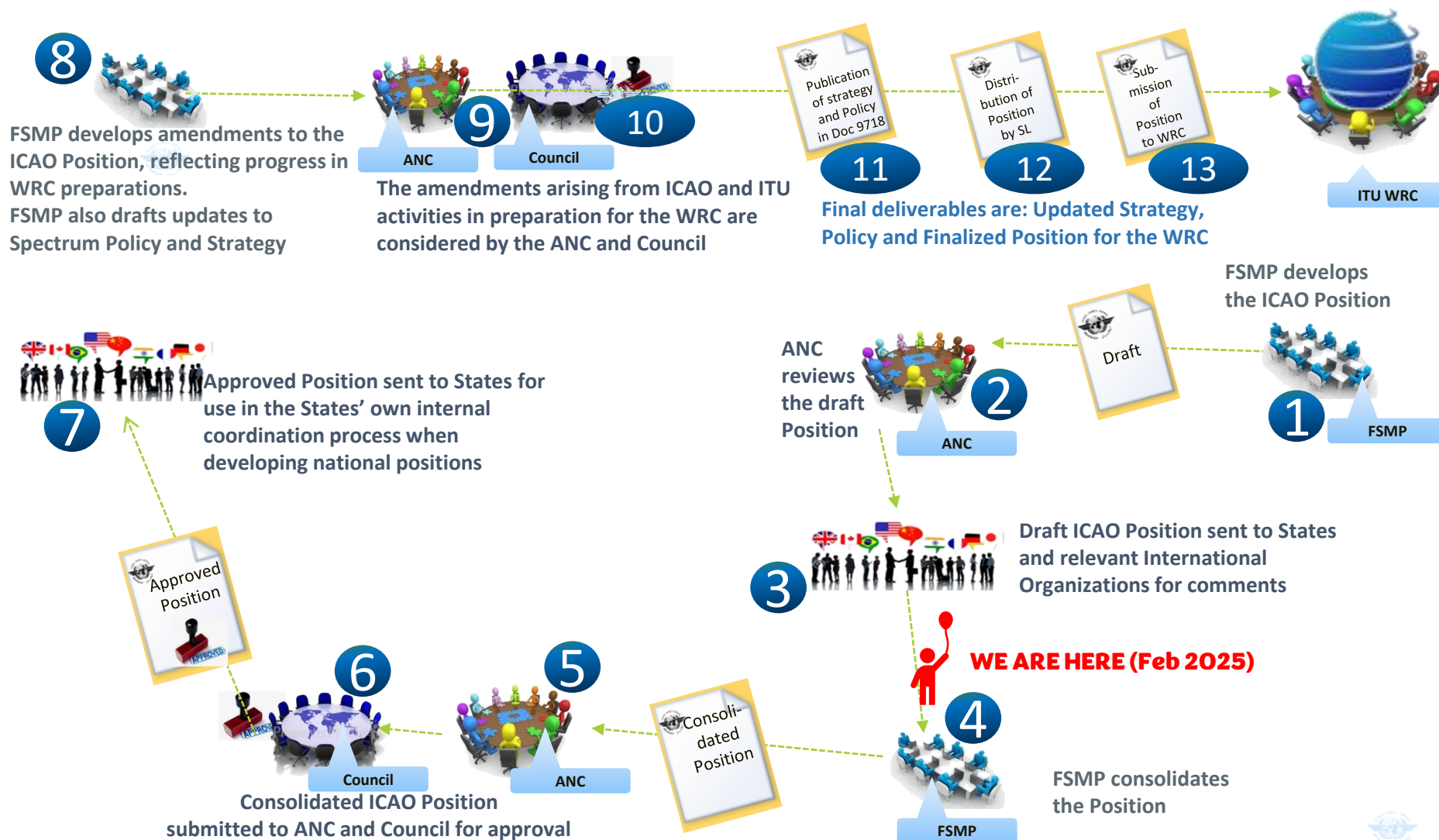
The Position presents ICAO
views on all WRC agenda items
of interest to international civil
aviation, with particular regard
to safety and regularity of flight

ITU WRC Agenda established



Proper co-ordination
with the 7 ICAO
Regional Offices

ICAO Position and WRC preparations



Development of the ICAO Position for WRC-27

2024/93

Draft ICAO Position on items of interest to aviation on the agenda of the International Telecommunication Union (ITU) World Radiocommunication Conference (2027) (WRC-27)



On 10 Oct 2024, the ANC

- undertook a preliminary review of the proposed ICAO Position, which was drafted by FSMP and
- agreed with the draft ICAO Position for WRC-27, which has been submitted to all ICAO Member States and relevant Int Orgs for comment (with due date of 14 Feb 2025).

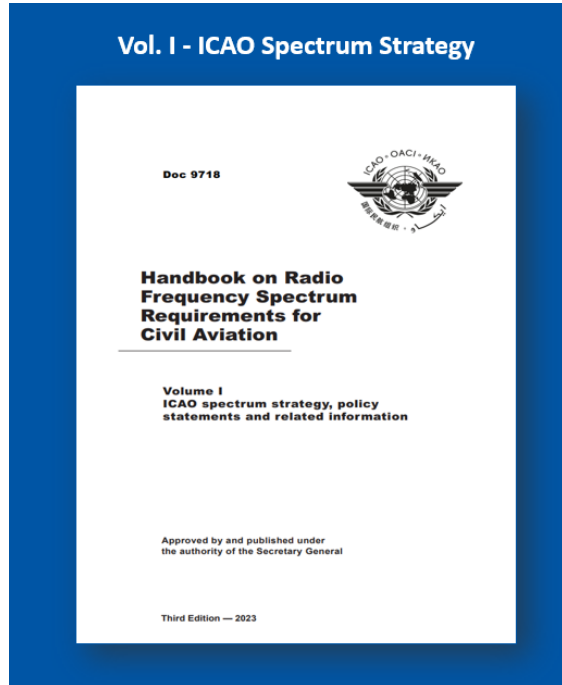
State Letter 24/93 (ICAO-NET)

En SL 2024.93	fr	es	ru	ar	zh
--	--------------------	--------------------	--------------------	--------------------	--------------------

States and Int Orgs are requested to take into account the ICAO Position, to the maximum extent possible,

- **in their prep activities for the WRC-27 at the national level,**
- **in the activities of the regional telecommunication organizations and**
- **in the relevant meetings of the ITU.**

ANC will review comments and update it in May 2025, then it will be processed to the Council approval in June/Jul 2025



Doc 9718 Volume I


Spectrum Strategy and Policies

Future work

- Inclusion of the **ICAO position** for WRC-27 and other additional updates of this material is planned in Q2/Q3 2025

Relevant State Letter – Agenda item 1.7

Webinar on potential safety concerns to radio altimeters operating in the 4 200-4 400 MHz band



International
Civil Aviation
Organization
Organisation
de l'aviation civile
internationale
Organización
de Aviación Civil
Internacional
Международная
организация
гражданской
авиации
منظمة الطيران
المدني الدولي
国际民用
航空组织

Tel.: +1 514-315-2009
Ref.: AN 7/69 - 25/3 13 February 2025

Subject: Webinar on potential safety concerns to radio altimeters operating in the 4 200-4 400 MHz band

Action required: As in paragraph 7

Sir/Madam,

1. Further to the State Letter E 3/5-24/93¹ dated 14 November 2024 (attached), I bring to your attention the ongoing spectrum defence activities in preparation for the International Telecommunication Union (ITU) World Radiocommunication Conference (2027) (WRC-27), by the International Civil Aviation Organization (ICAO), to ensure continued public and aviation safety.

2. Among the WRC-27 agenda items identified in the above-mentioned State letter, Agenda Item 1.7² is becoming challenging in the international spectrum meetings. An unfavourable result may seriously degrade the safety of radio altimeters operating in the 4 200-4 400 MHz band. Radio altimeters are safety critical equipment which provide an accurate, independent, and absolute measurement of the minimum distance to the Earth's surface below an aircraft. The radio altimeters are integrated into a number of safety critical aircraft functions³.

3. There has been limited participation in the ITU preparatory studies by experts from aviation regulators, air navigation service providers, equipment manufacturers, airlines and related industry. Additionally, there has been insufficient support and understanding of the relevant aviation safety issues by some national radio spectrum regulators. These issues have resulted in the current ITU studies for WRC-27 Agenda Item 1.7 making incorrect assumptions about the radio altimeters' performance and critical operational scenarios, such as proximity to obstacles during aircraft landing and take-off. If the frequency bands adjacent to the radio altimeter band will be allocated to international mobile telecommunications (IMT) without due consideration to relevant operational scenarios, the resulting WRC-27 outcome may not protect the radio altimeters against harmful interference.

¹ Draft ICAO Position on items of interest to aviation on the agenda of the International Telecommunication Union (ITU) World Radiocommunication Conference (2027) (WRC-27) (E 3/5-24/93)

² Studies on sharing and compatibility and development of 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

³ Such systems include, but are not limited to the flight control system, automated landing, terrain awareness warning system, airborne collision avoidance systems, and wind shear detection and recovery applications.

999 Robert Bourassa Boulevard | Tel.: +1 514-954-6219 | Email: icaoahq@icao.int
 Montreal, Quebec | Fax: +1 514-954-6077 | www.icao.int
 Canada H3C 5H7

-2-

4. Furthermore, current ITU studies indicate that some national radio spectrum regulators and related telecommunications industry participants view potential interference to the radio altimeters as a national issue, hence not requiring ITU studies before a decision is made on Agenda Item 1.7. The *Convention on International Civil Aviation*, in particular Article 37—*Adoption of international standards and procedures*, calls for uniformity in regulations, standards and procedures. Any non-harmonized implementation by States, causing a safety impact to the operation of the radio altimeters due to potential interference, is a global issue.


5. To promote ICAO's Position and increase awareness of aeronautical frequency spectrum issues, ICAO plans to organize four regional WRC-27 preparatory workshops, the first of which will be held at the Asia and Pacific (APAC) Regional Office in February 2025⁴.

6. In addition, to address the serious concerns for continued safe radio altimeter operation as mentioned above, ICAO will organize a webinar on WRC-27 Agenda Item 1.7 as follows:

Date: 20 March 2025
 Time: 12:00-13:30 (UTC)
 Online Registration: <https://www.icao.int/Meetings/WRC27-A11.7/>

7. I would like to encourage all States and relevant aviation industry stakeholders to note the State letter referenced in paragraph 1 and support the ICAO Position for WRC-27; to participate in WRC-27 preparatory activities within ICAO and ITU; and to attend the webinar listed in paragraph 6.

Accept, Sir/Madam, the assurances of my highest consideration.


 for Juan Carlos Salazar
 Secretary General

Enclosure:

- State letter E3/5 24/93 re: Draft ICAO Position on items of interest to aviation on the agenda of the International Telecommunication Union (ITU) World Radiocommunication Conference (2027) (WRC-27)

⁴ The other three regional WRC-27 preparatory workshops will be held in the MID/EUR/NAT, ESAF/WACAF and NACC/SAM Regions.

State Letter 25/03 (ICAO-NET)

En SL 2025.03	fr	es	ru	ar	zh
--	--------------------	--------------------	--------------------	--------------------	--------------------

To address the serious concerns for continued safe radio altimeter operation, ICAO will organize a webinar on WRC-27 Agenda Item 1.7:

Date: 20 March 2025

Time: 12:00-13:30 (UTC)

Online Registration:

<https://www.icao.int/Meetings/WRC27-A11.7>

Assembly Resolution A41-7

Urges Member States, international organizations and other civil aviation stakeholders to support firmly the ICAO frequency spectrum strategy and the ICAO position at WRCs and in regional and other international activities conducted in preparation for WRCs, including by the following means:

RESPONSIBLE	working together to deliver spectrum-efficient aeronautical systems as well as frequency management that meet current best practices
ACCOUNTABLE	supporting ICAO activities relating to the aviation frequency spectrum strategy and policy through relevant expert group meetings and regional planning groups
FULL INTEGRATION	<ul style="list-style-type: none">- Undertaking to provide for aviation interests to be fully integrated in the development of their positions presented to regional telecommunications fora involved in the preparation of joint proposals to the WRC- Including in their proposals to the WRC, to the extent possible, material consistent with the ICAO position
SUPPORTIVE	supporting the ICAO position and the ICAO policy statements at ITU WRCs
PARTICIPATE	undertaking to provide civil aviation experts to fully participate in the development of States' and regional positions and development of aviation interests at the ITU
REPRESENT AVIATION INTERESTS	ensuring, to the maximum extent possible, that their delegations to regional conferences, ITU study groups and WRCs include experts from their civil aviation authorities and other civil aviation stakeholders who are fully prepared to represent aviation interests

Assembly Resolution A41-7

Urges Member States to consider, as a priority, public and aviation safety when deciding how to enable new or additional services, and to consult with aviation safety regulators, subject matter experts and airspace users, to provide all necessary considerations and to establish regulatory measures to ensure that incumbent aviation systems and services are free from harmful interference:

Requests the Secretary General Requests the Secretary General to bring to the attention of ITU the importance of adequate radio frequency spectrum allocation and protection for the safety of aviation; and

Instructs the Council and the Secretary General, as a matter of high priority within the budget adopted by the Assembly, to ensure that the resources necessary to support the development and implementation of a comprehensive aviation frequency spectrum strategy, as well as increased participation by ICAO in international and regional spectrum management activities are made available



ICAO
Headquarters
Montréal

European and
North Atlantic
(EUR/NAT) Office
Paris

Asia and Pacific
(APAC) Sub-office
Beijing

Middle East
(MID) Office
Cairo

Western and
Central African
(WACAF) Office
Dakar

North American
Central American
and Caribbean
(NACC) Office
Mexico City

South American
(SAM) Office
Lima

Eastern and
Southern African
(ESAF) Office
Nairobi

Asia and Pacific
(APAC) Office
Bangkok

Thank You!