



ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY

GLOBAL DEVELOPMENTS
RELATED TO CNSS

RECONNECTING THE WORLD

GLOBAL DEVELOPMENTS RELATED TO CNS and Spectrum

BY CNSS SECTION

ICAO APAC CNS SG/30 Meeting

Bangkok, Thailand

06-10 July 2026

Presentation Overview

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01 COMMUNICATIONS

02 NAVIGATION

03 SURVEILLANCE

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05 INTEGRATED CNS &
SPECTRUM

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GLOBAL DEVELOPMENTS RELATED TO CNS & Spectrum

COMMUNICATIONS

The 7th meeting of the Data Communication Infrastructure Specific Working Group of the Communications Panel (CP-DCIWG/7) was held 11-14 June 2024. Several deliverables, proposals for amendment to Annex 10 Volume III, were provided by CP-DCIWG/7.

- **Amendment to Annex 10-Aeronautical Telecommunications, Volume III – Communication Systems relating to Updates of the SATCOM SARP.**

(The PfA introduces in the AMS(R)S SARPS stringent performance provisions for new technical capabilities which will support new enhanced services, such as ATS B2 for data and one stage secure dialing for voice. These new provisions are based on published industry performance standards.)

- PfA preliminary review was conducted in Q1 2025
 - State letter was published AN 7/64.1.3- 25/51 23 May 2025
- Final review by the Air Navigation Commission planned for June 2026

COMMUNICATIONS

6

Council Adopted amendment 93 to Annex 10, Volume III related to ATN/IPS and amendment 94 to Annex 10, Volume II Cont.



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Международная
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Ref.: AN 7/63.1.3, AN 7/64.1.1- 23/59

31 July 2023

Subject: Proposed amendment to Annex 10, Volume III related to ATN/IPS and consequential amendment to Annex 10, Volume II, stemming from the sixth meeting of the Data Communications Infrastructure Working Group of the Communications Panel (CPDCIWG/6)

Action required: Comments to reach Montréal by 31 January 2024

Sir/Madam,

1. I have the honour to inform you that the Air Navigation Commission (ANC), at the sixth meeting of its 223rd Session held on 13 June 2023, considered a proposal developed by the sixth meeting of the Data Communications Infrastructure Working Group of the Communications Panel (CPDCIWG/6) to amend Annex 10 — *Aeronautical Telecommunications*, Volume III — *Communication Systems*, Part I — *Digital Data Communication Systems* and Part II — *Voice Communication Systems*, and consequential amendment to Annex 10, Volume II — *Communication Procedures including those with PANS status*. The Commission authorized its transmission to Member States and appropriate international organizations for comments.

2. The proposal introduces provisions relating to updates to the aeronautical telecommunication network (ATN)/Internet Protocol Suite (IPS) requirements regarding IPS mobility across multiple media, naming and addressing, IPS security, quality of service (QoS), system management and overall transitional aspects.

State Letter (AN 7/64.1.3- 25/51) was published on 23 May 2025 and circulated to States and international organizations for their comments.

Due date for comments is set to 24 November 2025.

Proposals for the amendment of Annex 10, Volume III relating to satellite communication systems in support of ASBU Blocks 1 and 2, arising from the seventh meeting of the Data Communication Infrastructure Specific Working Group of the Communications Panel (CP-DCIWG/7)

COMMUNICATIONS

7

Council Adopted amendment 93 to Annex 10, Volume III related to ATN/IPS and amendment 94 to Annex 10, Volume II Cont.



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Tel.: +1 514-315-2526

Ref.: AN 7/64.2.4-25/25

23 April 2025

Subject: Adoption of Amendment 93 to Annex 10,
Volume III

Action required: a) Notify any disapproval before
4 August 2025; b) Notify any differences and
compliance before 27 October 2025; c) Consider the use
of the Electronic Filing of Differences (EFOD) System
for notification of differences and compliance

Sir/Madam,

1. I have the honour to inform you that Amendment 93 to the *International Standards and Recommended Practices, Aeronautical Telecommunications— Communication Systems* (Annex 10, Volume III, to the Convention on International Civil Aviation) was adopted by the Council at the twelfth meeting of its 234th Session on 28 March 2025. Copies of the Amendment and the Resolution of Adoption are available as attachments to the electronic version of this State letter on the ICAO-NET (<http://portal.icao.int>) where you can access all other relevant documentation.

State Letter (AAN 7/64.2.4-25/25) was published on 23 April 2025 and circulated to States and international organizations.

Action: a) Notify any disapproval before 4 August 2025; b) Notify any differences and compliance before 27 October 2025; c) Consider the use of the Electronic Filing of Differences (EFOD) System for notification of differences and compliance

The Council resolved that Amendment 93, to the extent it becomes effective, will become applicable on 27 November 2025. The SATCOM Manual is fully revamped and ready as the latest guidance supporting the new provisions to be endorsed by DCIWG/8 13-17 April 2026

COMMUNICATIONS

- In support of the Provisions on the exchange of information using the aeronautical telecommunication network over the internet protocol suite that were adopted by the Council at the twelfth meeting of its 234th Session on 28 March 2025, three new manuals and new edition of Doc 9896 were endorsed:
 - Doc 10090 “Manual of Security Services for Aeronautical Communications”
 - Doc 10095 “Manual of Public Key Infrastructure (PKI) Policy for Aeronautical Communication
 - Doc 10145 “Manual of Security Risk Assessment for Aeronautical Communications”
 - Doc 9896 “Manual on the Aeronautical Telecommunication Network (ATN) using Internet Protocol Suite (IPS) Standards and Protocol, edition 3”
 - All these are ready and published

COMMUNICATIONS

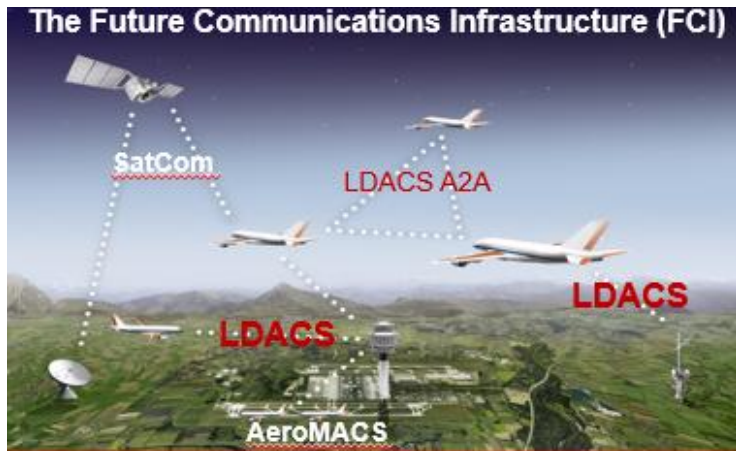
➤ SARPS on L-Band Terrestrial Data Link System (LDACS)

Future ATM Operations will require capacity and performance that cannot be met by the terrestrial data link systems in use today.

New operational procedures for ATM, as well as increasing demands for operational and business continuity require greater robustness, resilience and security in air/ground communications systems. These can be realized through the introduction of LDACS.

LDACS, a broadband system based on Orthogonal Frequency-Division Multiplexing (OFDM) like current/future cellular mobile radio standards, applies modern and highly efficient transmission concepts and advanced receiver design for interference robustness. LDACS is highly flexible and scalable and, thus, enables long-term evolution. LDACS supports high-rate data communications and voice, which enables important future applications.

- PfA updated by DCIWG-PT-T following a test campaign; results integrated with LDACS - (inter-panel TF) comments for final review at DCIWG/8 (13–17 April 2026).



COMMUNICATIONS

Space-based VHF (SB-VHF) Communications

Comprehensive SARPs Package:

- Proposal for Amendment (PfA) to Annex 10, Volume III and V.
- Supported by Validation Report confirming technical feasibility.
- Impact Assessment and Implementation Plan was also prepared and ready
- The complete SB-VHF package will be presented to the eighth meeting of the Data Communication and Infrastructure Working Group (CP-DCIWG/8).
- Following DCIWG endorsement, the package will be progressed to ANC for Preliminary Review in September 2026.

COMMUNICATIONS

- SARPS on L-Band Terrestrial Data Link System (LDACS)
 - Postpone the PfA submission until the resolution of the comments from NSP and SP on compatibility (inter-panel TF)
- Advanced cellular technology introduction for AeroMACS
 - New performance-based PfA for Vol III for AeroMACS
- Air ground data link documents, maintenance and improvements
- The Space-Based VHF PfA is ready for endorsement by DCWIG/8 meeting
 - Both Vol III and Vol V in coordination with FSMP
- Introduction of VoIP Air-ground Networks study started in DCIWG-WGI
 - Study already commenced under DCIWG WG-I during the last WG-I meeting in Oct 2025
- DCIWG/8 will also review the new job card for HYCON

SURVEILLANCE

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Follow-up of SP/5 outcome

The PfA updates the SSR transponder requirements for compatibility with the new 1090 MHz extended squitter ADS-B version 3 Format.

- preliminary review by ANC in Sep 2024, AN-WP/9778
 - State letter AN 7/64.1.2, AN 7/65.1.2-24/94 was circulated in Nov 2024.
 - Comment by 26 May 2025. Applicability on 26 2026.
-
- PfA final review by ANC in 18 November 2025, AN-WP/9867
 - Report to Council C-WP/15798 in March 2026 , Amendment 92 to A10V4

Remaining SP/5 amendment package:

- Introduction of ACAS III technical provisions (based on ACAS Xu)
- Update to airborne surveillance applications (ADS-B IN / FIM capabilities)

SURVEILLANCE

(SP/6) was held in Montréal from 4 to 13 March 2026, attended by 45 members and advisors nominated by 15 States and four international organizations. SP/6 PfA to Annex 10 Volume IV covers:

- top-level functional and performance requirements for air traffic services (ATS) surveillance systems;
- provisions requiring ground interrogators to inhibit RF transmissions when antenna rotation or scanning ceases;
- removal of lower limits for interrogation pulse rise and decay times while maintaining spectrum mask protection requirements;
- standardization of Reed-Solomon forward error correction for phase overlay data transmission;
- clarification of ACAS broadcast message behaviour;
- clarification of ACAS surveillance interrogation protocols; and
- corrections to the reply information (RI) field coding to prevent misidentification of ACAS-equipped aircraft.

The remaining elements of the SP/5 amendment package, together with additional technical updates developed by SP/6, are to be presented in AN WP 9924 for the ANC's preliminary review in May 2026.

SURVEILLANCE

- SP/6 continued work on Interval Management (IM) airborne application
- Adopted change proposal to
 - Doc 8071 Volume III,
 - Doc 9830,
 - Doc 9863,
 - Doc 9871,
 - Doc 9924,
 - Doc 9994.
- The new RSUR Manual was adopted by the panel with a new title Surveillance Performance Requirements Manual
- Updated docs are to be published.

Many WRC agenda items could affect aeronautical safety services! *Further collaboration is needed!*

Radio Altimeter
- Safety Critical system

Safety Issue?

5G

4.2 GHz **Global Radio Altimeter Operation in 4.2-4.4 GHz** **4.4 GHz** **Study on IMT use in 4.4-4.8 GHz** **4.8 GHz**

HF/Sat Communication Disturbances

GNSS Positional Errors

Radiation At Flight Altitude

Radio Altimeter
- Safety Critical system

[illegible]

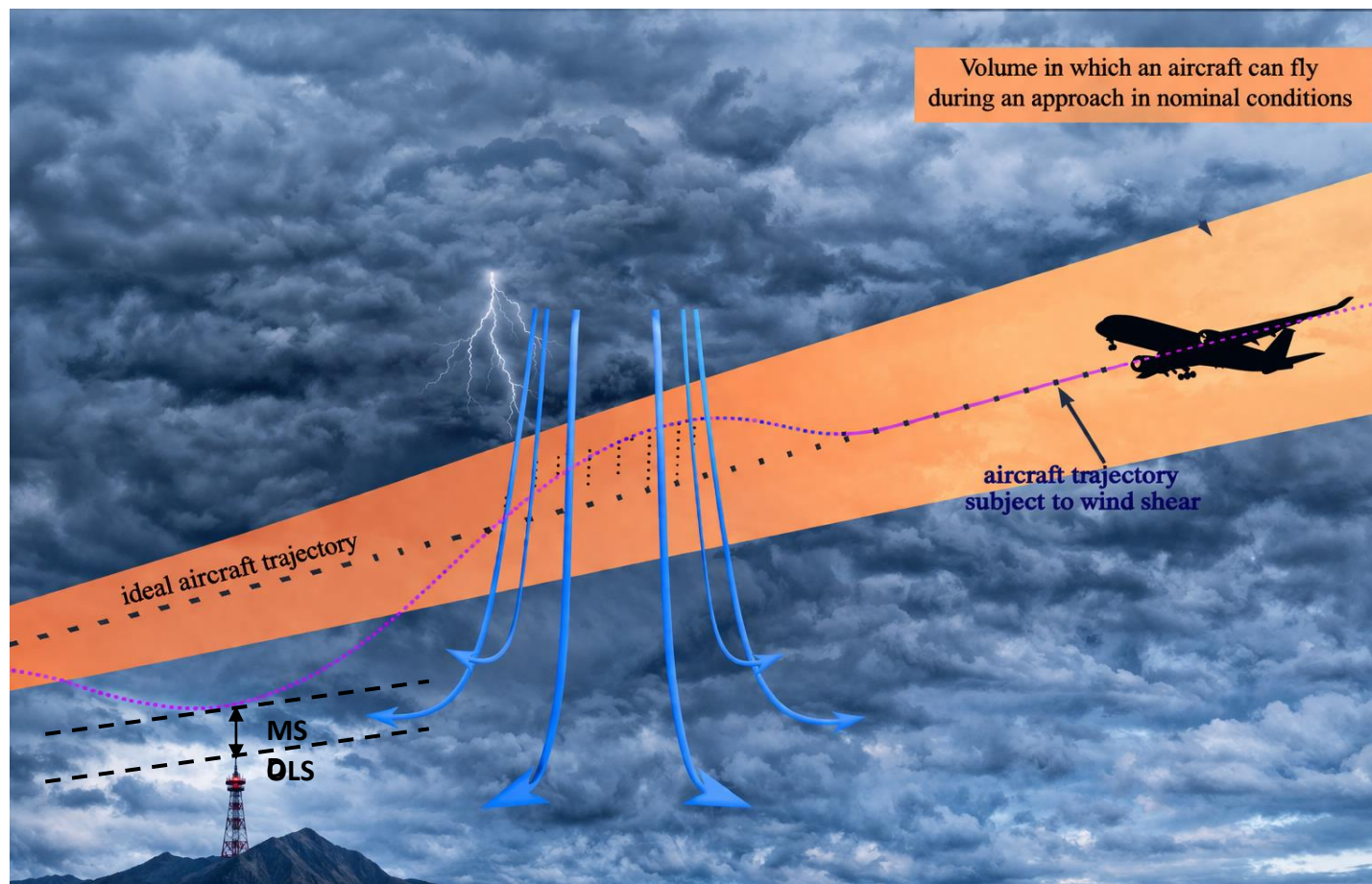
FREQUENCY SPECTRUM MANAGEMENT

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Aviation Safety Concerns: Missing scenario: Off-nominal operations

If the radio altimeter fails to provide accurate altitude information, the consequences could be severe ...

This scenario must be thoroughly addressed under WRC-27 Agenda Item 1.7



FREQUENCY SPECTRUM MANAGEMENT

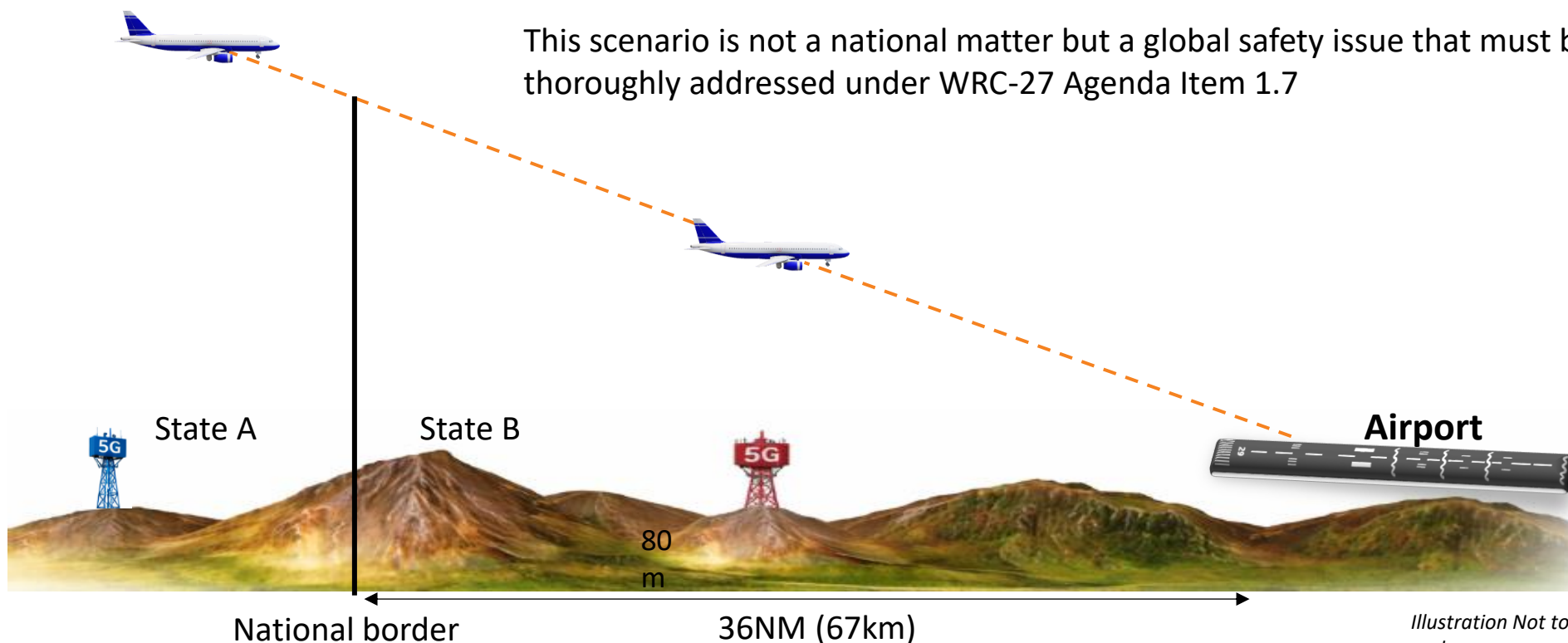
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Aviation Safety Concerns: Misconception should be corrected (It is a global issue!)

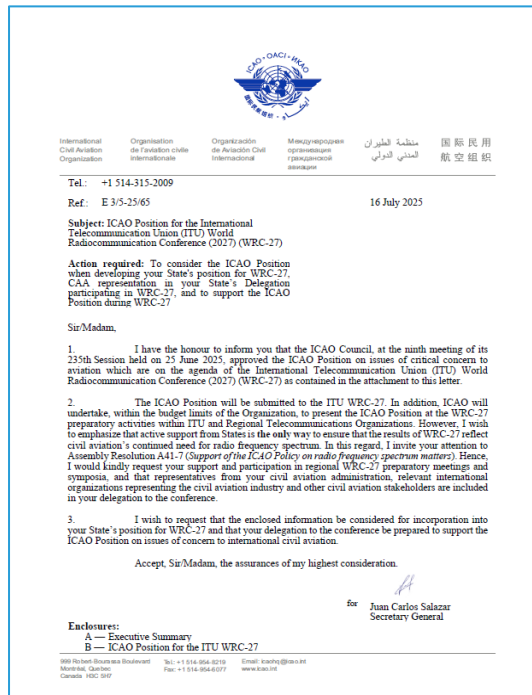
Aircraft fly globally!

The onboard systems cannot be switched off or altered at this critical stage of flight

This scenario is not a national matter but a global safety issue that must be thoroughly addressed under WRC-27 Agenda Item 1.7



ICAO Position for WRC-27 & the Call for State Support



- 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

Active support from States is deemed to be the only means to ensure that the results of the WRC-27 reflect civil aviation's interest.

Your participation is essential to secure aviation's spectrum future at WRC-27!

State Letter 24/93 (ICAO-NET)

[SL.2025.65 E](#) [ar](#) [es](#) [fr](#) [ru](#) [zh](#)

INTEGRATED CNS AND SPECTRUM

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(Long Term Evolution of CNS and Spectrum matters)

ICAO CNS & Spectrum Long-Term Strategy

ICNSS-TF establishment:

in accordance with AN-Conf/13 Recommendation 2.2/1 c),
as further supported by 41st Assembly

to:

- launch a study, built on a multi-disciplinary view of the C N S elements and frequency spectrum
- evolve the required CNS and frequency spectrum access strategy and systems roadmap in the short, medium and long term, in a performance based and service-oriented manner
- ensure that CNS systems remain efficient users of the spectrum resource

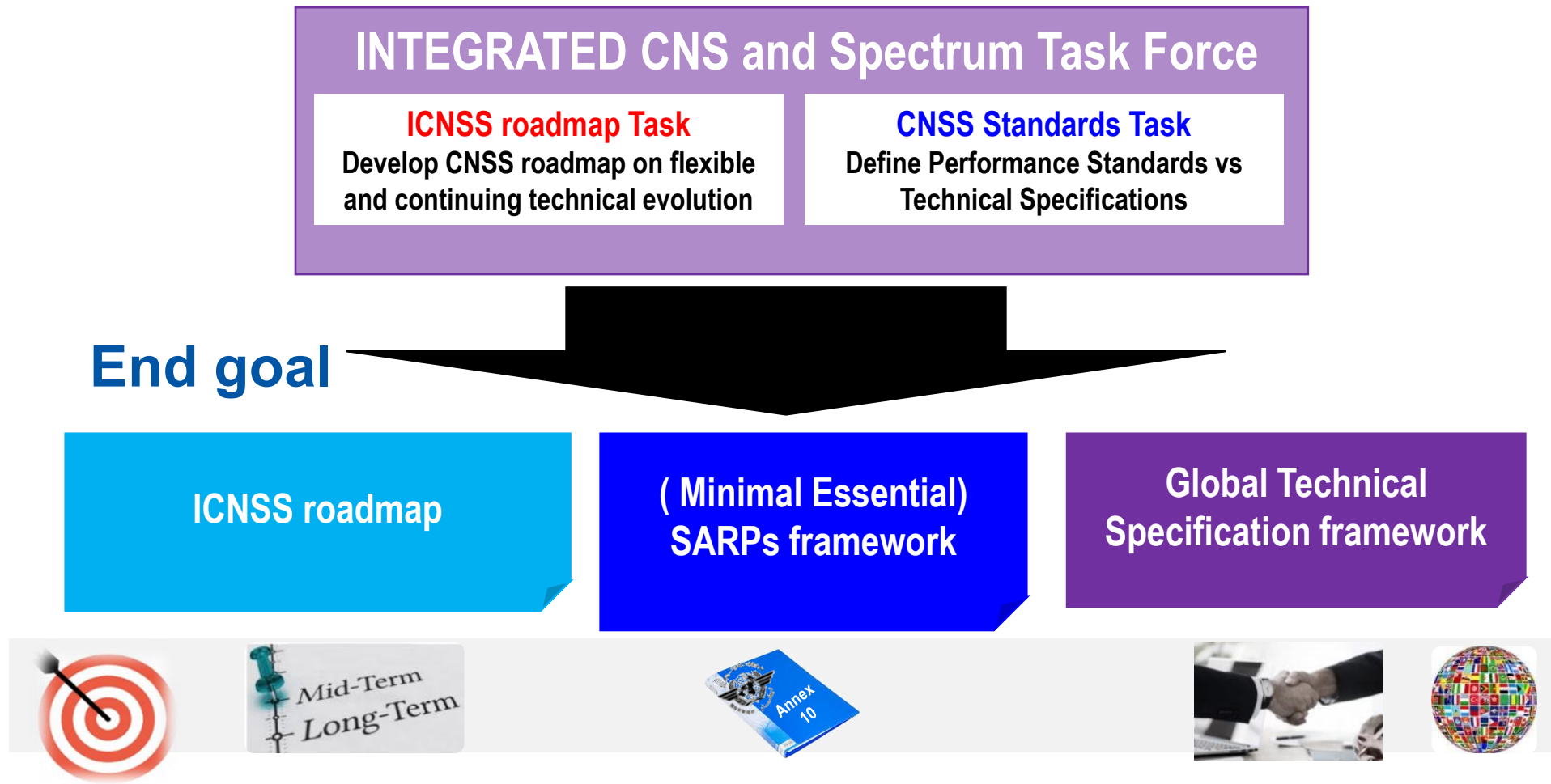
Also, note AN-Conf/13 Recommendation 5.5/3:

- calls upon ICAO to review and enhance its Standards-making processes in order to meet the requirements of the rapid pace of technological development.

INTEGRATED CNS AND SPECTRUM – Cont.

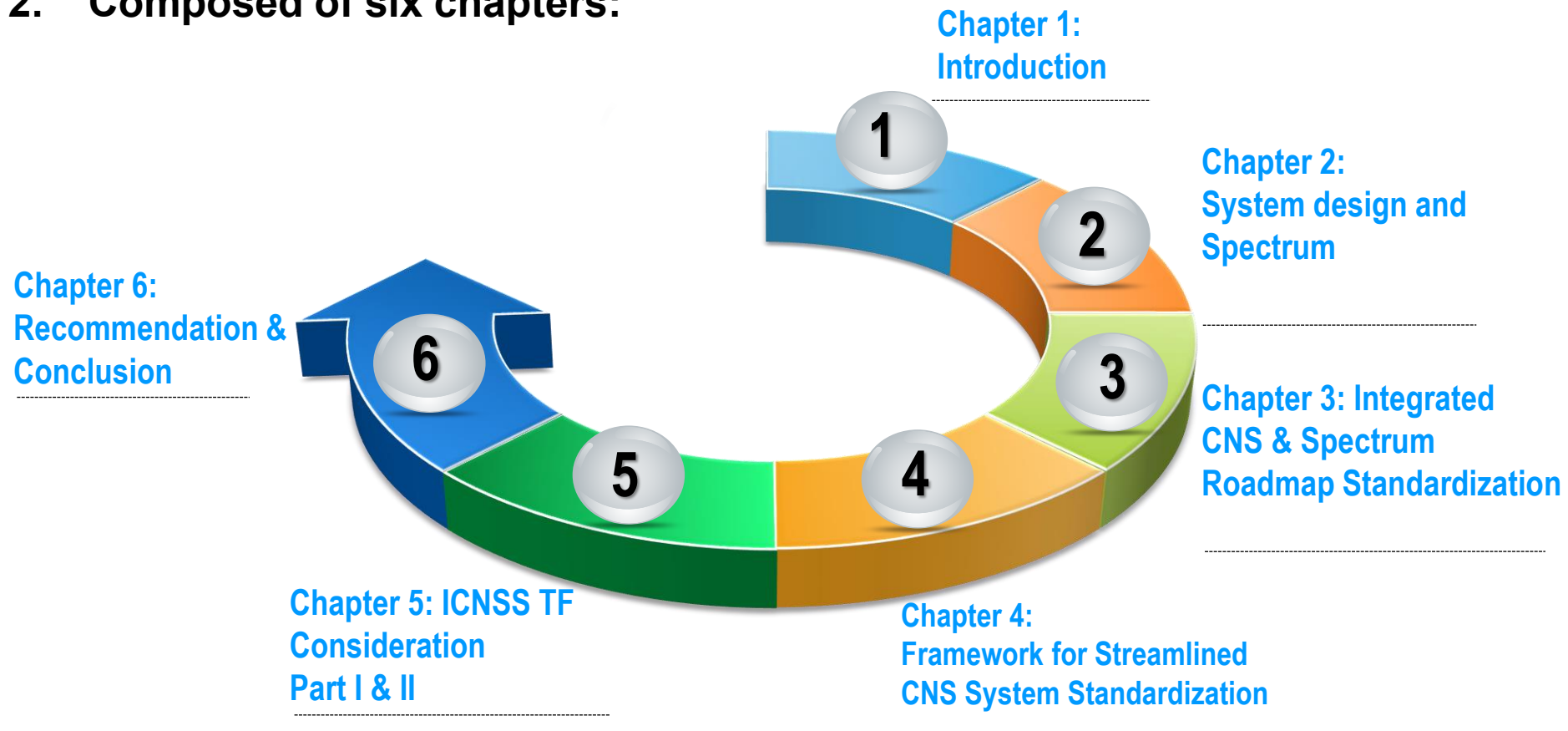
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ICNSS & SARPS Streamline



The Status Today

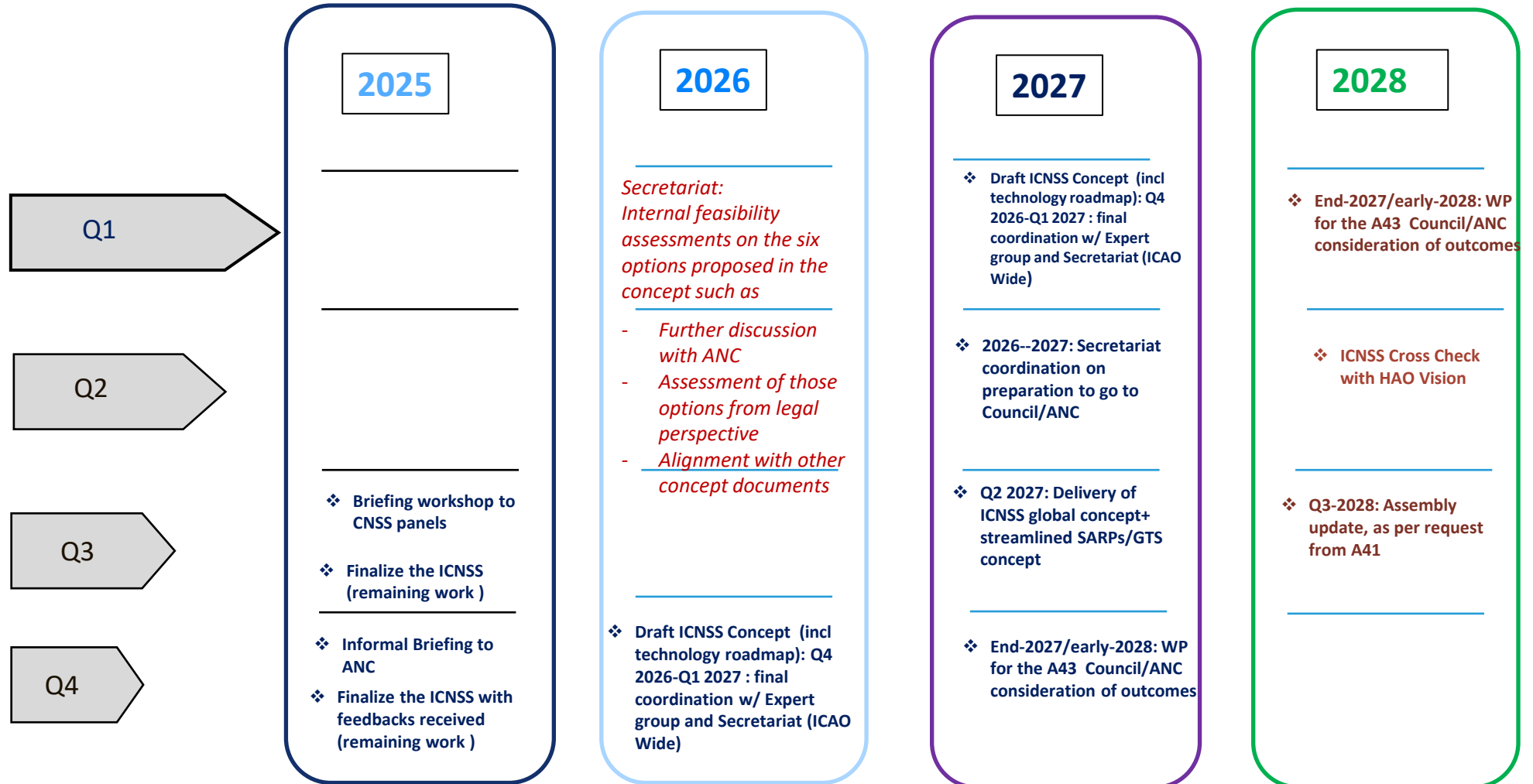
1. The ICNS and Spectrum Roadmap task and the CNS Standards task will be rolled up into one main deliverable: *Integrated CNS & Spectrum Global Concept*
2. Composed of six chapters:



INTEGRATED CNS AND SPECTRUM – Cont.

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ICNSS Timeline 2025-2028

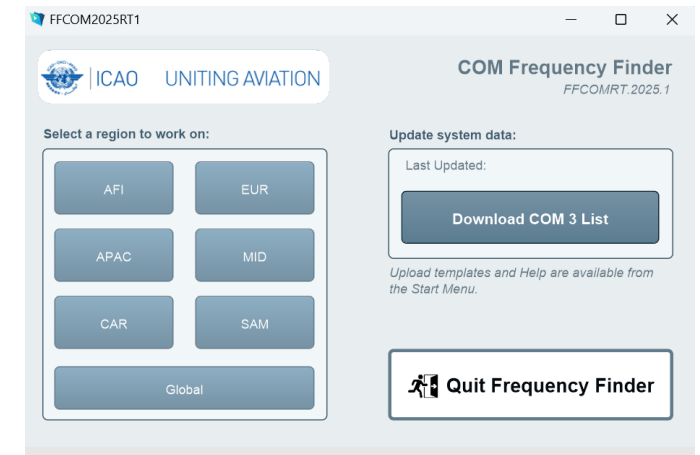


OTHER CNSS ACTIVITIES

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ENHANCEMENT OF CURRENT FREQUENCY FINDER

- Implementation of security improvements to the FF Server (frequency.icao.int). Due to this upgrade, the central database became inaccessible from outside until the necessary security improvements to the FF Server were implemented
- Release of a new version of **Full RO VHF COM and NAV module** in February 2026
- States needs to continue using the current **RT version for NAV and SSR modules** as offline tools. Assignment requests regarding the NAV and SSR modules should be addressed Regional officers.
- Development of a new **State's RT version for the VHF-COM module**
 - Released in February 2026.
 - A new layout has been implemented
 - Export/import functionalities were upgraded to ensure compliance with the latest server enhancements.



OTHER CNSS ACTIVITIES

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NEW FREQUENCY FINDER

Modernization of the existing FF application to address its current limitations, including the need to update the current FileMaker Pro to a more modern, modular and secured platform and to introduce new and more complex use cases. The Frequency Finder tool needs to be redesigned and upgraded. The modernization project will be implemented in four phases:

➤ PHASE 1 VHF COMMUNICATION SYSTEMS MODULE -

Project launched 

- Web-based application
- Online database
- Coordination process between ICAO Contracting States and ICAO Regional Offices implemented in the tool

➤ PHASE 2 NAVIGATION SYSTEMS MODULE

➤ PHASE 3 SURVEILLANCE MODULE

➤ PHASE 4 IMPROVEMENTS OF FREQUENCY FINDER

- Space-based VHF separation criteria



Thank You