



ICAO

*International Civil Aviation Organization***TENTH MEETING OF SPECTRUM REVIEW
WORKING GROUP (SRWG/10)**

Bangkok, Thailand, 04 – 06 February 2026

Agenda Item 3: Review Frequency planning requirements for the Asia/Pacific Region

3.3 Other matters

UPDATE ON SPACE-BASED VHF

(Presented by the Secretariat)

SUMMARY

This paper provides an update on the development of Standards and Recommended Practices (SARPs) for Space-based VHF. It also discusses regional and inter-regional coordination mechanisms and highlights specific regional considerations regarding frequency data validity, VHF channel spacing, and the potential impact of Space-based VHF on terrestrial systems.

1. INTRODUCTION

1.1 Space-based VHF communication is an Aeronautical Mobile-Satellite (R) Service (AMS(R)S) operating in the frequency band 117.975 – 137 MHz. This frequency band was approved for the use of Space-based VHF by a new AMS(R)S allocation at the World Radiocommunication Conference 2023 (WRC-23). The system utilizes non-geostationary satellites to provide an Air-Ground VHF Digital Link (VDL) and/or VHF Voice Communication System, thus extending VHF communication coverage to remote regions and oceanic areas where terrestrial infrastructure is not feasible, allowing aircraft to communicate with Air Traffic Control (ATC) via satellite radio links.

1.2 This paper provides the meeting with an update on the development of the relevant regulatory framework, including SARPs development, coordination mechanisms, and implementation considerations identified within the APAC region.

2. DISCUSSION**Space-based VHF SARPs Development**

2.1 ICAO is working to update the Standards and Recommended Practices (SARPs) for Aeronautical Telecommunications (Annex 10) to support Space-Based VHF.

2.2 The amendment of Annex 10 Volume III — *Communication Systems* and Volume V — *Aeronautical Radio Frequency Spectrum Utilization* for Space-Based VHF is being progressed as a joint work package under both the Frequency Spectrum Management Panel (FSMP) and the Communications

Panel - Data Communications Infrastructure Working Group (CP-DCIWG), with shared validation reports and impact assessments to be approved by both groups. According to the agreed work plan:

- FSMP will convene in March 2026 to consider and approve the Annex 10 Volume V Proposal for Amendment (PfA).
- CP-DCIWG is expected to meet shortly thereafter to consider and approve the corresponding Annex 10 Volume III PfA.
- Following panel approval, the Secretariat will prepare a joint briefing to the Air Navigation Commission (ANC) on the outcome.
- The ANC preliminary review of the joint PfA package is expected in September 2026, after which the amendment will be circulated to States for comments.

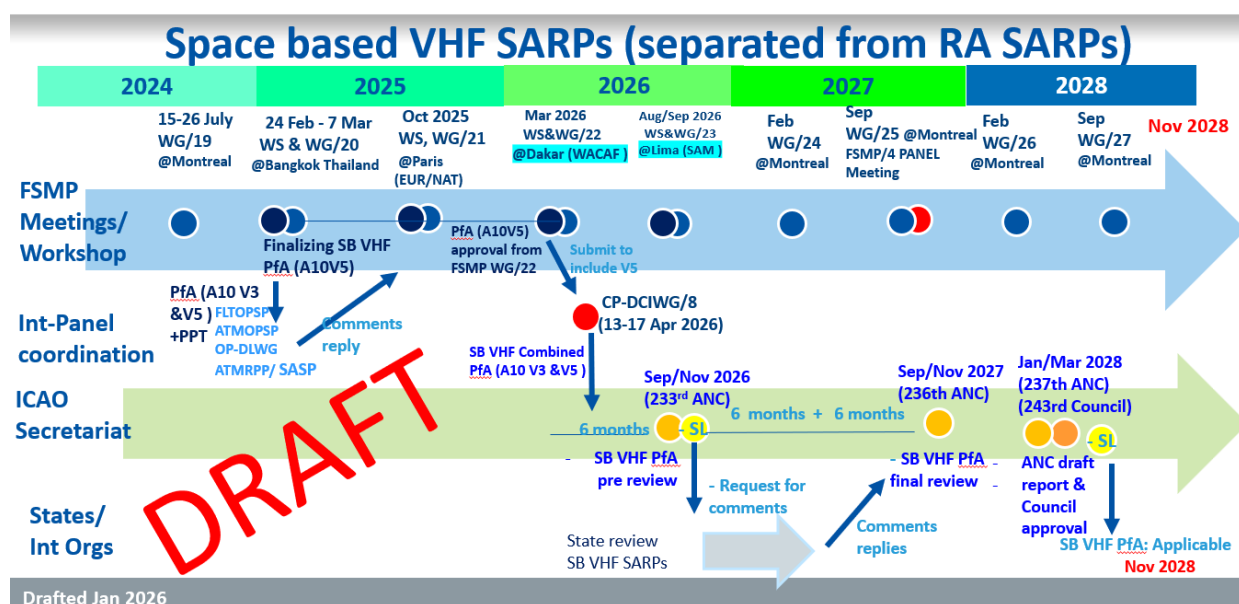


Figure 1 – Space-based VHF SARPs development timeline

2.3 Based on this schedule, the target applicability date for the amendment to Annex 10 Volume III and Volume V related to Space-Based VHF is November 2028.

Regional and Inter-regional Coordination

2.4 Recent statistical analyses performed by the FSMP concluded that it is more practical to define a frequency coordination process on a regional basis rather than globally. Consequently, the FSMP is considering a proposal for Amendment to Annex 10, Volume V, requiring that the identification of Space-based VHF frequencies be made on the basis of regional agreement.

2.5 However, given that the coverage of Space-based VHF is expected to be significantly larger than that of terrestrial systems, potentially impacting areas across several regions, extensive regional and inter-regional coordination mechanisms involving ICAO Regional Offices (ROs) must be carefully defined. The introduction of Space-based VHF may require a shift toward a more integrated worldwide approach for inter-regional frequency assignment coordination.

2.6 To address this, ICAO Headquarters held a coordination meeting with relevant CNS ROs on 18 August 2025. The meeting discussed methods for regional and inter-regional coordination and the use

of the Frequency Finder tool. The current Frequency Finder tool is undergoing a modernization project, with Phase 4 specifically dedicated to improvements that include Space-based VHF modules. The planning criteria developed by the FSMP will be implemented in this new tool to assist ROs and States in identifying candidate frequencies and conducting necessary coordination to ensure protection from harmful interference.

2.7 Draft flowcharts for regional and inter-regional coordination mechanisms were discussed and refined by the ROs, with the expectation that these will be integrated into the modernized Frequency Finder. Additionally, the FSMP Secretariat has developed an initial draft of coordination procedures to update the Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (Doc 9718). These draft provisions specify that for specific services such as Space-based VHF, prior to regional agreement on frequency assignment, inter-regional coordination is required through ICAO ROs.

2.8 A critical prerequisite identified by the ROs is the need to validate existing data within the Frequency Finder. To this end, ICAO Headquarters is working with ROs to conduct data validation activities to ensure the database is accurate before migrating to the new tool.

Regional Considerations

2.9 Recently, coordination activities have been initiated to support trials for Space-based VHF in the region. For instance, the Civil Aviation Authority of Singapore (CAAS) requested assistance from the ICAO APAC Office to identify suitable VHF frequencies for a trial, necessitating verification against existing assignments in Singapore and the surrounding States/Administrations.

2.10 During this process, it was observed that the ICAO Frequency Finder database may not fully reflect the current operational status of frequency assignments, as updates by States and Administrations are not performed in real time. As a result, the database alone cannot be relied upon for trial coordination. Under the current interim approach, ICAO Headquarters identifies potential candidate frequencies, which are then subject to coordination with affected States to confirm that they are not in operational use, irrespective of the database records. This experience highlights the importance of the ongoing data validation activities being undertaken by ICAO Headquarters and Regional Offices, as referenced in paragraph 2.9, to support the future implementation of Space-based VHF.

2.11 Beyond immediate trial coordination, broader strategic considerations have been raised regarding the interaction between Space-based VHF and legacy infrastructure. At CNS SG/29, questions were raised about the need for deployment of 8.33 KHz channel spacing in the APAC region in the near future, when space-based VHF will be implemented. In parallel, it was shared that there may be a need to assess the effect of the deployment of space-based VHF on terrestrial VHF systems in the APAC region, in order to ensure compatibility and avoid harmful interference.

2.12 The CNSSG/29 agreed that the SRWG should discuss these aspects and provide updates to the CNS SG. In this context, States are encouraged to consider these interactions in their national or regional analyses, as such information may help inform future discussions on regional spectrum planning.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the progress and timeline for the development of Space-based VHF SARPs;
- b) note the draft regional and inter-regional coordination mechanisms being developed for inclusion in the modernized Frequency Finder tool;

- c) discuss the regional considerations identified; and
- d) discuss any relevant matter as appropriate.
