International Civil Aviation Organization

MIDANPIRG/23 & RASG-MID/13 Meetings

(Cairo, Egypt, 14 – 18 June 2026)

Agenda Item 5.7: CNS

SPECTRUM ISSUES

(Presented by the Secretariat)

SUMMARY

This paper proposes a set of actions to mitigate frequency congestion in the MID Region, including revising the MID Region allotment plan, enhancing the quality of the ICAO frequency database to support more accurate frequency assignment and separation, and exploring additional measures to expand available spectrum capacity. These measures include the implementation of 8.33 kHz channel spacing, various approaches to optimize the use of the DME spectrum, and efforts to mitigate interference through effective spectrum regulatory measures and enforcement. In addition, the paper addresses emerging concerns related to Radio Altimeter protection and the potential implications of WRC-27.

Action by the meeting is at paragraph 3.

REFERENCE

- The Report of 42nd Session of the Assembly
- ICAO Doc 9718 – Handbook on Radio Frequency Spectrum Requirements for Civil Aviation
- CNS SG/15 Report

1. INTRODUCTION

1.1 The Fifth meeting of the Frequency Management Working Group (FM WG/5) was hosted by Qatar in Doha, Qatar, from 10-11 May 2026. The meeting was attended by a total of eighty-nine (89) participants, from ten (12) States and three (3) International Organizations. The FM WG/5 was conducted back-to-back with the CNS SG/15 meeting.

1.2 The MID Region is experiencing sustained growth in air traffic and airport infrastructure, including new runways and upgraded approach capabilities. This growth increases the demand for frequency assignments for VHF communication and navigation facilities. Frequency congestion issue arises when a new or modified NAV facility cannot be assigned without creating a potential incompatibility with an existing facility.

2. DISCUSSION

Frequency Congestion

2.1 The CNS SG/15 meeting reviewed VHF COM and NAV frequency congestion in the MID Region and considered several mitigation measures, including revising the regional allotment plan, improving ICAO database quality, implementing 8.33 kHz channel spacing, and exploring options to optimize DME use.

2.2 MIDANPIRG/20 tasked the FM WG, through Decision 20/35, to review and update the regional frequency allotment plan to expand available VHF COM spectrum. It was noted that these allotment tables form part of the ICAO Regional Air Navigation Plan and are published as a supplement to ICAO Doc 9718, Volume II. The CNS SG/15 meeting expressed appreciation for Iraq's comprehensive analysis of the MID Region allotment plan, covering channel allocations by service, comparisons with other ICAO Regions, sub-band utilization, and issues in current assignments. The meeting agreed to further study Iraq's proposal to reduce the AOC band to 130.9–132.025 MHz (46 channels), using the Frequency Finder Tool to assess channel availability across services in the MID Region, with results to be presented at FM WG/6.

2.3 ICAO has launched an initiative to clean up and enhance the quality of registered frequency assignments through its Data Quality Control process. This effort includes a comprehensive review of the ICAO database, crosschecking all entries against published AIP data, and preparing a dedicated Excel file for each State that reflects the updated and validated information. To ensure accuracy and completeness, ICAO plans to conduct one-to-one sessions with the concerned States in Q3-2026 to finalize the review and update of their respective files.

2.4 Several States have recently deployed additional DMEs in response to GNSS RFI concerns, which may contribute to increased DME spectrum congestion in the MID Region. The CNS SG/15 meeting was apprised of five potential approaches to increase DME channel availability, based on an optimization study conducted by Airbus and EUROCONTROL. Each approach requires further technical assessment and should be considered as a possible future measure to mitigate DME congestion.

2.5 Based on all the above, the CNS SG/15 meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 15/10: FREQUENCY CONGESTION

In order to reduce COM and NAV frequency congestion and enhance frequency availability in the MID Region, States are required to complete the following actions by the end of 2026:

a) complete the review and update of their frequency assignment data in the current ICAO database;

*b) provide their projected frequency requirements up to 2034 using the questionnaire provided in **Appendix A**, to enable ICAO conduct the necessary simulations and assess with States the need for implementing reduced channel spacing (8.33 kHz);and*

c) complete the review of the MID Region allotment plan for processing by ICAO and inclusion in the relevant ICAO documents.

Interference Detection and Resolution

2.6 The CNS SG/15 meeting reviewed the provisions and recommendations for enhancing interference detection and resolution through effective spectrum regulatory measures and enforcement. These provisions are reflected in the relevant ICAO Resolutions from the 42nd Session of the ICAO Assembly, the recommendations of the 14th Air Navigation Conference, and the actions arising from the 1st and 2nd ICAO Radio Navigation Symposiums. The ICAO/ITU/IMO Joint Declaration on the protection of GNSS from harmful interference, as well as WRC-23 Resolution 676, were also noted.

2.7 The meeting discussed means to enforce these provisions and recommendations, given the importance and criticality of the issue. It was agreed that ICAO would provide a survey listing the required actions along with their references and monitor implementation using the matrix in **Appendix B.** Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 15/11: MITIGATING INTERFERENCE THROUGH EFFECTIVE SPECTRUM REGULATORY MEASURES AND ENFORCEMENT

*That, in order to implement ICAO Resolutions and Recommendations related to the mitigation of interference through effective spectrum regulatory measures and enforcement, States are urged to implement the actions listed in **Appendix 5B** and provide feedback to the CNS SG/16 meeting, for monitoring and appropriate action.*

Preparation of WRC-27

2.8 The ITU World Radiocommunication Conference 2027 (WRC-27) does not include agenda items specifically dedicated to aviation safety frequency allocations; however, several items under consideration may still affect aeronautical safety services, including the spectrum used by the Radio Altimeter.

2.9 Radio/Radar Altimeters (RA) are essentially primary radars pointing towards the ground. They provide a direct measurement of the clearance height of the aircraft over terrain or obstacles. These Radars operate in the 4.2-4.4 GHz frequency band.

2.10 The CNS SG/15 meeting noted with concern that WRC-27 agenda item 1.7 studying the identification of additional spectrum for international mobile telecommunications (IMT) in one or more frequency bands, including a band which is immediately adjacent to the Radio Altimeter band.

2.11 Current WRC-27 preparatory studies raise several aviation safety and operational concerns. Ongoing studies do not fully address critical radio altimeter operational scenarios, particularly off-nominal landing conditions where RAs function as essential safety-net systems. This may result in an incomplete assessment of real-world interference risks. In addition, new RA SARPs are not expected before 2027, limiting their relevance to WRC-27 deliberations. The CNS SG/15 meeting raised concerns about the cross-border nature of aviation operations, noting that aircraft routinely operate across multiple jurisdictions during critical phases of flight and require RA systems to function reliably and consistently across regions.

2.9 The CNS SG/15 meeting stressed the need to actively advocate for the ICAO WRC-27's position and to engage with States and relevant International Organizations in order to ensure the protection of aviation safety. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT DECISION 15/12: COORDINATION AND ADVOCACY FOR THE PROTECTION OF THE RADIO ALTIMETER BAND IN WRC-27

That, in order to strengthen regional and international coordination in support of the ICAO position on radio altimeter spectrum protection, and to ensure effective engagement with relevant stakeholders during WRC-27:

a) ICAO MID Office to:

i. conduct Workshops and/or meetings in 2026/2027 with the Arab Spectrum Management Group (ASMG) in support of WRC-27 preparations, with particular emphasis on radio altimeter issue; and

ii. coordinate with States as well as other International and Regional Organizations, to strengthen collaboration and advocate for the protection of the radio altimeter band.

b) States' Civil Aviation Authorities to:

i. participate actively in the Regional WRC27 preparatory events;

ii. coordinate with their national radio regulator to support ICAO WRC-27 position; and

iii. send their representatives within the State's delegates to the WRC-27.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

3.2 note and support the CNS SG/15 outcomes concerning the frequency congestion, interference detection and ICAO WRC27 position; and

3.3 endorse the Draft Conclusions and Decision

APPENDIX A

SUBMISSION OF FREQUENCY REQUIREMENTS FOR THE PERIOD 2026 – 2034

1.1 The primary purpose of this simulation is to determine if a congestion in the use of frequencies can be foreseen that would require the implementation of 8.33 kHz channel spacing in any parts of the MID Region.

1.2 With the view to determine the medium-term spectrum requirements for VHF communication services, States are invited to submit these requirements to the MID Regional Office by **Q4 2026**. On the basis of these requirements. ICAO will undertake an analysis that is aimed at determining whether these requirements can be assigned a frequency within the available 25 kHz channels.

1.3 In this case, States can introduce the requirements in the local version of Frequency Finder and generate with the button "Export Submissions" an Excel file that can be submitted to the Reginal Office.

1.4 States are able to download the Frequency Finder tool from Frequency Spectrum Management Panel (FSMP) webpage at: https://www.icao.int/safety/FSMP/Pages/Documents.aspx, and ICAO will provide assistance for any difficulties in installation and use of this ICAO tool.

1.5 Precise details not available.

1.5.1 When precise details are not available for future frequency requirements, States can submit such requirements in any format.

1.5.2 Example 1: For a new airport, States can submit the (approximate) coordinates and specify the need for:

x TWR frequencies
x Aerodrome surface frequencies
x APP-U frequencies
x APP-L frequencies
x ACC-U frequencies
ATTM.- 2
x ACC-L frequencies
x VOLMET frequencies
x ATIS frequencies
x VDL frequencies

Effective Spectrum Regulatory Measures and Enforcement to Mitigate the Interference

No.	Action	Reference	Status (Completed/Ongoing/ not yet started)	Completion date	Remarks
1.	**Enhance collaboration with national radio regulator** Existence of a coordination mechanism for detecting, geo-locating, and mitigating interference sources.	ICAO/ITU/IMU Joint déclaration, action (d)			
2.	**Collaborate with the Radio Regulator to strengthen enforcement measures addressing the commercialization, purchase, possession, and use of illegal transmitters, including jammers and signal spoofers.** Actions may include, inter alia: *Establish and enforce the necessary legal and regulatory frameworks to prevent, detect and regulate the sale of such devices, both online and offline, and effectively confiscate them*	A42-8/C Resolution ICAO Electronic Bulletin 25/20			

3.	**Ensure proper resolution for incidents of GNSS RFI with cross-border impact that cannot be solved nationally or internationally through routine procedures** Existence of procedure to utilize the ITU Radio Regulations (RR) escalation procedure (RR Article 15) to report of interference incidents that could be resolved through routine procedure; Established procedure exists for reporting harmful interference and for the subsequent escalation to relevant authorities through ICAO Regional Office and ITU SIRRS	ICAO/ITU/IMU Joint déclaration, action (e) ITU Resolution 676 ICAO Electronic Bulletin 25/20			
4.	***enhance the capacity of technical staff to effectively detect, identify, investigate, and report harmful interference***	FM WG/ Report			
5.	**improve coordination with the military by facilitating the sharing of information on GNSS RFI testing and any relevant activities such as Counter-UAS operations**	ICAO Electronic Bulletin 25/20			

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