



*International Civil Aviation Organization*

## **Frequency Management Ad-Hoc WG/2**

*(Virtual Meeting 7 June 2021 from 08:00 to 10:00 UTC)*

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### **1. INTRODUCTION**

1.1 Second meeting of the Frequency Management Working Group (FM WG/2) Virtual Meeting was held on Monday 7 June 2021, using MS Team facility.

1.2 The meeting was attended by a total of 54 Participants from 11 States (Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Oman, Qatar, S. Arabia, UAE and Yemen) and 1 Organization (GCC). The list of participants is at **Attachment A**.

### **2. AGENDA**

2.1 The meeting adopted the following Agenda:

- **Agenda Item 1:** Adoption of the Provisional Agenda
- **Agenda Item 2:** Follow-up on MIDANPIRG/18 Conclusions and Decisions relevant to the Frequency Management
- **Agenda Item 3:** Spectrum capacity assessment for the frequency band 108 – 117.975 MHz
  - Reducing Channel Spacing for ILS/VOR
  - Review frequency Assignments in the MID Region
- **Agenda Item 4:** Future Work Programme
- **Agenda Item 5:** Any other Business
  - Radio Altimeter Interference (presented by Saudi Arabia)

### **3. OPENING**

3.1 Mrs. Muna Alnadaf (RO/CNS), welcomed all participants and thanked them for accepting the invitation to join the meeting.

3.2 The RO/CNS delivered one PPT covering the topics of the Agenda.

### **4. DISCUSSION**

#### **AI 1: Adoption of the Provisional Agenda**

4.1 The meeting reviewed and adopted the Agenda as at Para. 2 of this report.

## **AI2: Follow-up on MIDANPIRG/18 Conclusions and Decisions relevant to the Frequency Management**

4.2 The meeting noted the status of the MIDANPIRG/18 Conclusions and Decisions relevant to Frequency Management and the follow-up actions taken.

### **AI 3: Spectrum capacity assessment for the frequency band 108 – 117.975 MHz**

#### *Reducing Channel Spacing for ILS/VOR*

4.3 The meeting recalled the result and conclusions of the study performed to assess spectrum Availability for VHF NAV systems (ILS/DME and VOR/DME) operating in the frequency band 108 – 117.975 MHz. The meeting noted that the Study concluded that currently in the MID Region in the area around the UAE as well as in the northern part of the MID Region the frequency band is heavily congested or saturated for ILS/DME and VOR/DME frequency assignments.

4.4 The meeting discussed the problem of frequency saturation in detail and agreed that States should update the NAV module with operating facilities in the MID Region;

4.5 The frequency congestion necessitates reducing the channel spacing of the VOR/ILS from 100KHz to 50 KHz/Y DME channel. Therefore, the secretary proposed implementing reduced channel spacing (50 KHz) for VOR/ILS to increase the frequencies availability, and highlighted that the Aircraft equipment must be configured to receive full navigation services.

4.6 The Secretary provided justifications on the reduced channel spacing implementation feasibility in the MID Region:

- *The Annex 10 Volume I published in 1972 indicated possible 50 kHz channel spacing;*
- *The relevant provisions have been exist long enough, so most probably aircraft if produced in 1990s should have such capabilities.*
- *The reduced space channels has been implemented in several ICAO Regions since long time ( over 30 years).*
- *Some MID States already implemented the reduced channel spacing without prior coordination with ICAO.*

4.7 The meeting requested more time (3 weeks) to assess the requirements and impact of the reduced channel spacing and to inform IATA about the proposed amendment. The Secretary coordinated with IATA IATA in this regard, IATA MENA stated that they did not expect any issue with operator's compliance.

4.8 A follow-up call was conducted (21 June 2021) and the meeting stressed the need for maximum economy in frequency demands and in radio spectrum utilization and agreed that the geographical separation criteria based on assignments of 50 kHz-spaced frequencies to ILS localizer and VOR, X and Y channels to DME be implemented in the MID Region. Accordingly, the meeting agreed to the following Draft Conclusion:

#### ***DRAFT CONCLUSION 2/1: REDUCED CHANNEL SPACING FOR VHF NAV***

*That, the ICAO MID Office, process a proposal for amendment to the MID ANP Volume II, CNS Specific Requirements to implement reduced channel spacing for Radio Navigation Aids*

4.9 The meeting recalled that MIDANPIRG/18 meeting, through Conclusion 18/46, tasked the Frequency Management Working Group with the development of a rolling frequency assignment plan, in order to secure adequate spectrum for VHF-COM, ILS, VOR, DME and GBAS/VDB facilities and meet the operational requirements up to 2030, the Frequency Management Ad-hoc Working Group (FM WG) in coordination with concerned parties. The meeting agreed to postpone this action and to conduct another study to assess the frequency congestion after implementation of the reduced channel spacing for VHF navigation facilities.

*Review frequency Assignments in the MID Region*

4.10 The meeting recalled that FM WG/1 meeting agreed to update the NAV module with operating facilities in the MID Region; the meeting noted the following in the NAV database:

a) incorrect coordinates

Some data in NAV module in MID have incorrect coordinates. those wrong data would influence the accuracy of frequency assignment, and in some cases, appropriate frequencies cannot be found due to those wrong data.

b) Designated Operational Coverage (DOC)

Some data includes designated operational coverage more than operationally required.

4.11 The meeting urged States to continue updating the ICAO Global database and agreed that this action should be ideally conducted and completed during ACAO/ICAO Frequency Management Workshop.

**AI 4: Future Work Programme**

4.11 The meeting noted that ACAO/ICAO Frequency Management Workshop is planned to be conducted in October back to back with the FM WG/3.

**AI 5: Any Other Business**

4.12 Saudi Arabia addressed the issue of Protecting Radio Altimeter Operations Electro magnetic Compatibility (EMC) Aspects related to G5. The meeting was apprised of latest information on the deployment of 5G services and related safety concern that was subject of ICAO State Letter which invited States to consider as a priority, public and aviation safety when deciding how to enable cellular broadband/5G services in radio frequency bands near the bands used by radio altimeters.

4.13 The meeting noted that The band 4 200-4 400 MHz (4.2-4.4 GHz) is currently allocated to the aeronautical radionavigation service (ARNS) and is reserved exclusively for radio altimeters installed onboard aircraft and for the associated transponders on the ground by Radio Regulations footnote No. 5.438.

4.14 The meeting recalled that Radio altimeters provide an essential informational component of the automatic flight control system for approach and landing, ground proximity warning system, terrain awareness and warning system, flight management guidance computer, flight control systems, electronic centralized aircraft monitoring.

4.15 The meeting noted the information in ICAO SL dated 25 March 2021 and discussed the potential impact of the 5G on Radio Altimeter in the MID Region. Furthermore, the meeting was apprised of actions taken by Saudi Arabia and UAE to mitigate the potential impact of 5G on the Radio Altimeter.

4.16 The meeting agreed on a need to collect and share information on the best practices implemented by States and Regional Organizations to mitigate 5G potential interference that may impact the radio altimeters and develop MID guidance material. Accordingly, the meeting agreed to amend the ToRs of Frequency Management Ad-hoc working group with 2 new actions as at **Appendix A**. Accordingly, the meeting agreed to the following Draft Decision:

***DRAFT DECISION 2/2: TERMS OF REFERENCE OF THE FREQUENCY MANAGEMENT AD-HOC WORKING GROUP***

*That, the Terms of Reference of the Frequency Management WG be updated as at Appendix A*

4.17 The meeting agreed to establish Action Group to develop Guidance Materials to protect the aircraft operations from 5G potential interference associated with the deployment of ground infrastructure to enable cellular broadband/5G services in radio frequency bands near the bands used by radio altimeters (RADALT). Accordingly, the meeting agreed to the following Draft Decision:

***DRAFT DECISION 2/3: PROTECTING RADALT GUIDANCE ACTION GROUP***

That, the Protecting RADALT Guidance Ad-hoc Action Group be:

- a) established to develop guidance material to protect the aircraft operations from potential Radio Altimeter interference associated with the deployment of cellular broadband/5G ground infrastructure near the bands used by RADALT; and
- b) Composed of:

Mr. Ridha Dridi, (Saudi Arabia, Rapporteur);  
Khaled Alhazmi (Saudi Arabia);  
Fares A. Alzahrani (Saudi Arabia);  
Abdullaziz Hussain (Saudi Arabia);  
Mohammed Kamal (Egypt);  
Nevin Askar (Jordan);  
Talal Al Jasmi (UAE); and  
ICAO MID

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## Frequency Management Working Group (FMWG)

### 1. TERMS OF REFERENCE (TOR)

The FMWG will undertake the following tasks in the work required to manage the MID Region frequency assignments in order to ensure sufficient access to the resource for the provision of aeronautical communication, navigation and surveillance services (CNS) in an efficient and safe manner:

- a) develop MID Region frequency assignment plan including long term spectrum usage of radio systems;
- b) validate the ICAO Global database and keep it up to date;
- c) resolve current frequency assignments conflict in the ICAO Global database;
- d) develop recommendation or proposal for improvement to the existing regional VHF frequency assignment process based on the ICAO Global Spectrum Management tool, ICAO 9718 Volume II Handbook provision and current coordination issues;
- e) propose solutions for the interference incidents occurred in MID Region states in a timely manner;
- f) escalate the intentional frequency interference matters and coordinate with other relevant international organizations, as and when required;
- g) provide guidance/support to States to protect the GNSS signals;
- h) collaborate with ITU and other relevant international organization to address frequent interference incidents;
- i) support for ICAO Position at World Radio Communication Conference (WRC) and ensure MID States' support ICAO at ITU meetings;
- j) collaborate with Regional Groups; Arab Spectrum Management Group (ASMG) African Telecommunication Union (ATU), and Asia/Pacific Telecommunication Group (APT) to support ICAO position at WRC;
- k) ensure the continuous and coherent development of the relevant sections of the MID eANP, taking into account the evolving operational requirements in the MID Region and the need for harmonization with the adjacent regions in compliance with the Global Air Navigation Plan;
- l) develops recommendations for CNS SG about how to address the future operational needs and limitations in VHF voice communications, aiming at avoiding introduction of 8.33 kHz spacing in the MID Region for as long as practicable; and
- m) Frequency Management Working Group will be responsible for overall supervision of the frequency issues in the MID Region and will review/update the FMWG work plan whenever required.
- n) Collect and share information on the best practices implemented by States and Regional Organizations to mitigate potential radio altimeters (RADALT) interference that caused by 5G operation.

Develop guidance material to protect aircraft operations from potential Radio Altimeter interference associated with the deployment of 5G ground infrastructure

### 2. COMPOSITION

- a) ICAO MID Regional Office;
- b) MIDANPIRG CNS Sub Group Chairpersons;
- c) Members appointed by the MIDANPIRG member States; and
- d) other representatives, who could contribute to the activity of the Working Group, could be invited to participate as observers.

**Frequency Management WG/2**  
**(Virtual Meeting 7 June 2021 from 08:00 to 10:00 UTC)**

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