International Civil Aviation Organization
Frequency Management Working Group Fifth Meeting (FM WG/5)

(Doha, Qatar, 10 – 11 May 2026)

Agenda Item 2: Frequency Congestion in the MID Region

ICAO VHF DATABASE QUALITY CONTROL AND REGIONAL AND INTER-REGIONAL COORDINATION MECHANISM

(Presented by Secretary)

SUMMARY

This paper presents a draft regional and inter-regional coordination procedure for frequency identification and the draft coordination mechanism for space-based VHF frequencies. The final version of the coordination mechanism is expected to be implemented in the future Frequency Finder Tool.

REFERENCES

- Invitation letter Ref: ME 3/2.2 & AN 7/38 dated 18 March 2026.
- MIDANPIRG Procedural Handbook, Edition February 2022 (MID Doc 001).

1. INTRODUCTION

1.1 The existing ICAO frequency assignment planning tool, Frequency Finder, was designed and developed by CNS technical experts. As the software and its associated database have grown in scope over time, and due to the number of "patchwork" updates, the tool has become increasingly difficult to maintain.

1.2 With the advent of new CNS technologies, such as space-based VHF, establishing frequency planning criteria and procedures is becoming increasingly complex. Efficiently managing those and integrating them into frequency bands that are already quite congested is becoming a challenge. To overcome this challenge, the frequency finder tool needs to be redesigned and upgraded.

1.3 With this in mind, ICAO has currently started a project to modernize the Frequency Finder Tool. The project consists of the following four phases to modernize the Frequency Finder Tool.

- PHASE 1 VHF COMMUNICATION SYSTEMS MODULE
- PHASE 2 NAVIGATION SYSTEMS MODULE
- PHASE 3 SURVEILLANCE MODULE and
- PHASE 4 IMPROVEMENTS OF FREQUENCY FINDER

1.4 The Phase 4 of the project will include several updates to those three modules, and one of the improvements is to include Space-Based VHF. The SB VHF planning criteria will be developed and included in Volume II of the Handbook on Radio Frequency Spectrum, Doc. 9718.

1.5 This planning criterion needs to be implemented in the Frequency Finder Tool in future to assist Regional Officers and States not only for identifying the candidate frequencies, but also for conducting regional and inter-regional coordination to make an appropriate determination of the selected frequency used for operation without causing or receiving any harmful interference.

2. DISCUSSION

2.1 The flow charts at **Appendix A** depicts the regional and inter-regional coordination mechanisms. The final versions of those flow charts are expected to be implemented in the new (modernized) Frequency Finder tool.

2.2 Although the current general explanations of the coordination procedures (see Section 2.6.7 of Volume II of the Handbook) are not fundamentally incorrect, in practice they have proven difficult for the relevant ROs to implement. In addition, given the importance of "inter-regional coordination" prior to the operation of space-based VHF, it has been considered beneficial to include additional information, based on the flow charts, to further refine the coordination procedures described in the Handbook.

2.3 It should also be noted the procedures to be included in the Handbook may need to be complemented by region-specific procedures, as a single global procedure cannot fully account for all regional differences.

In addition, before moving to the new Frequency Finder Tool, all States are requested to validate the data in the Frequency Finder, several validation activities, aiming to create a more accurate database and to identify correct frequencies for candidate frequencies using the new Frequency Finder Tool. Further details on the database quality control is at **Appendix B**.

3. ACTION BY THE MEETING:

3.1 The meeting is invited to:

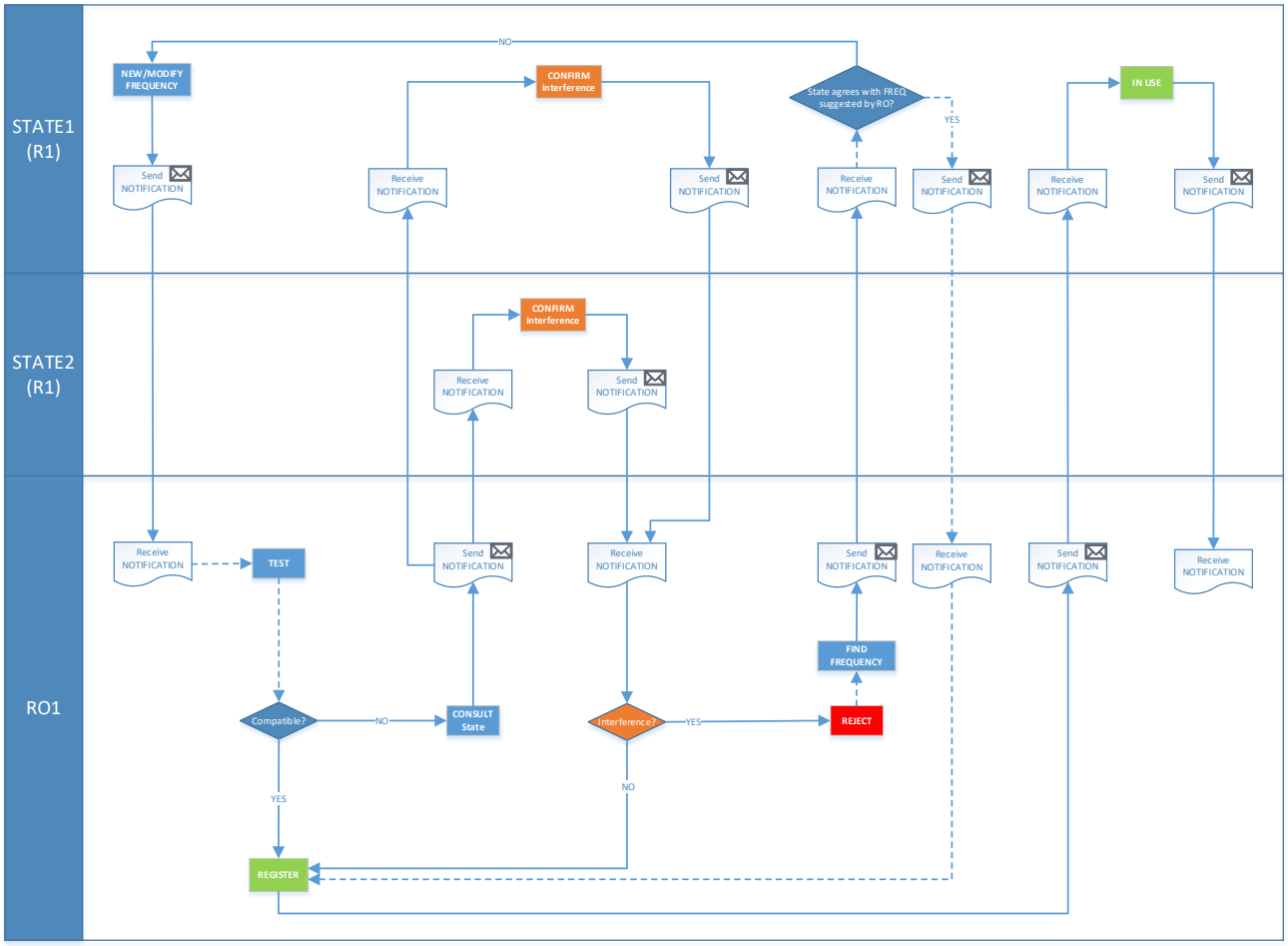
a) Note and review the contents of this working paper.

b) Discuss a way forward from the regional perspective.

c) Provide the link to the electronic AIP or the documents Part 2 ENR and Part 3 AD; and

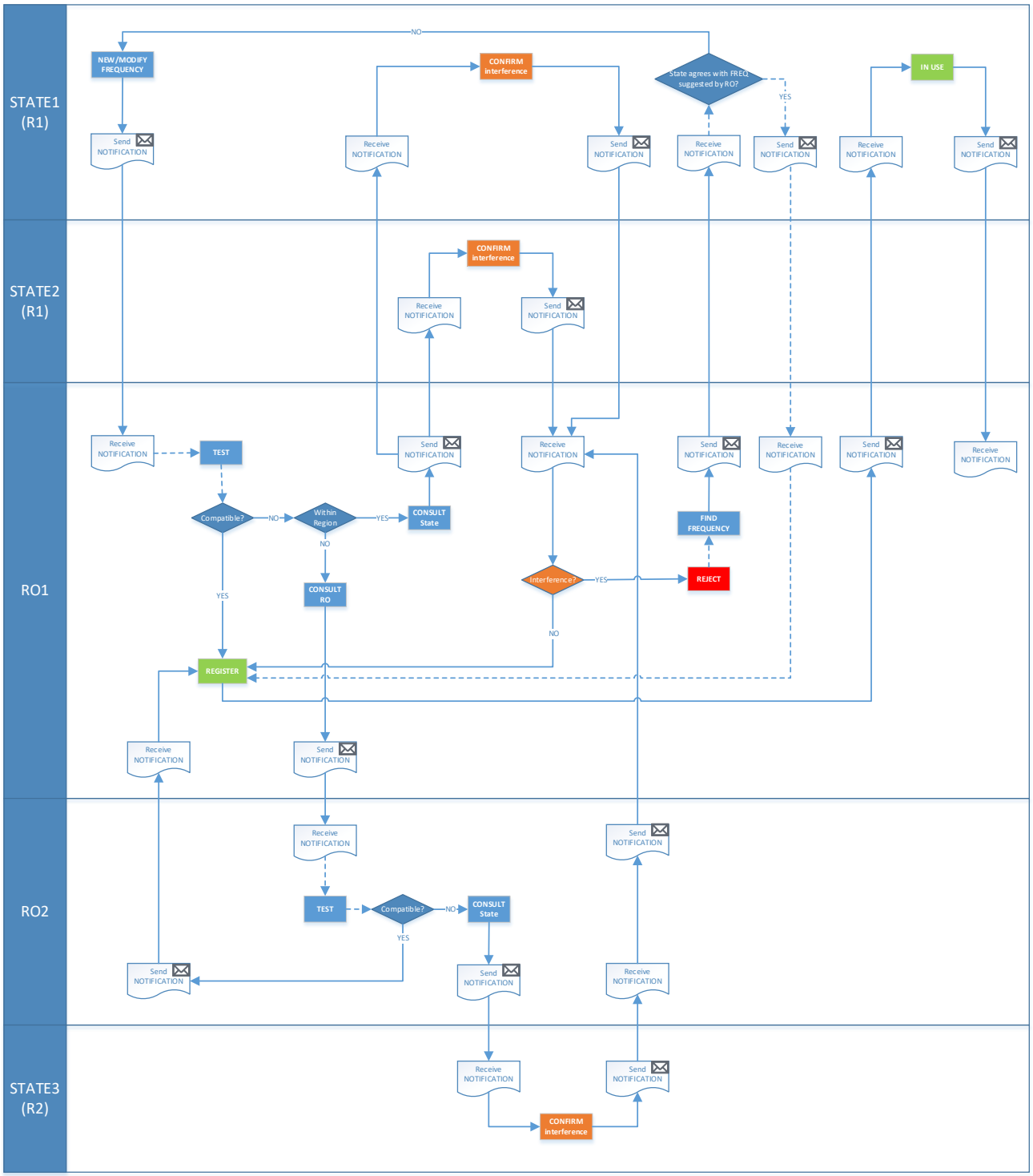
d) Review, confirm, or correct the registered VHF data as described in **Appendix B** to this paper.

Regional coordination mechanism flow chart (minor updates have been incorporated)



FM WG/5-WP/02
APPENDIX A

Inter-Regional coordination mechanism flow chart (minor updates have been incorporated)



Draft Regional and Inter-regional coordination procedure

(Texts related to coordination are extracted from Volume II Handbook)

Editor's note: No change is proposed to the Foreword. The general explanation below will be applicable even after the introduction of space-based VHF.

FOREWORD

Implementation of frequency assignment planning criteria

The material contained in this volume is general in nature and should be applicable in all ICAO Regions. However, implementation in the Regions has to take place through relevant decisions by the Regional Planning and Implementation Groups (PIRGs), which are responsible for amending and updating provisions of the Regional Air Navigation Plans.

Specific regional requirements on the use of radio frequencies have been accommodated as much as practicable. Future specific regional requirements can be implemented through relevant regional air navigation agreements and/or incorporated in future revisions to this Handbook.

It should be noted that the coordination of frequency assignments as well as the development of the regional frequency assignment plans fall within the remit of the ICAO Regional Offices and that these Offices should be consulted when amendments to these plans are being considered by ICAO Contracting States.

Note.— In some Regions, for administrative and practical purposes, different coordination mechanisms may be implemented.

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Editor's note: Propose an addition of new 2.6.7.2 and a slight modification to the original 2.6.7.2.

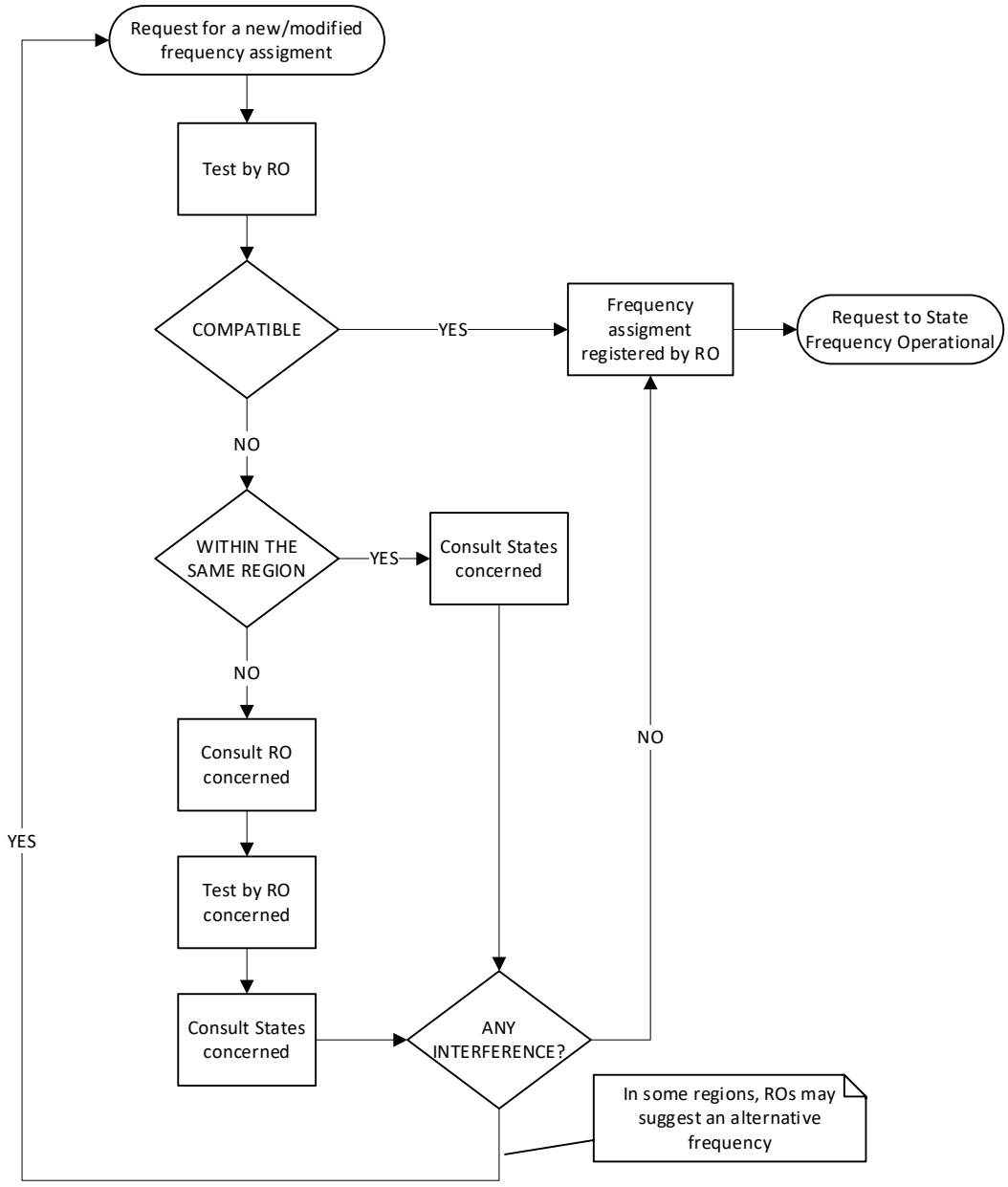
2.6.7 Coordination of frequency assignments

2.6.7.1 Frequency coordination must take place with all States that may be affected by a proposal for a new frequency assignment or where the characteristics of an existing assignment are modified. Normally, such coordination is effected through the ICAO Regional Offices which have a central and coordinating role in frequency assignment planning.

2.6.7.2 For specific services such as space-based VHF, prior to the regional agreement on the frequency assignment, interregional coordination is required, through ICAO Regional Offices, to ensure that aeronautical radio communication and navigation systems in those regions concerned are protected from harmful interference.

2.6.7.3~~2~~ At the interregional level, bilateral or multilateral coordination procedures should be agreed among~~between~~ the ICAO Regional Offices involved, while documenting, inter alia, actions with timelines and information required for coordination. Typical information required for such interregional coordination includes operational frequencies, type of operation, the geographical coordinates of the location, the designated operational coverage area, satellite footprint in case of space-based VHF and the date of planned implementation.

Figure X-X. Regional and interregional coordination procedures



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INTERNATIONAL CIVIL AVIATION ORGANIZATION

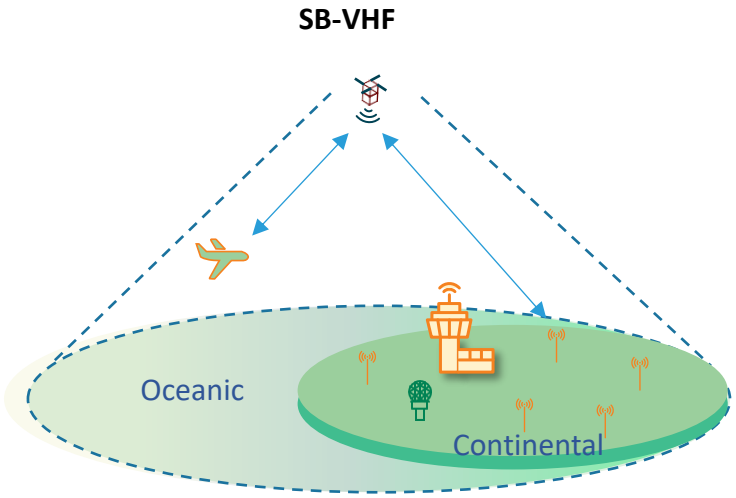
A UN SPECIALIZED AGENCY

VHF COM FREQUENCY DATA BASE QUALITY CONTROL

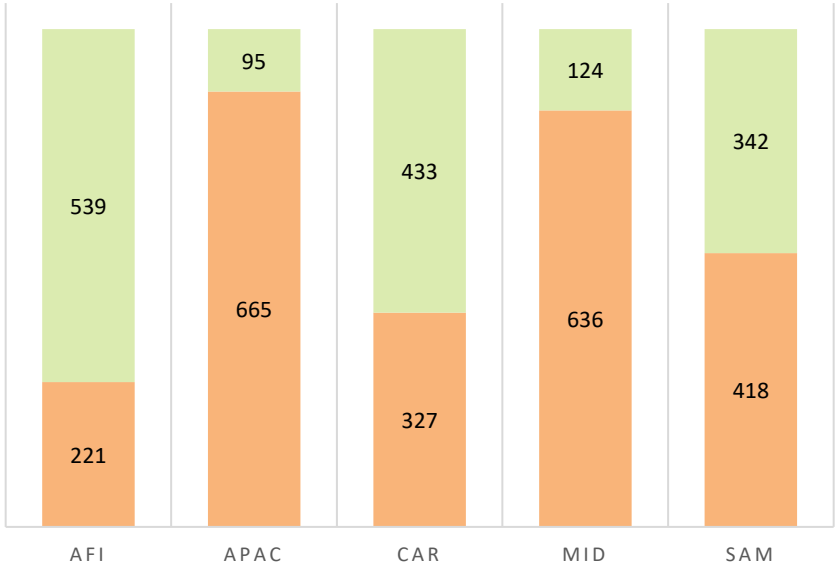
February 2026

SPACE BASED VHF VOICE COMMUNICATIONS

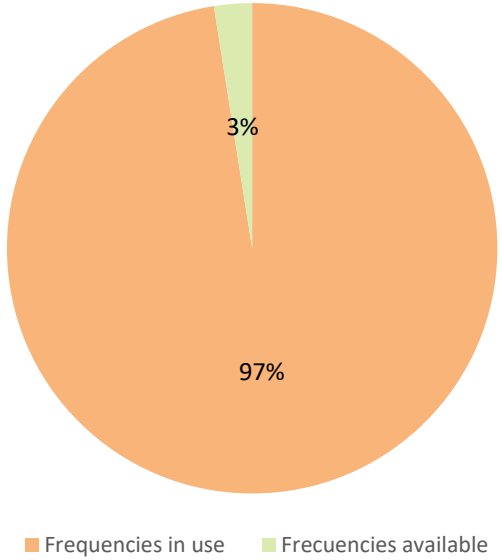
- OCEANIC and REMOTE areas have limited VHF infrastructure.
- SB-VHF will provide GLOBAL COVERAGE of A/G VHF VOICE COMMUNICATIONS SERVICES
- SB-VHF has a larger footprint than terrestrial voice communications



GLOBAL USE OF VHF COM CHANNELS (except Europe and North America)



VHF COM Channels in use vs available



Only 19 VHF COM 25kHz channels are **not** in use worldwide, mainly within the sub-band 134.000 – 136.975 MHz

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SPACE BASED VHF VOICE COMMUNICATIONS

To ensure that SB-VHF and terrestrial VHF are **compatible** and that the SB-VHF does not cause **interference** to the terrestrial VHF services:

- Accurate and consistent frequency data base is needed
- Inter-regional coordination will be implemented in Frequency Finder

FREQUENCY FINDER 2

- Phase 1: VHF COMMUNICATION SYSTEMS MODULE  **launched**
  - Web-based application
  - Online database. No need to synchronize
  - Management and coordination of frequency assignments between ICAO Contracting States and ICAO Regional Offices.

FREQUENCY FINDER 2

- Phase 2: NAVIGATION SYSTEMS MODULE
- Phase 3: SURVIELLANCE MODULE
- Phase 4: IMPROVEMENTS OF FREQUENCY FINDER : SPACE-BASED VHF

DATABASE QUALITY CONTROL

One Excel file will be provided to each state:

- First sheet containing the combined data from the AIP and the VHF COM3 frequency list in Frequency Finder
- Second sheet called “FF” containing the current data from the VHF COM3 frequency list in Frequency Finder. Only for reference.

DATABASE QUALITY CONTROL

ICAO Regional Office	Country	Country code	FF key	Location Airport name	Airport ICAO code	Latitude	Longitude	Frequency	Service	Range	Height	ER group	Category	ICAO HQ
RRR	Ccccc	CCC	000000	Airport 1	AAAA	ddmmss.sN	dddmmss.sW	125.900	APP-I	75	25000		ICAO	
RRR	Ccccc	CCC		Airport 1	AAAA	ddmmss.sN	dddmmss.sW	118.100	AFIS					
			000000	Airport 2	BBBB	ddmmss.sN	dddmmss.sW	131.400	AOC	100	250		NAT	
			000000	Airport 3		ddmmss.sN	dddmmss.sW	118.325	TWR	25	4000		NAT	
			000000	Location 1		ddmmss.sN	dddmmss.sW	126.200	ACC-U	25	4000		ICAO	

- Text in black comes from the AIP
- Text in red comes from VHF COM3 frequency list in Frequency Finder and needs to be checked.
- Frequencies highlighted in green are included in both AIP and VHF COM3 frequency list in Frequency Finder
- Specific details are included in the column “ICAO HQ”

ICAO

DATABASE QUALITY CONTROL

ICAO Regional Office	Country	Country code	FF key	Location Airport name	Airport ICAO code	Latitude	Longitude	Frequency	Service	Range	Height	ER group	Category
RRR	Ccccc	CCC	000000	Airport 1	AAAA	ddmmss.sN	dddmmss.sW	125.900	APP-I	75	25000		ICAO
RRR	Ccccc	CCC		Airport 1	AAAA	ddmmss.sN	dddmmss.sW	118.100	AFIS				
			000000	Airport 2	BBBB	ddmmss.sN	dddmmss.sW	131.400	AOC	100	250		NAT
			000000	Airport 3		ddmmss.sN	dddmmss.sW	118.325	TWR	25	4000		NAT
			000000	Location 1		ddmmss.sN	dddmmss.sW	126.200	ACC-U	25	4000		ICAO

- Frequency included in both the AIP and the VHF COM3 frequency list in Frequency Finder
- Data has been combined
- States are requested to confirm all the information or modify accordingly

DATABASE QUALITY CONTROL

ICAO Regional Office	Country	Country code	FF key	Location Airport name	Airport ICAO code	Latitude	Longitude	Frequency	Service	Range	Height	ER group	Category
RRR	Ccccc	CCC	000000	Airport 1	AAAA	ddmmss.sN	dddmmss.sW	125.900	APP-I	75	25000		ICAO
RRR	Ccccc	CCC		Airport 1	AAAA	ddmmss.sN	dddmmss.sW	118.100	AFIS				
			000000	Airport 2	BBBB	ddmmss.sN	dddmmss.sW	131.400	AOC	100	250		NAT
			000000	Airport 3		ddmmss.sN	dddmmss.sW	118.325	TWR	25	4000		NAT
			000000	Location 1		ddmmss.sN	dddmmss.sW	126.200	ACC-U	25	4000		ICAO

- Frequency included in the AIP but not in the VHF COM3 frequency list in Frequency Finder
- States are requested to confirm whether the frequency is in use and complete the missing information (Range, Height, ER Group and Category)

DATABASE QUALITY CONTROL

ICAO Regional Office	Country	Country code	FF key	Location Airport name	Airport ICAO code	Latitude	Longitude	Frequency	Service	Range	Height	ER group	Category
RRR	Ccccc	CCC	000000	Airport 1	AAAA	ddmmss.sN	dddmmss.sW	125.900	APP-I	75	25000		ICAO
RRR	Ccccc	CCC		Airport 1	AAAA	ddmmss.sN	dddmmss.sW	118.100	AFIS				
			000000	Airport 2	BBBB	ddmmss.sN	dddmmss.sW	131.400	AOC	100	250		NAT
			000000	Airport 3		ddmmss.sN	dddmmss.sW	118.325	TWR	25	4000		NAT
			000000	Location 1		ddmmss.sN	dddmmss.sW	126.200	ACC-U	25	4000		ICAO

- Frequency included in the VHF COM3 frequency list in Frequency Finder but not in the AIP
- States are requested to confirm whether the frequency is in use
- States are requested to confirm all the information or modify accordingly

DATABASE QUALITY CONTROL

ICAO Regional Office	Country	Country code	FF key	Location Airport name	Airport ICAO code	Latitude	Longitude	Frequency	Service	Range	Height	ER group	Category	States
RRR	Ccccc	CCC	000000	Airport 1	AAAA	ddmmss.sN	dddmmss.sW	125.900	APP-I	75	25000		ICAO	in use
RRR	Ccccc	CCC		Airport 1	AAAA	ddmmss.sN	dddmmss.sW	118.100	AFIS	25	4000		ICAO	in use
			000000	Airport 2	BBBB	ddmmss.sN	dddmmss.sW	131.400	AOC	100	250		NAT	in use
			000000	Airport 4		ddmmss.sN	dddmmss.sW	118.325	TWR	25	4000		NAT	in use
			000000	Location 1		ddmmss.sN	dddmmss.sW	126.200	ACC-U	25	4000		ICAO	out of use

How to amend the Excel sheet:

- Use text in green for the new or modified data
- Do not delete any row, even if the frequency is not in use
- Any additional comments should be included in the column “States”

DATABASE QUALITY CONTROL

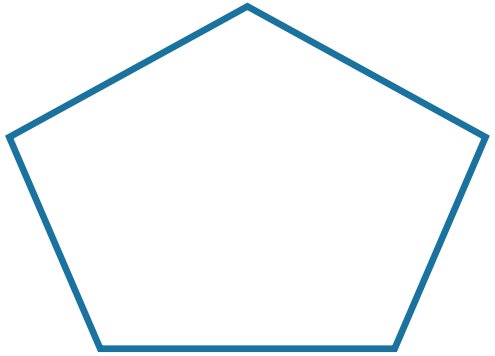
STATES ARE REQUESTED TO:

- Review the information contained in the Excel file (Sheet1).
- Confirm or correct the listed frequencies.
- Add any additional frequency.
- Complete the missing fields (ICAO code, Service, Range, Height, ER group and Category).
- Category:
  - Frequencies for civil airports are generally International (ICAO), unless used for non-aviation purposes (for example, fire service).
  - the NAT category is related to military, defence or government use and not to domestic airports.
- Include in the column “States”:
  - if the frequency is **in use** or **out of use**
  - if the frequency data is **sensitive** or **not-sensitive,** when the Category is NAT

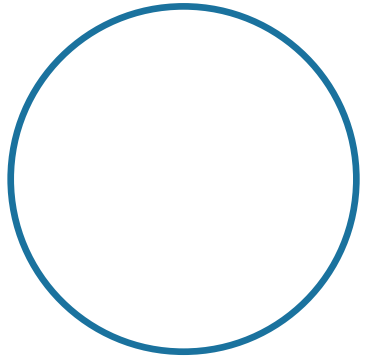
DATABASE QUALITY CONTROL

STATES ARE REQUESTED TO:

- In case more than one service is assigned to a frequency , only the service with the larger DOC should be considered (for example, TWR/APP)
- For frequencies with ACC/APP services, States are encouraged to use an Area DOC rather than a circular DOC and provide the SECTOR name and coordinates that define the polygon



Area DOC
(name & coordinates)



Circular DOC
Range & Height

DATABASE QUALITY CONTROL

To be considered for the new Frequency Finder tool Database :

- Use of airport names and coordinates published in the AIP
- Service names according Doc 9718 (chapter 2.6). Note that current names may be modified (for example, SMC -> AS)
- Range and Height default values according Doc 9718 (chapter 2.6).
- Frequencies out of use will be deleted
- Once the quality control process is complete, the new database will be used for the Frequency Finder 2. No need to update the data in the current Frequency Finder

ACTIONS

STATES are requested to

- Provide the link to the electronic AIP or the documents Part 2 ENR and Part 3 AD
- Check the Excel file
- Confirm which frequencies are in use and add the missing frequencies and information

States are requested to:

•Verify the information contained in this file.
•Confirm or correct the listed frequencies; Please use text in green for the new or modified data.
•Complete the missing fields (range, height, ER group and category). Note that the NAT category is related to military, defence or government use and not to domestic airports.
•Add any additional frequency.
•Add comments in the column “States” if necessary.
•Please, do not delete any data from the Excel file
•Include in the column “States”:

- if the frequency is in use or out of use
- when the Category is NAT, if the frequency data is sensitive or not-sensitive

The new Frequency Finder tool that under development will include the functionality to define polygons for frequencies with ACC/APP services, where DOC (designated operational coverage) is an area.

If you intend to use an area or sector for a frequency, you will need to provide the name and coordinates defining the polygon, so that we can include it in the new database. It would be very helpful if you could share the names and coordinates of the sectors that are covered by the ACC/APP frequencies.

Thank You!

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