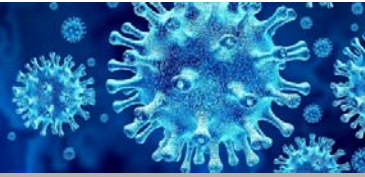




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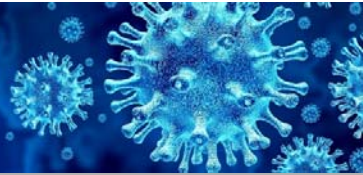
# First meeting of the Frequency Management Working group (FM WG/1)

Virtual meeting



28-29/7/2020

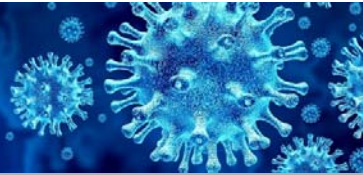
Day 2 presentation



## Meeting Agenda



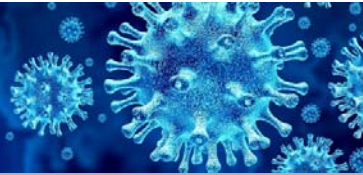
- 1** Adoption of provisional agenda
- 2** Follow-up on MIDANPIRG/17 & MSG/6 conclusions relevant to FM
- 3** Update on frequency finder tool
- 4** Spectrum capacity assessment for the band 108-117.975 MHz
- 5** Future work programme
- 6** any other business



## Meeting Agenda



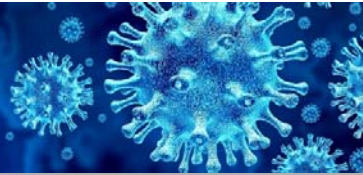
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## **Spectrum capacity assessment for the frequency band 108 – 117.975 MHz**

An assessment of available spectrum for VHF NAV systems (ILS/DME and VOR/DME) operating in the frequency band 108 – 117.975 MHz was performed with the view to:

- Determine the need for a full implementation of 50 kHz channel spacing
- Identify areas where future implementation of ILS or VOF systems may be difficult.



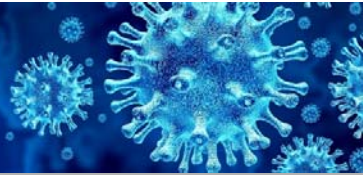
## Spectrum capacity assessment for the frequency band 108 – 117.975 MHz

### Organization of the simulation

For this purpose, a set of (fictious) requirements for new ILS/DME and VOR/DME facilities was generated as follows:

- For each airport for which one (or more) ILS facilities are in the ICAO COM list 2 a requirement for an additional ILS/DME facility was established
- For each airport for which one (or more) ILS facilities are in the ICAO COM list 2 the requirement for an additional VOR/DME facility was established

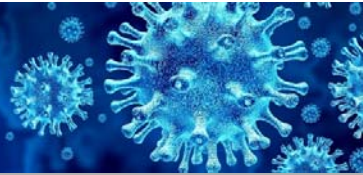
The result was for 98 airports in the MID Region the addition of a single ILS/DME facility at each airport as well as the addition of a single VOR/DME facility at each airport.



## Spectrum capacity assessment for the frequency band 108 – 117.975 MHz

### Organization of the simulation

- A check was performed to find for each facility in the simulation a frequency assignment for equipment designed for 100 kHz channel spacing and for 50 kHz channel spacing (mixed environment). Any ILS or VOR facility that could not be assigned a frequency on a 100 kHz channels was considered in the simulation for a frequency assignment on a 50 kHz channel.
- A separate simulation is planned performed with using only 50 kHz channel spacing characteristics for the Localizer and the VOR.

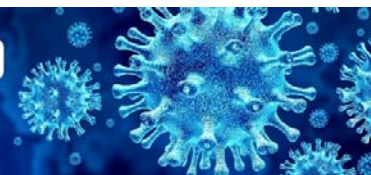


## Spectrum capacity assessment for the frequency band 108 – 117.975 MHz

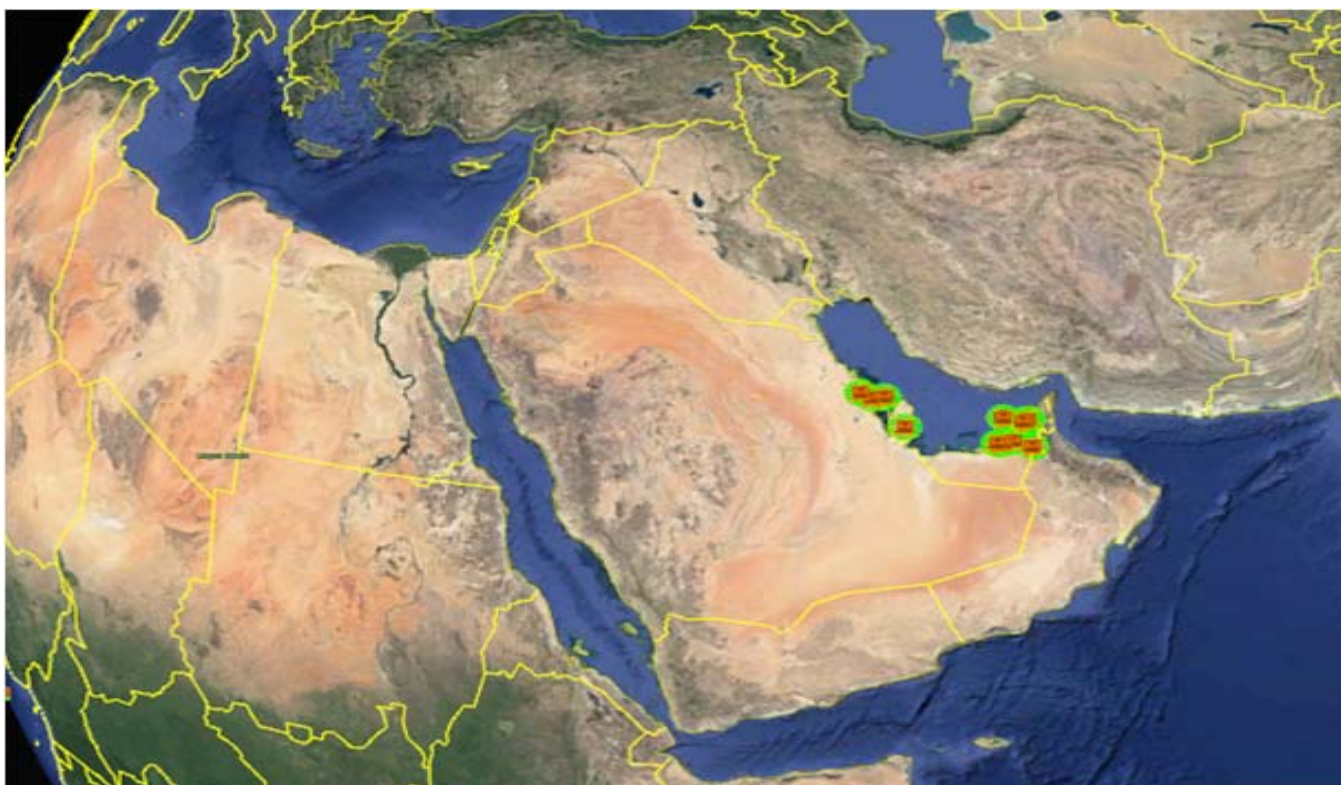
### Result

- In the MID Region, 98 requirements for an ILS/DME frequency were established and 477 requirements for a VOR/DME and 98 requirements for an ILS/DME
- ILS/DME - No frequency could be assigned to 16 (out of 98) ILS/DME facilities





## Spectrum capacity assessment for the frequency band 108 – 117.975 MHz

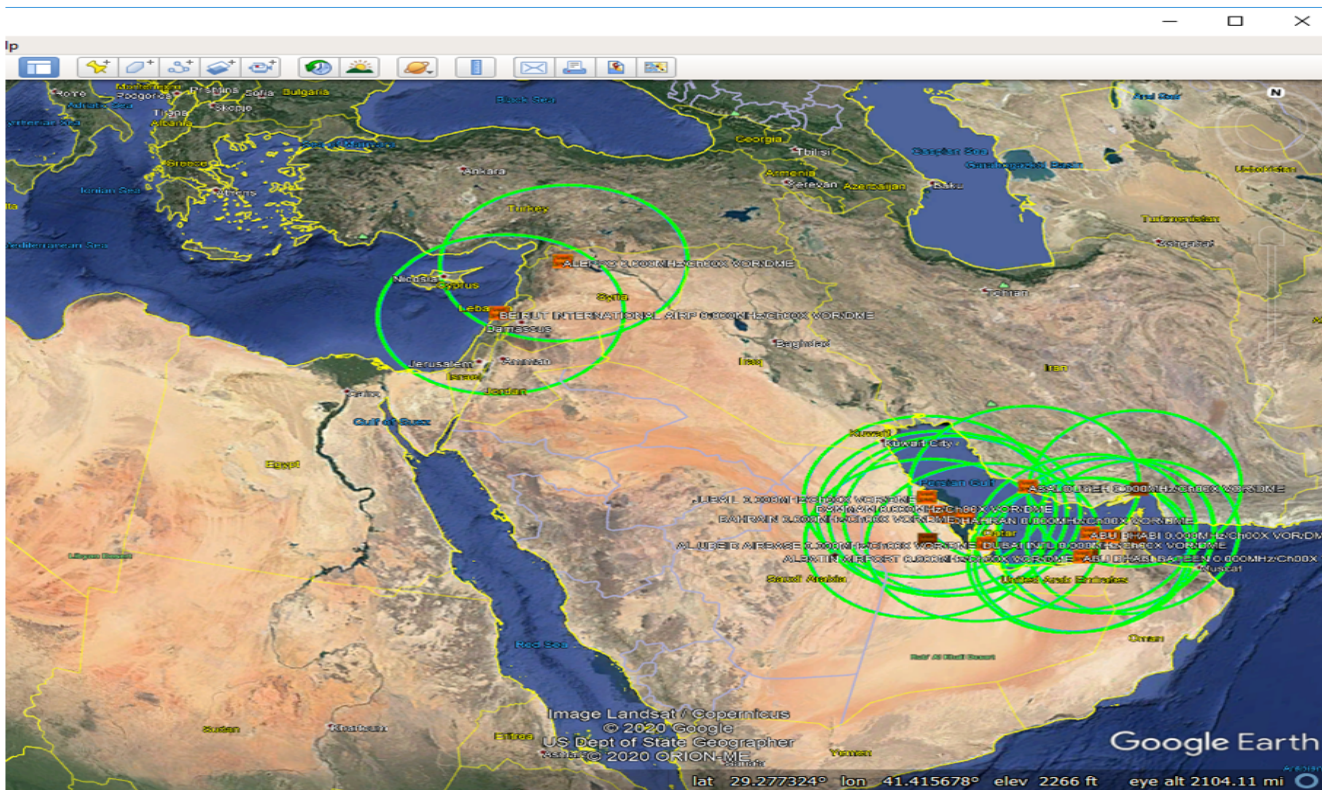


Locations of  
ILS/DME  
facilities where  
no frequency  
assignment  
could be made

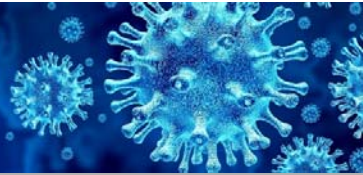




## Spectrum capacity assessment for the frequency band 108 – 117.975 MHz



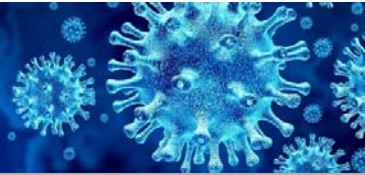
VOR/DME - No frequency on 100 kHz channels could be assigned to 17 VOR/DME facilities



## Spectrum capacity assessment for the frequency band 108 – 117.975 MHz

### Conclusions

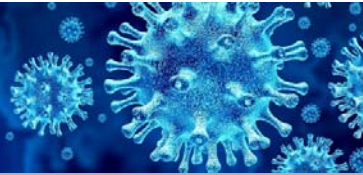
- From the simulation it can be concluded that currently in the MID Region in the area around the UAE as well as in the northern part of the MID Region the frequency band is heavily congested or saturated for ILS/DME and VOR/DME frequency assignments.
- A further simulation is being prepared.
- The congestion in the areas identified may raise questions with regard to additional implementation of requirements for GBAS/VDB frequency assignments in these areas.



## Spectrum capacity assessment for the frequency band 108 – 117.975 MHz

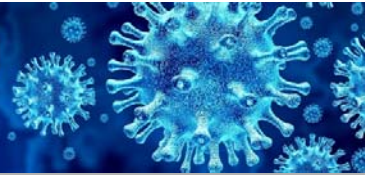
### Next action(s)

- To update the NAV module with operating facilities in the MID Region; **Ongoing**
- study the feasibility of implementing 50KHz channel spacing; and
- To develop a rolling frequency assignment plan for VHF-COM and ILS, VOR, DME and GBAS/VDB facilities that is aimed at satisfying the operational needs from States until 2030. (States plans to install future NAV and/or COM facilities???)



## Revision of the Handbook on Radio Frequency Spectrum Requirement for Civil Aviation (DOC9718), Volume II

- The Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (DOC 9718), Volume II, Frequency assignment planning criteria for aeronautical radio communication and navigation systems, was published in 2013 as the first edition
- There are 2 chapters and 3 appendices in the present Handbook, including Chapter 1. General Methodology for compatibility Analysis, and Chapter 2. Aeronautical VHF air-ground radio communication system operating in the band 117.975-137MHz.
- In the Navigation Systems Panel (NSP), work has been progressed on the development of frequency assignment planning criteria for NAV systems (ILS, VOR, DME and GBAS/VDB). This work is now mature and is expected to be approved by the NSP in November 2020

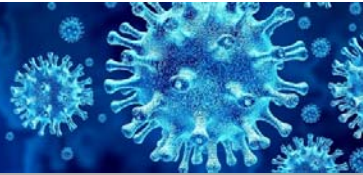


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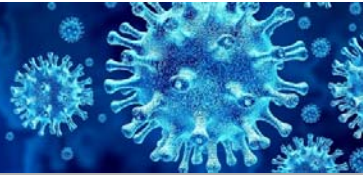
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The FMWG will undertake the following tasks in the work required to manage the MID Region frequency assignments in order to ensure sufficient access to the resource for the provision of aeronautical communication, navigation and surveillance services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

- develop MID Region frequency assignment plan including long term spectrum usage of radio systems;
- validate the ICAO Global database and keep it up to date;
- resolve current frequency assignments conflict in the ICAO Global database;
- 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;
- propose solutions for the interference incidents occurred in MID Region states in a timely manner;
- escalate the intentional frequency interference matters and coordinate with other relevant international organizations, as and when required;
- provide guidance/support to States to protect the GNSS signals;

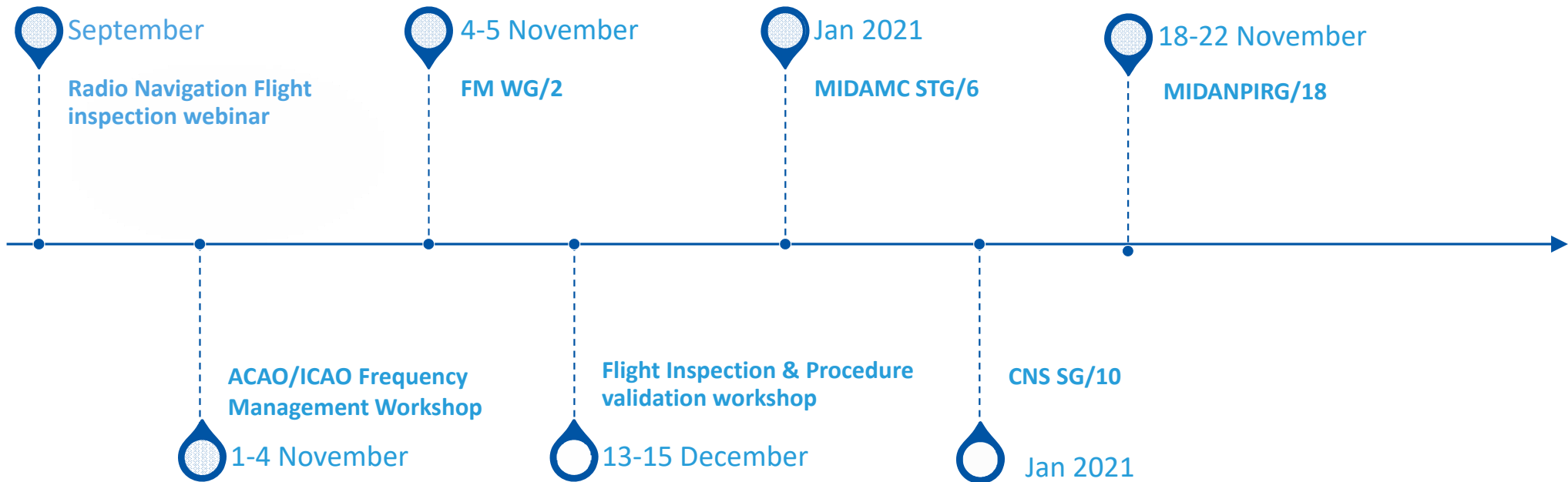


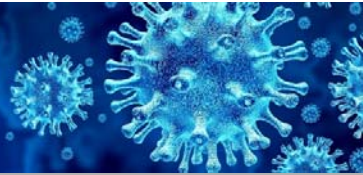
- collaborate with ITU and other relevant international organization to address frequent interference incidents;
- support for ICAO Position at World Radio Communication Conference (WRC) and ensure MID States' support ICAO at ITU meetings;
- collaborate with Regional Groups; Arab Spectrum Management Group (ASMG) and African Telecommunication Union (ATU), to support ICAO position at WRC;
- 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;
- 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
- 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.





## Future Work Programme





## Meeting Agenda

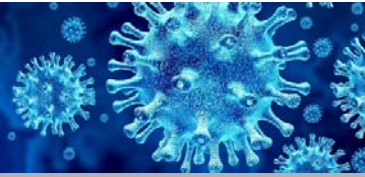


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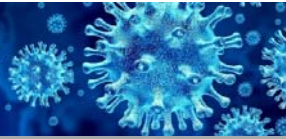


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## Frequency Management Workshop for GCC States



**Thank you for your Attention**