ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY

Frequency Management in the MID Region

Frequency coordination process

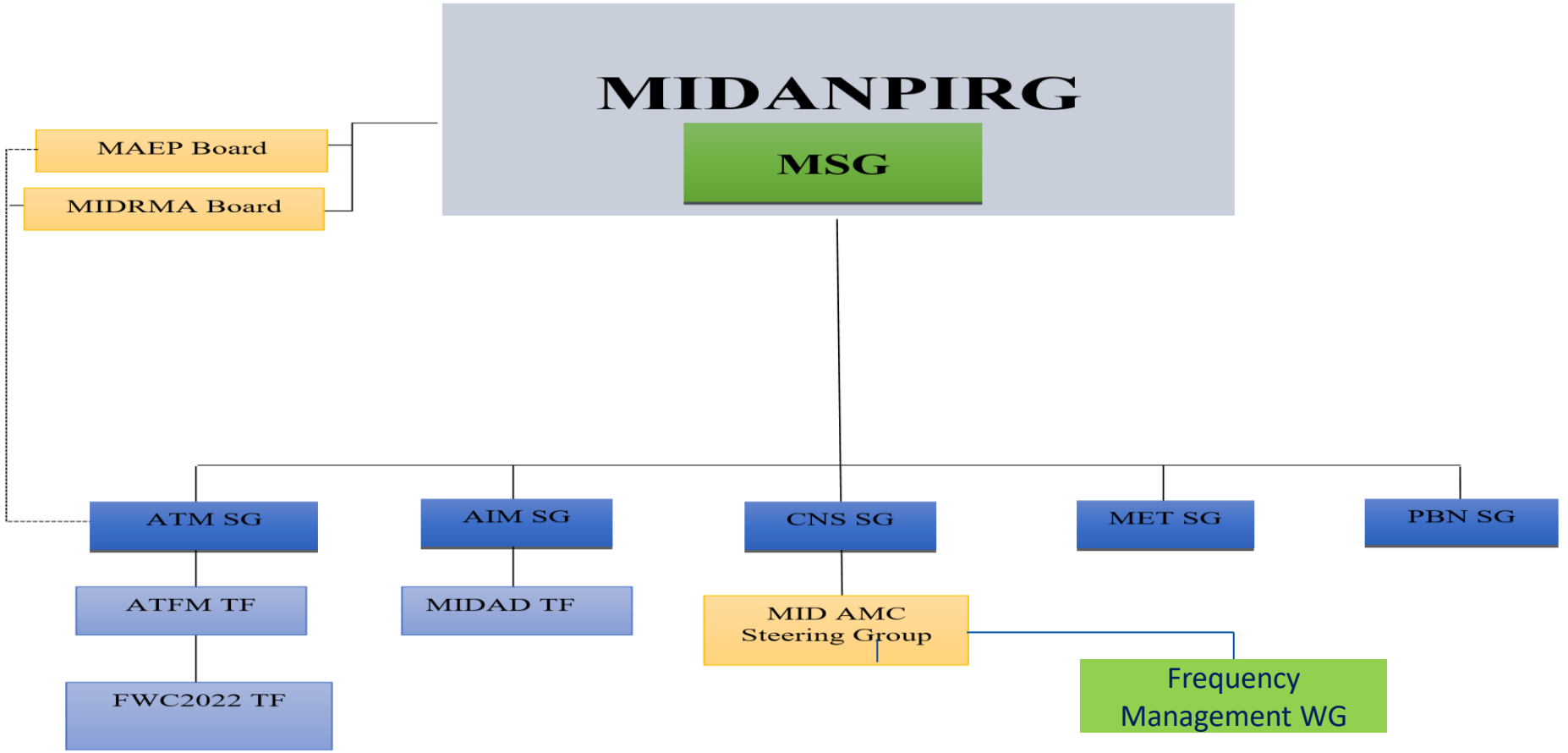
- The current practice of frequency coordination

  a) Frequency coordination is **performed by the Regional Office**

  b) **States/GCC can submit** to the Regional Office their requests for new or modified frequency assignments in **any format** (e.g. letter, email)

- The introduction and use of the ICAO Frequency Finder tool for the coordination of frequency assignments within the MID Region as well as with adjacent Regions has presented the opportunity to improve the efficiency in the frequency coordination and frequency assignment processes

MIDANPIRG ORGANIZATIONAL CHART



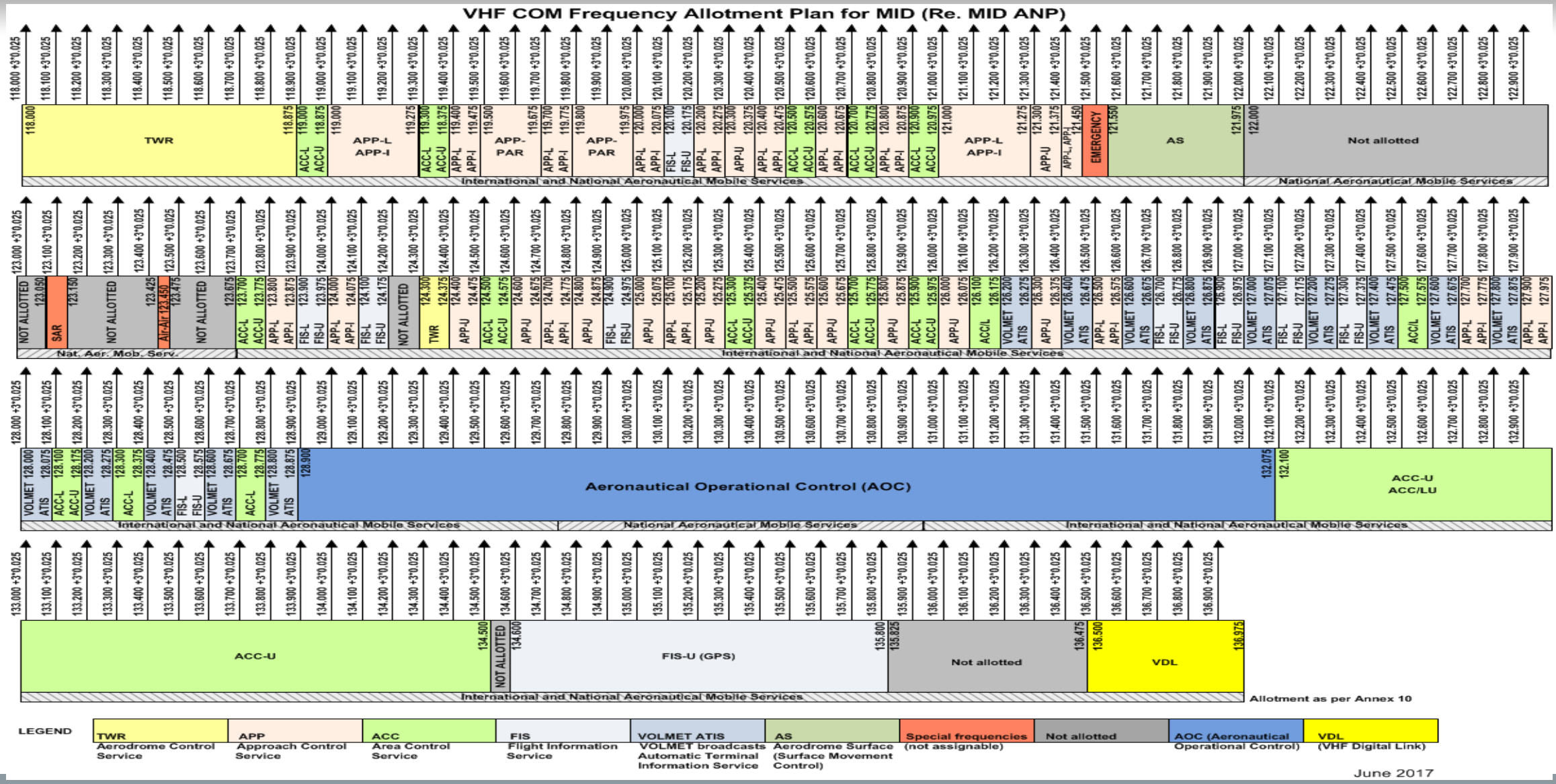
FM WG was created in 2019

MID Region Allotment Plan

- Each Region has developed a frequency allotment plan where sub-bands in the band 117.975 - 137 MHz have been allotted to specific air-ground communication services

- Review of the allotment plan may increase the amount of spectrum that can be used for ATC Services
  - **Current sub-bands that are not allotted (135.825 – 136.475)MHz**
  - **Band that is currently allotted for AOC (ex. 128.900 – 132.075)MHz**

VHF COM Frequency Allotment Plan for MID (Re. MID ANP)



June 2017

MID Region Allotment Plan

Why	**To increase the amount of spectrum that can be used for ATC Services**
What	To revise the MID Region Allotment plan based on planning principle for aeronautical facilities and services operating in the aeronautical frequency bands of 117.975- 137 MHz
Who	Frequency Management Working Group
When	March 2024

MID Region Allotment Plan

DECISION 20/35: REVIEW OF THE MID REGION ALLOTMENT PLAN

*THAT, IN ORDER TO INCREASE THE AMOUNT OF SPECTRUM THAT CAN BE USED FOR ATC SERVICES, THE FREQUENCY MANAGEMENT WORKING GROUP SHOULD ADOPT THE REVISED PLANNING PRINCIPLE FOR AERONAUTICAL FREQUENCY BANDS OF 117.975-137 MHZ AND REVIEW AND UPDATE, AS DEEM NECESSARY, THE CURRENT MID ALLOTMENT PLAN BY **Q1 2024**.*

Implementation of 8.33 KHz

- Due to the expected increase in air traffic and foreseen increased demands on frequencies assignment in the MID Region, a recommendation was formulated at the ACAO/ICAO Frequency Management workshop to conduct a simulation on VHF COM frequency assignment in the MID Region based on the new operational requirements of States to 2030 as necessary.

- 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.

- MIDANPIRG/20 meeting invited States/Administrations to submit these requirements to the MID Regional Office. The analysis aims to determine whether these requirements can be assigned frequencies within the available 25 kHz channels.

Implementation of 8.33 KHz

Why	**To conduct a simulation for VHF COM frequency assignment based on new operational requirements of States to 2030 as necessary**
What	To conduct a simulation for VHF COM frequency assignment based on new operational requirements of States to 2030 as necessary
Who	MID States
When	Before 1 October 2023

VHF NAV Congestion

- There are some discrepancies between ICAO FF Tool- NAV database and States' AIP.

- In some cases, it may be possible that States have put into operation NAV facilities with frequency assignments that have not been coordinated with ICAO. This may result in such facilities not being protected from harmful interference or such facilities causing harmful interference to facilities for which the frequency assignment has been coordinated with ICAO.

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

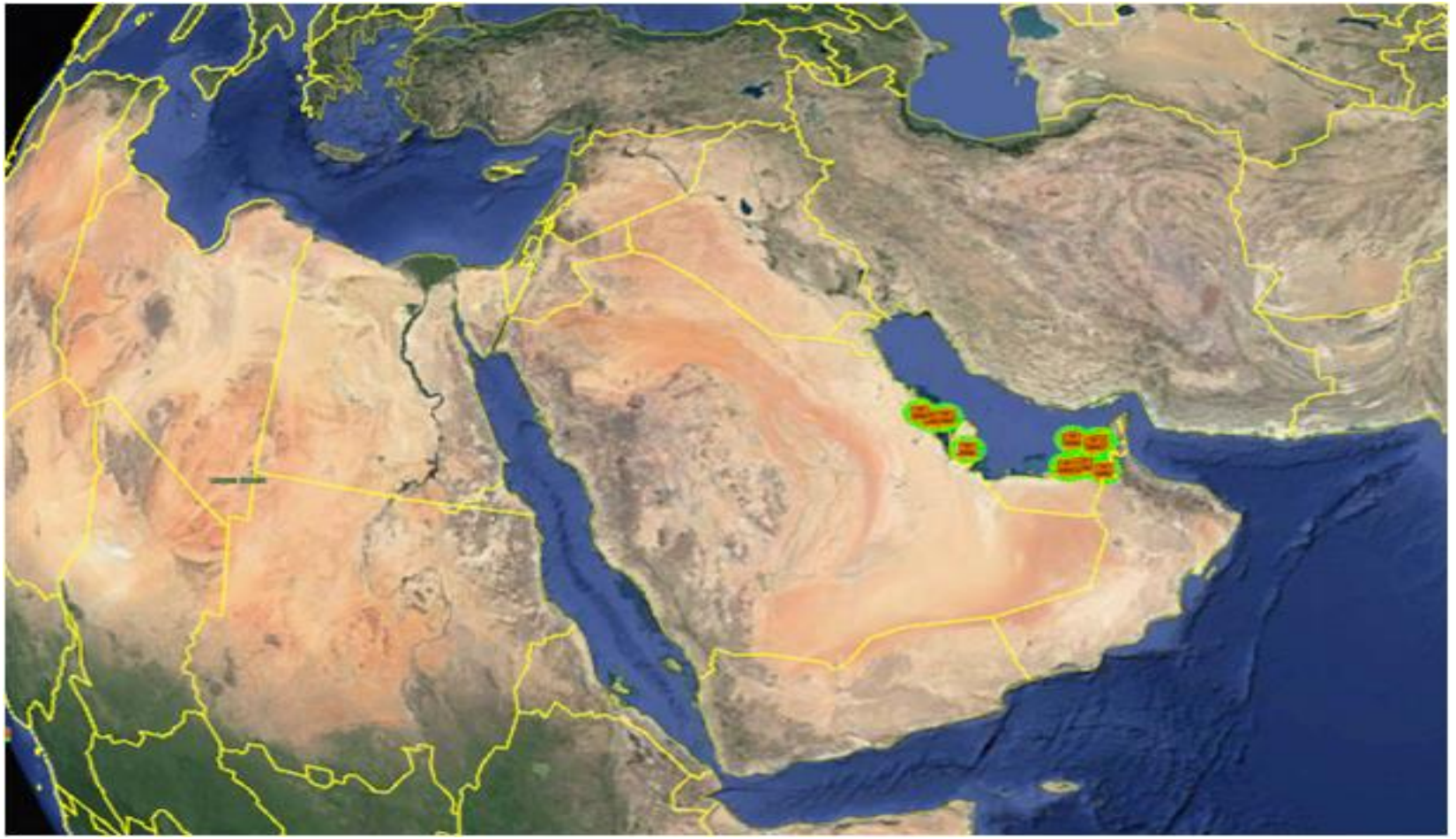
The result was for 98 airports in the MID Region the addition of a single ILS/DME facility at each airport as well as the addition of a single VOR/DME facility at each airport.

Spectrum capacity assessment for the frequency band 108 – 117.975 MHz

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:

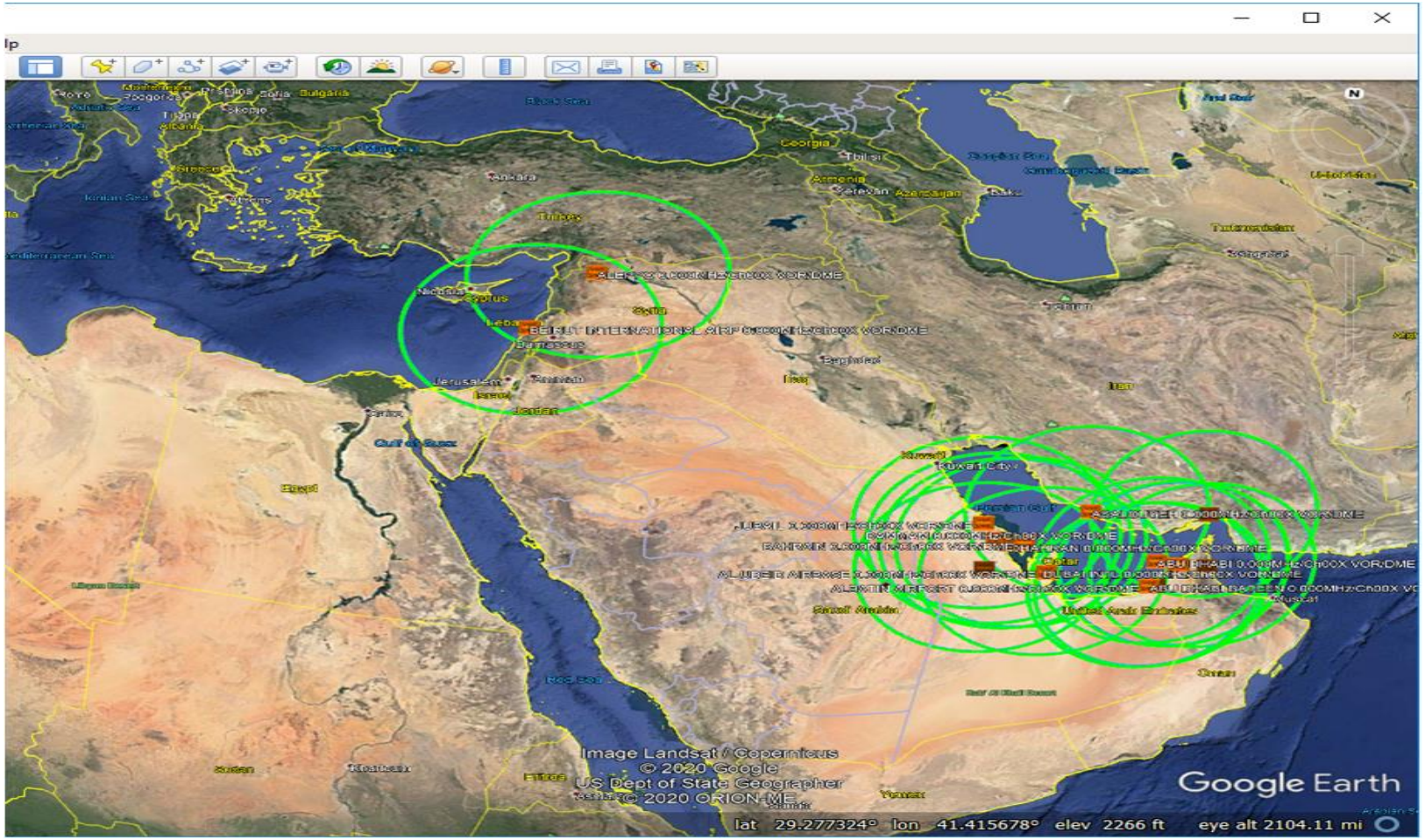
- Determine the need for a full implementation of 50 kHz channel spacing
- Identify areas where future implementation of ILS or VOR systems may be difficult.

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.

- 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

Identified solutions

- update the NAV module with operating facilities in the MID Region;
- implementing reduced channel spacing (50KHz); and
- enhancement of FF to facilitate efficient use of spectrum in cooperation with the ACAO (Arab Civil Aviation Organization) to assist States and ICAO regional offices to visualize the current and future frequency congestions of VHF NAV facilities (ILS/DME and VOR/DME) as well as to identify the optimal spectrum assignment globally and regionally.

Interference Management

- States should, to the extent possible, use FF to coordinate for all frequency assignments that may affect the use of frequencies in other States.

- In case of harmful interference reported:
  - Request State to identify the source of interference;
  - Assess the situation using the FF Tool;
  - Request States concerned to review operational needs, transmitting power,…etc as required
  - Inter-regional coordination takes place between the Regional Offices
  - ICAO holds the view that frequency assignments that have been coordinated with ICAO have priority over those that have not been coordinated. *"Propose to change frequency (date of registration)"*

- States are encouraged to coordinate efficiently with national TRA regarding interference incidents analysis and other spectrum issues.

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(HEADQUARTERS)

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(EUROPEAN AND
NORTH ATLANTIC)

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(ASIA-PACIFIC
SUB-OFFICE)

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(MIDDLE EAST)

BANGKOK
(ASIA-PACIFIC)

NAIROBI
(EASTERN AFRICA)

LIMA
(SOUTH AMERICA)

Thank you for your Attention