



ICAO

# INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY



# Frequency Finder

## *NAV Module*

---



**ICAO Workshop on Frequency Finder**

Nairobi, Kenya, 12 – 16 August 23

**Prepared by**

Loftur Jónasson, ICAO/HQ

Mie Utsunomiya, ICAO/HQ

Fabiola Chouha, ICAO/HQ

Robert Witzen



## Home Page for VHF/UHF NAV ILS (Localizer and Glide Path), VOR, DME and GBAS

### Exploration of the main functions - VHF NAV module Start page

Frequency Finder

File Edit View Insert Format Records Scripts Window Help

2023\_03

ICAO OACI ICAO

PARIS CAIRO DAKAR NAIROBI BANGKOK MEXICO LIMA

User Manual Time Zone -4 Sync Manual Application Runtime

Server <https://frequency.icao.int/fflogin/>

User State

The server <http://frequency.icao.int/fflogin> is not operational until the compatibility issues with Windows 10 have been addressed.

Select from the field below the Region from which you are operating.

**==AFI**

module, click of R button first

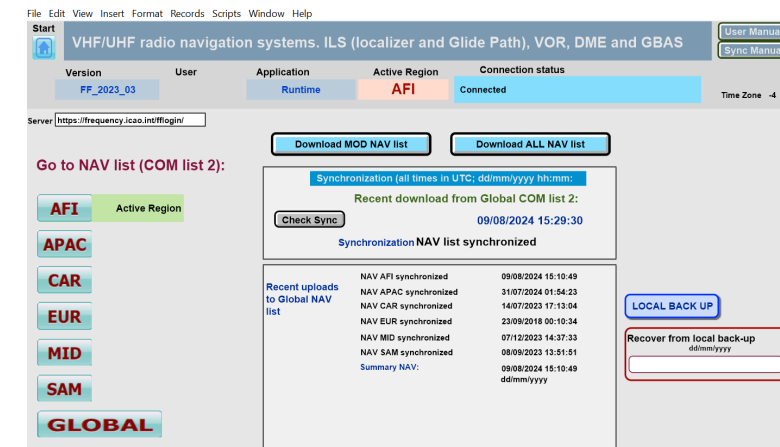
The ICAO Regional Offices are responsible for the coordination of frequency assignments.

VHF NAV

Click "VHF-NAV"

Select "AFI"

# Start page → Home page VHF/UHF NAV




- Navigate to Home Page: Automatic Connection Test and check if the **COM list 2** was modified
- Also with button Check Sync
- Dialog box is displayed if a download synchronization is necessary
- Message field
- Download button
- Back-up and Recovery





## Home Page for VHF/UHF NAV and Integrity Check ILS (Localizer and Glide Path), VOR, DME and GBAS

File Edit View Insert Format Records Scripts Window Help

Start  VHF/UHF radio navigation systems. ILS (localizer and Glide Path), VOR, DME and GBAS User Manual Sync Manual

| Version    | User | Application | Active Region | Connection status | Time Zone |
|------------|------|-------------|---------------|-------------------|-----------|
| FF_2023_03 |      | Runtime     | <b>AFI</b>    | Connected         | -4        |

Server

Go to NAV list (COM list 2):

**AFI**  
APAC  
CAR  
EUR  
MID  
SAM  
GLOBAL

Active Region

**Download MOD NAV list** **Download ALL NAV list**

Synchronization (all times in UTC; dd/mm/yyyy hh:mm)

Recent download from Global COM list 2:  
21/02/2022 15:53:49

**Check Sync**

Synchronization **Global NAV list 2 modified**

<2A> Update NAV COM list 2

The global NAV COM List 2 was modified.

Click "Download" to download these modifications.  
Click "Cancel" to Cancel

**Cancel** **Download**

**LOCAL BACK UP**

Recover from local back-up  
dd/mm/yyyy

Click your active region  
"AFI"

If required, click download



## Home Page for VHF/UHF NAV ILS (Localizer and Glide Path), VOR, DME and GBAS

Frequency Finder

File Edit View Insert Format Records Scripts Tools Window Help

Home Go to AFI COM list 2

records found 1 MOD DR Key 930049 D

Save as draft record  
Save as registered record  
Delete draft record

NEW / MOD / DEL FACILITY  
Press Esc to cancel running scripts

Insert here new or modified characteristics

Region AFI Mod assignment Cat I  
Country Côte d'Ivoire Ctry CTI  
Location BOUAKE

Latitude 07 D 43 ' 00 " N Frequency 109.100  
Longitude 005 D 04 ' 00 " W Channel 028X  
Facility ILS/DME  
ID ILS  
ILS/DME  
VOR  
VOR/DME  
DME  
TACAN  
VOR/TAC  
GBAS  
VDL 4

Remarks

Required fields

VHFcoSumm  
VHFadjSumm  
GPadjSumm  
GPadjMargin

System  
ILS 1  
VOR 2  
DME 3  
GBAS 5  
VDL M4 6

Channel spacing  
100 kHz  
150 kHz  
25 kHz

Insert here parameters for finding new frequency

Set VHF or UHF (DME) range  
START 108.100 MHz  
END 111.950 MHz  
START 018X Ch  
END 056Y Ch  
SEARCH RANGE 108.099...111.951 MHz  
018X...056Y Ch  
Max. # of frequencies 10  
# FOUND 0

START SEARCH

Frequencies/Channels found

| Select | VHF | DME | Glide Path |
|--------|-----|-----|------------|
| FF1    |     |     |            |
| FF2    |     |     |            |
| FF3    |     |     |            |
| FF4    |     |     |            |
| FF5    |     |     |            |
| FF6    |     |     |            |
| FF7    |     |     |            |
| FF8    |     |     |            |
| FF9    |     |     |            |
| FF10   |     |     |            |

VHF margin

VHF freq Summ  
UHF ch Summ

Selected Frequency / Channel

View calculation results

Searching

MLS selection is currently not included.  
Frequency Finder inserts automatically the user name and the date of the modification to the table COM list 2 (NAV systems).

Add a DME to an existing ILS facility  
or for VOR Select VOR, VOR/DME, DME, TACAN, VOR/TAC)



## Home Page for VHF/UHF NAV ILS (Localizer and Glide Path), VOR, DME and GBAS

Frequency Finder

File Edit View Insert Format Records Scripts Tools Window Help

Home

Go to AFI COM list 2

records found 1 MOD DR Key 930049 D

Save as draft record

Save as registered record

Delete draft record

NEW / MOD / DEL FACILITY

Press Esc to cancel running scripts

Insert here new or modified characteristics

Region AFI Mod assignment Cat I

Country Côte d'Ivoire Ctry CTI

Location BOUAKE

Latitude 07 D 43 ' 00 " N S Frequency 109.100

Longitude 005 D 04 ' 00 " W E Channel 028X

Facility ILS/DME

ID BUA

ILS 25/62.5

DME 25/62.5

Remarks

Required fields

VHFcoSumm

VHFadjSumm

GPadjSumm

GPadjMargin

System

ILS 1

VOR 2

DME 3

GBAS 5

VDL M4 6

Set VHF or UHF (DME) range

START 108.100 MHz

END 111.950 MHz

START 018X Ch

END 056Y Ch

START SEARCH

Frequencies/Channels found

| Select | VHF | DME | Glide Path |
|--------|-----|-----|------------|
| FF1    |     |     |            |
| FF2    |     |     |            |
| FF3    |     |     |            |
| FF4    |     |     |            |
| FF5    |     |     |            |
| FF6    |     |     |            |
| FF7    |     |     |            |
| FF8    |     |     |            |
| FF9    |     |     |            |
| FF10   |     |     |            |

Selected Frequency / Channel

View calculation results

Searching

MLS selection is currently not included.  
Frequency Finder inserts automatically the user name and the date of the modification to the table COM list 2 (NAV systems).

Not tested

DMEcoSumm

DMEadjSumm

Important

For the ILS, Frequency Finder inserts the standard DOC of 25 NM / 6250 ft.

When a DME is added to an ILS facility, the DOC is also set to these values.

The user can modify these as necessary.

Add a DME to an existing ILS facility or for VOR Select VOR, VOR/DME, DME, TACAN, VOR/TAC)



## Other ongoing improvements (cont'd)

### NAV module – plotting interference contours

Start Home Global COM list 2 Active Find Delete Record New or Mod or Del Test Frequency Calculation results

MID COM list 2 RESET QUERY Mapping Export COM list

total 6522 455 found D ID Query

MOD Key Region Country Ctry Location test Latitude Longitude Facility ID Freq. Gl. P. Ch. TRD VHFDOC VHFpwr DMEDOC DMEpwr Cat Remarks

|          |  |  |  |     |  |                          |         |     |         |         |      |         |    |        |    |   |         |
|----------|--|--|--|-----|--|--------------------------|---------|-----|---------|---------|------|---------|----|--------|----|---|---------|
| R 928182 |  |  |  | QTR |  | 25D15'10" N 051D36'23" E | ILS/DME | QAT | 108.100 | 334.700 | 018X | 25/62.5 | 17 | 80/100 | 27 | I | RWY 16R |
|----------|--|--|--|-----|--|--------------------------|---------|-----|---------|---------|------|---------|----|--------|----|---|---------|



Summary of CO- and ADJ frequency calculations Delete all records Show all records

Calculation details Co freq. compatibility ADJ freq. compatibility

Calculation details Calculation details

Details of station tested

| Date | Key | D | Frequency | UHF ch | Region | Country | Location | Service | Margin VHF | Result VHF | Margin VHF | Result VHF | Result DME | ADJ frequency compatibility | Result VHF | Result DME |
|------|-----|---|-----------|--------|--------|---------|----------|---------|------------|------------|------------|------------|------------|-----------------------------|------------|------------|
|      |     |   |           |        |        |         |          |         |            |            |            |            |            |                             |            |            |
|      |     |   |           |        |        |         |          |         |            |            |            |            |            |                             |            |            |
|      |     |   |           |        |        |         |          |         |            |            |            |            |            |                             |            |            |





## Other ongoing improvements (cont'd)

### NAV module – plotting interference contours

Frequency Finder

File Edit View Insert Format Records Scripts Tools Window Help

**Calculation of CO-CHANNEL separation distances** **Calculation of CO-CHANNEL separation distances** ST

Summary calculation **Calculation details** Map interference all

Calculates compatibility of any DME facility (Go to Prop Curve)

Key R 928182 Region MLC Country Saudi Arabia Location Saudi Arabia Facility ILS/DME

Frequency Height Range PWRRD Copy VHF Frequency 108.100 DME channel 018X

VHF 108.100 6250 25 Minimum transmission loss between the location of the facility in that record and the facility in record 1

DME 018X 10000 80 Minimum transmission loss between the location of the facility in record 1 and the facility in record 2

frdeglatg 25.2527778 frdeglong 51.6063889 Mapping

VHF Marging -16 NM Not Compatible DME Marging -88 NM Not Compatible

Key R 928033 Region MLC Country Saudi Arabia Location DAMMAM Facility ILS/DME

Frequency Height Range PWRRD Copy L xx to 1 Dist to 1 L 1 to xx Dist to xx Minimum Required Separation Actual Separation

VHF 108.100 6250 25 17 153 112 153 112 137 121

DME 018X 6250 25 27 146 129 146 105 209

Measured from location to test points

VHF Margin -16 NM Not Compatible DME Margin -88 NM Not Compatible

Minimum separation distance between any undesired facility to the edge of the DOC of the desired facility

Map interference VHF Map interference DME

Key R 928217 Region MLC Country Saudi Arabia Location Saudi Arabia Facility ILS/DME

Frequency Height Range PWRRD Copy L xx to 1 Dist to 1 L 1 to xx Dist to xx Minimum Required Separation Actual Separation

VHF 108.100 6250 25 17 153 112 153 112 137 189

DME 018X 10000 80 27 146 129 146 129 209

Measured from location to test points

VHF Margin 52 NM Compatible DME Margin -20 NM Not Compatible

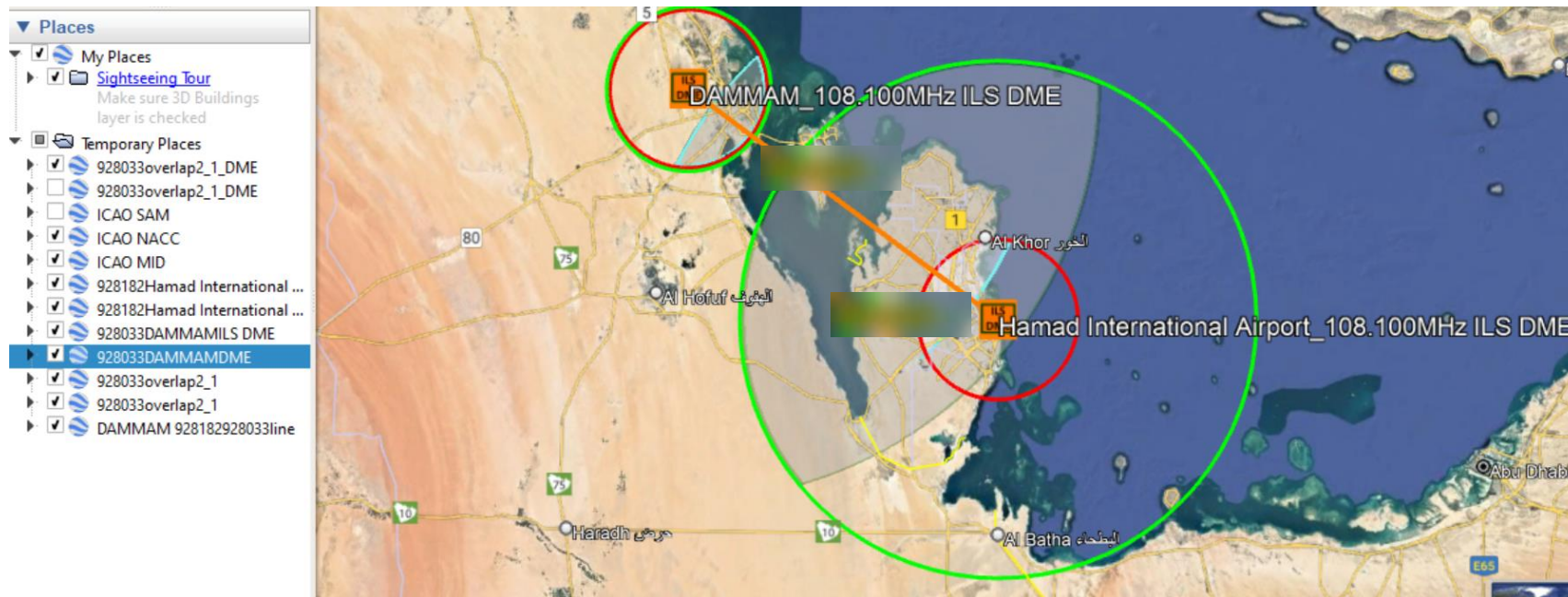
Map interference VHF Map interference DME

Key R 927842 Region MID Country Kuwait Location KUWAIT Facility ILS/DME



## Other ongoing improvements (cont'd)

NAV module – plotting interference contours – Map interference VHF and DME



# *Demonstrations*

## *Test Frequency & Understand the result*

## *Exercises*

***Exercise NAV 1- Update your COM List 2 of the Frequency Finder, using your latest data.***





Thank You!