



ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY



Frequency Finder

NAV Module



ICAO Workshop on Frequency Finder

Bangkok, Thailand | 09-13 October 2023

Prepared by

Loftur Jónasson, ICAO/HQ
Mie Utsunomiya, ICAO/HQ
Fabiola Chouha, ICAO/HQ
Isaiah Tefutor, ICAO/HQ
Robert Witzén



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

Version FF 2023_02

ICAO OACI HKAO

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

==APAC

To select a region module, click on button first

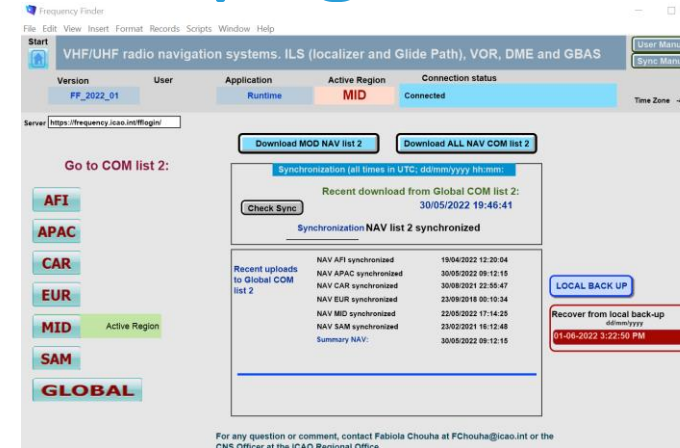
The ICAO Regional Offices are responsible for the coordination of frequency assignments.

VHF NAV

Click "VHF-NAV"

Select "APAC"

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

Frequency Finder

File Edit View Insert Format Records Scripts Window Help



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

Version	User	Application	Active Region	Connection status	Time Zone
FF_2023_02		Runtime	APAC	Connected	-4

Server:


Go to NAV list (COM list 2):

- AFI
- APAC Active Region
- CAR
- EUR
- MID
- SAM
- GLOBAL

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

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




Synchronization Global NAV list 2 modified

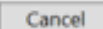
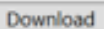
<2A> Update NAV COM list 2

The global NAV COM List 2 was modified.

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



Recover from local back-up
dd/mm/yyyy

For any question or comment,
contact Fabiola Chouha at FChouha@icao.int
or the CNS Officer at the ICAO Regional Office

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

Save as draft record
Save as registered record
Delete draft record

records found 1 MOD DR Key 930049 D

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
Height (feet) 6250
Height (m) 6250
eirp (dBW) 17
Remarks

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

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).

Required fields

VHFcoSumm
VHFadjSumm
GPadjSumm
GPadjMargin

Changes

Not tested

DMEcoSumm
DMEadjSumm

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 Frequency 109.100
Longitude 005 D 04 ' 00 " W Channel 028X

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).

Insert here parameters for finding new frequency

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.

Remarks

Required fields

VHFcoSumm
VHFadjSumm
GPadjSumm
GPadjMargin

Changes

Not tested

DMEcoSumm
DMEadjSumm

ID BUA

	Range (NM)	Height (feet)	eirp (dBW)
ILS	25/62.5	6250	17
DME	25/62.5	6250	27

Facility ILS/DME
ID ILS
ILS/DME
DME
VOR
VOR/DME
DME
TACAN
VOR/TAC
GBAS
VDL 4

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	
										-16	Not Compatible	-88	Not Compatible	352.11	Compatible	xxx	Compatible
										-16	Not Compatible	-88	Not Compatible	352.11	Compatible	xxx	Compatible
										-16	Not Compatible	-88	Not Compatible	352.11	Compatible	xxx	Compatible



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 ADJ freq.compatibility Calculation details Map interference all Calculates comp any DME facility (Go to Prop Curve

Key	R 928182	Region	MILC	Country	Saudi Arabia	Location	Saudi Arabia	Facility	ILS/DME	frdeglatg	25.2527778	frdeglong	51.6063889
2	1	Frequency	Height	Range	PWIRRD Copy	VHF Frequency	108.100	DME channel	018X	VHF Marging	-16	NM	Not Compatible
		VHF 108.100	6250	25						DME Marging	-88	NM	Not Compatible
		DME 018X	10000	80									

Minimum transmission loss between the location of the facility in that record and the facility in record 1

Minimum transmission loss between the location of the facility in record 1 and the facility in record 2

Key	R 928033	Region	MILC	Country	Saudi Arabia	Location	DAMMAM	Facility	ILS/DME	frdeglatg	26.4500000	frdeglong	49.7930556		
1	2	Frequency	Height	Range	PWIRRD Copy	L xx to 1	Dist to 1	L 1 to xx	Dist to xx	Minimum Required Separation	Actual Separation	VHF Margin	-16	NM	Not Compatible
		VHF 108.100	6250	25	17	153	112	153	112	137	121	DME Margin	-88	NM	Not Compatible
		DME 018X	6250	25	27	146	129	146	105	209					

Measured from location to test points

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	MILC	Country	Saudi Arabia	Location	Saudi Arabia	Facility	ILS/DME	frdeglatg	26.4500000	frdeglong	49.7930556		
1	2	Frequency	Height	Range	PWIRRD Copy	L xx to 1	Dist to 1	L 1 to xx	Dist to xx	Minimum Required Separation	Actual Separation	VHF Margin	-52	NM	Compatible
		VHF 108.100	6250	25	17	153	112	153	112	137	189	DME Margin	-20	NM	Not Compatible
		DME 018X	10000	80	27	146	129	146	129	209					

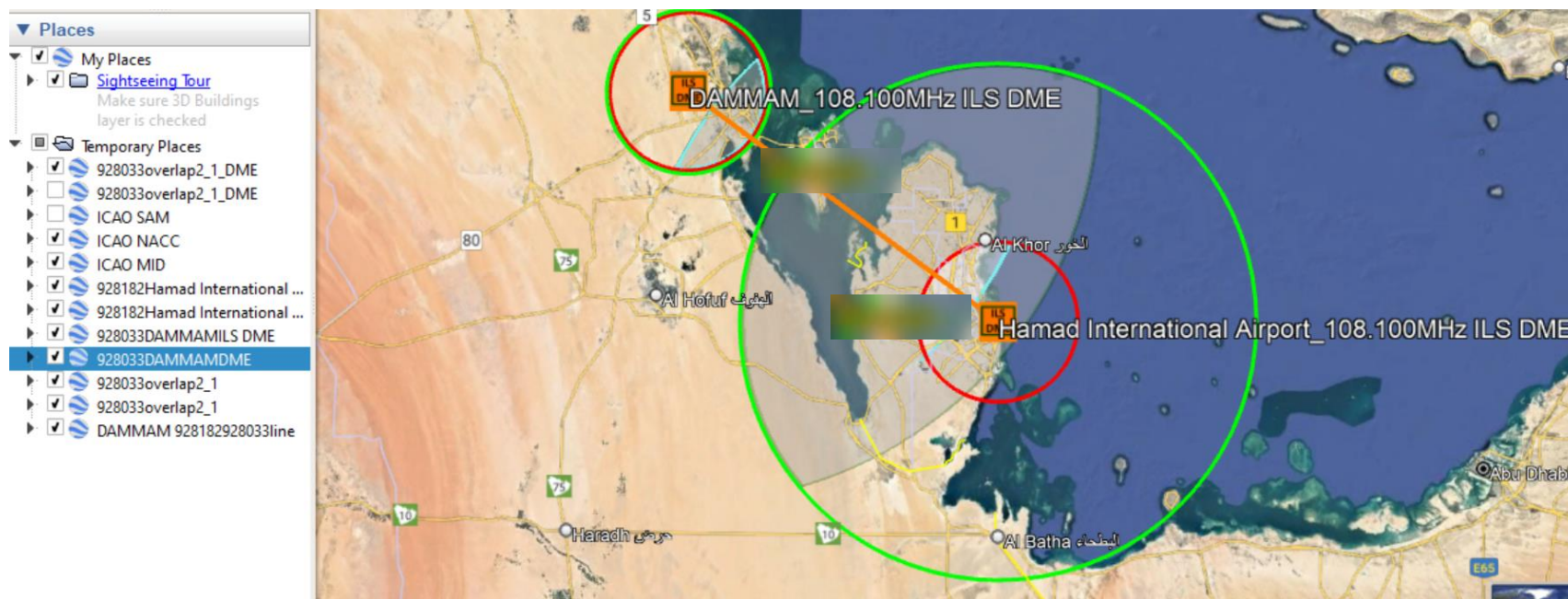
Map interference VHF

Map interference 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!