



ICAO Frequency Finder

Easy Reference for Exercise

AFI Introductory Virtual Workshop

Presentation 2: Demo and Exercise

Presented by

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Prep for FF operation

- **Download** from the FSMP website the zip-file FF2020.08
www.icao.int/safety/fsmp/documents/frequencyfinder
- Remove earlier version of Frequency Finder, if any.
- **Unzip and run the installer file FF2020.8.R.exe**
- Select to create desktop icon
- **Download and install Google Earth**
- More details in the User Manual :

Installing Frequency Finder(Run-time version)

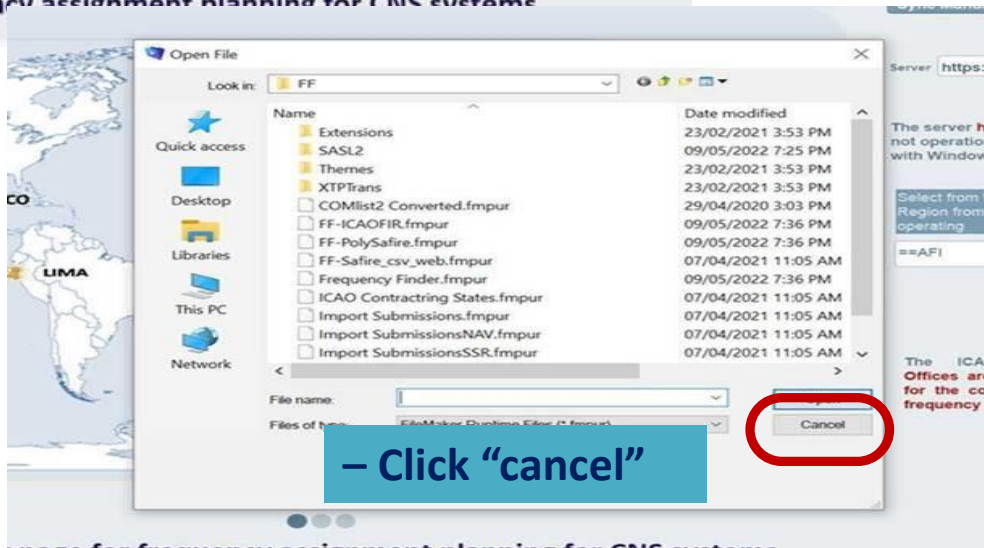
This PC > Windows (C:) > FrequencyFinder

- User manual - Import Submissions.docx
- User manual - InstallFullRegionalOffices.docx
- ☒ User manual - InstallRuntime2017.docx
- User manual - Planning criteria Mode S II.docx

RECONNECTING THE WORLD



You might get the messages below.



Note that those do not effect any work of the software but we are working on removing those.



Exercise 1 – VHF-COM module



Query – Example: Angola 130.900 Mhz




Exercise 1 – VHF-COM module

Query – Example: Angola 130.900 Mhz

Frequency Finder

Home  Regional COM list 

Query database
Enter your QUERY

ST 

QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY

Region ==AFI Frequency 130.900

Country ==Angola R Service

Location R FIR Sector

Ext. Range

Query Database

Find

New Query

To delete parameters for the query click button New Query

1. Select criteria for the query from the fields in the blue box
2. Select geographic parameters (Region, Country and Location) first, if required
3. Select Frequency, Service or FIR Sector, if required ER

Note: combinations of frequency, service and sector are not permitted since

① Click **“Query”**

② Select State: **Angola**, Frequency : **130.900**

③ Click **“Find”**



Result – VHF-COM module exercise 1

– Example: Angola 130.900 Mhz

Frequency Finder

FF-2017-07 Active Region ==AFI COM list 3 for VHF COM air/ground frequency assignments in the band

Start Home Global COM list Active Find New or Mod or Del Freq. TEST FREQUENCY Calculation results

Regional COM list SELECT MAPPING Export COM list 3 Special Func

FM DU D total found 27133 1 Query

Query active.
To return query click button "Active Find"
To cancel query: click button "Select" and "Clear"

UL Key Region Frequency Country Location Latitude Longitude DOC

R	300899	AFI	130.900	Angola	LUANDA ACC	08D51'00" S	013D14'00" E	ACC-U C-260/450
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*Frequency Finder found the 130.900 MHz
in Angola (Key code 300899)*



Exercise No. 2 – VHF module Compatibility test – Example: Burkina Faso 119.700 MHz



Exercise No. 2 – VHF module Compatibility test

– Example: Burkina Faso 119.700 MHz . cont

File Edit View Insert Format Requests Scripts Window Help

Home Regional COM list

Query COM List 3
Enter your QUERY

QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY

Region ==AFI Frequency No Frequency selected

Country ==Botswana Service No Service selected

Location No Location selected FIR Sector No FIR name selected

Ext. Range No ER selected

Find

- ① Click “Query” ② Select State: **Burkina Faso** ③ Click “Find”



Quick Find																Reset	
MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC	FIR Sector	PolyID	Extended Range	F	Cat	Stat	Remarks		
	R	300222	AFI	119.700	Burkina Faso	BKF	BOBO DIOULASSO	11D09'48" N 004D19'15" W	TWR C-25/40				ICAO				
	R	301675	AFI	120.300	Burkina Faso	BKF	BOBO DIOULASSO	11D09'48" N 004D19'15" W	ACC-U C-200/450	FIR NIAMEY	99295	ER-BKF-1	ICAO		Secteur de C		
	R	300223	AFI	121.900	Burkina Faso	BKF	BOBO DIOULASSO	11D10'00" N 004D19'00" W	AS C-5/1				ICAO				
	R	301676	AFI	129.100	Burkina Faso	BKF	BOBO DIOULASSO	11D09'49" N 004D19'15" W	ACC-U C-261/450			ER-CTI-1	ICAO		Secteur de A		
	R	301672	AFI	120.300	Burkina Faso	BKF	DIAPAGA	12D03'58" N 001D00'00" E	ACC-U C-200/450	FIR NIAMEY	99295	ER-BKF-1	ICAO		Secteur de C		
	R	301587	AFI	131.300	Burkina Faso	BKF	DIAPAGA	12D03'58" N 001D00'12" E	ACC-U C-200/450	FIR NIAMEY	99295	ER-NIR-1	ICAO		Secteur Oue		
	R	301191	AFI	118.100	Burkina Faso	BKF	OUGADOUGOU	12D21'22" N 001D30'47" W	TWR C-25/40				ICAO		OP 120.300		
	R	301674	AFI	120.300	Burkina Faso	BKF	OUGADOUGOU	12D21'22" N 001D30'47" W	ACC-U C-200/450	FIR NIAMEY	99295	ER-BKF-1	ICAO		Secteur de C		
	R	301825	AFI	121.900	Burkina Faso	BKF	OUGADOUGOU	12D21'22" N 001D30'47" W	AS C-5/1				ICAO				

Select: 300222 (119.700 MHz)



Exercise No. 2 – VHF module Compatibility test

– Example: Burkina Faso 119.700 MHz . cont

FF-2020-6 Runtime 16.0.6 Active Region

Start Home Global COM list 3 Active Find New or Mod or Del Fre TEST FREQUENCY Calculation results

AFI COM list 3 RESET QUERY MAPPING Export COM list 3

FM DU D total found 10375 9 Query Query active. To return query click button "Active Find" To cancel query: click button "RESET QUERY"

Quick Find Reset

Special Functions - Export submissions -

10.4.247.205 Runtime https://frequ Import

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC	FIR Sector	PolyID	Extended Range	F	Cat	Stat	Remarks	
R	300222	AFI	119.700	Burkina Faso	BKF BOBO DILOULASSO	11D09'48" N	004D19'15" W	TWR C-25/40					ICAO			
R	301675	AFI	120.300	Burkina Faso	BKF BOBO DILOULASSO	11D09'48" N	004D19'15" W	ACC-U C-200/450	FIR NIAMEY	99295		ER-BKF-1	ICAO		Secteur de Ouagad	
R	300223	AFI	121.900	Burkina Faso	BKF BOBO DILOULASSO	11D10'00" N	004D19'00" W	AS C-5/1					ICAO			
R	301676	AFI	129.100	Burkina Faso	BKF BOBO DILOULASSO	11D09'49" N	004D19'15" W	ACC-U C-261/450				ER-CTI-1	ICAO		Secteur de Abidjan	
R	301672	AFI	120.300	Burkina Faso	BKF DIAPAGA	12D03'58" N	001D00'00" E	ACC-U C-200/450	FIR NIAMEY	99295		ER-BKF-1	ICAO		Secteur de Ouagad	
R	301587	AFI	131.300	Burkina Faso	BKF DIAPAGA	12D03'58" N	001D00'12" E	ACC-U C-200/450	FIR NIAMEY	99295		ER-NIR-1	ICAO		Secteur Ouest de Ni	
R	301191	AFI	118.100	Burkina Faso	BKF OUGADOUGOU	12D21'22" N	001D30'47" W	TWR C-25/40					ICAO		OP 120.300	
R	301674	AFI	120.300	Burkina Faso	BKF OUGADOUGOU	12D21'22" N	001D30'47" W	ACC-U C-200/450	FIR NIAMEY	99295		ER-BKF-1	ICAO		Secteur de Ouagad	
R	301825	AFI	121.900	Burkina Faso	BKF OUGADOUGOU	12D21'22" N	001D30'47" W	AS C-5/1					ICAO			

- ① With selection of 119.700 MHz, Click **"Test Frequency"**
- ② Select : **Single frequency**
- ③ Click **"MAP"**



Exercise No. 2 – VHF module Compatibility test – Example: Burkina Faso 119.700 MHz . cont

File Edit View Insert Format Records Scripts Window Help

COM Data Base (COM LIST 3) Summary Calculations												ST
Active Region ==AFI		Regional COM list		Delete all records		Redo calculations		Co-frequency details		Adj. frequency details		
Date	Key	D	Frequency	Region	Country	Location	Service	Margin	Result Co. freq.	Margin	Result Adj. freq.	
10_May_2022 8:45:06	300222	R	119.700	AFI	Burkina Faso	BOBO DIOULASSO	TWR	-109	Not compatible	***	Compatible	
10_May_2022 8:45:27	300222	R	119.700	AFI	Burkina Faso	BOBO DIOULASSO	TWR	-109	Not compatible	***	Compatible	

① Click “Co-frequency details”

Frequency Index

File Edit View Insert Format Records Scripts Window Help

COM Data Base (COM LIST 3) Details Co-frequency compatibility

Calculation of CO-frequency separation distances

Plot interference - All

Regional COM list

4 / 8 records

Show all records

Frequencies with a margin greater than 300 NM are not shown

Go to Adj channel calc

Go to Summary calc.

Test for the frequency

1

Key R 300222

Frequency 119.700

Range 25

Height 4000

Radio Horizon 78

Sectorname

Latitude 11D09'48" N

Service TWR

Region AFI

Country Burkina Faso

Location BOBO DIOULASSO

Longitude 004D19'15" W

DOC TWR C-25/40

Not compatible with record #2

Margin -109 NM

Not compatible

Tower Circular

Ext. range

Plot coverage

First record is station being tested, records below are stations against which the first station has been tested.

Compatibility calculations between unprotected services are only shown for information.

2

Key R 301153

Frequency 119.700

Range 150

Height 45000

Radio Horizon 261

Sectorname

Latitude 13D29'00" N

Service APP-U

Region AFI

Country Niger

Location NIAMEY NIAMEY

Longitude 002D10'00" E

DOC APP-U C-150/450

The distance is measured between the location of the station in record 1 and the location of the station in the current record

Actual distance 405 NM

Required distance 514 NM

Margin -109 NM

Not compatible

APP Upper Circular

Ext. range

Plot interference

3

Key R 300336

Frequency 119.700

Range 150

Height 45000

Radio Horizon 261

Sectorname

Latitude 09D34'00" N

Service APP-U

Region AFI

Country Guinea

Location CONAKRY GBESSIA

Longitude 013D37'00" W

DOC APP-U C-150/450

The distance is measured between the location of the station in record 1 and the location of the station in the current record

Actual distance

Required distance

Margin

Not compatible

APP Upper Circular

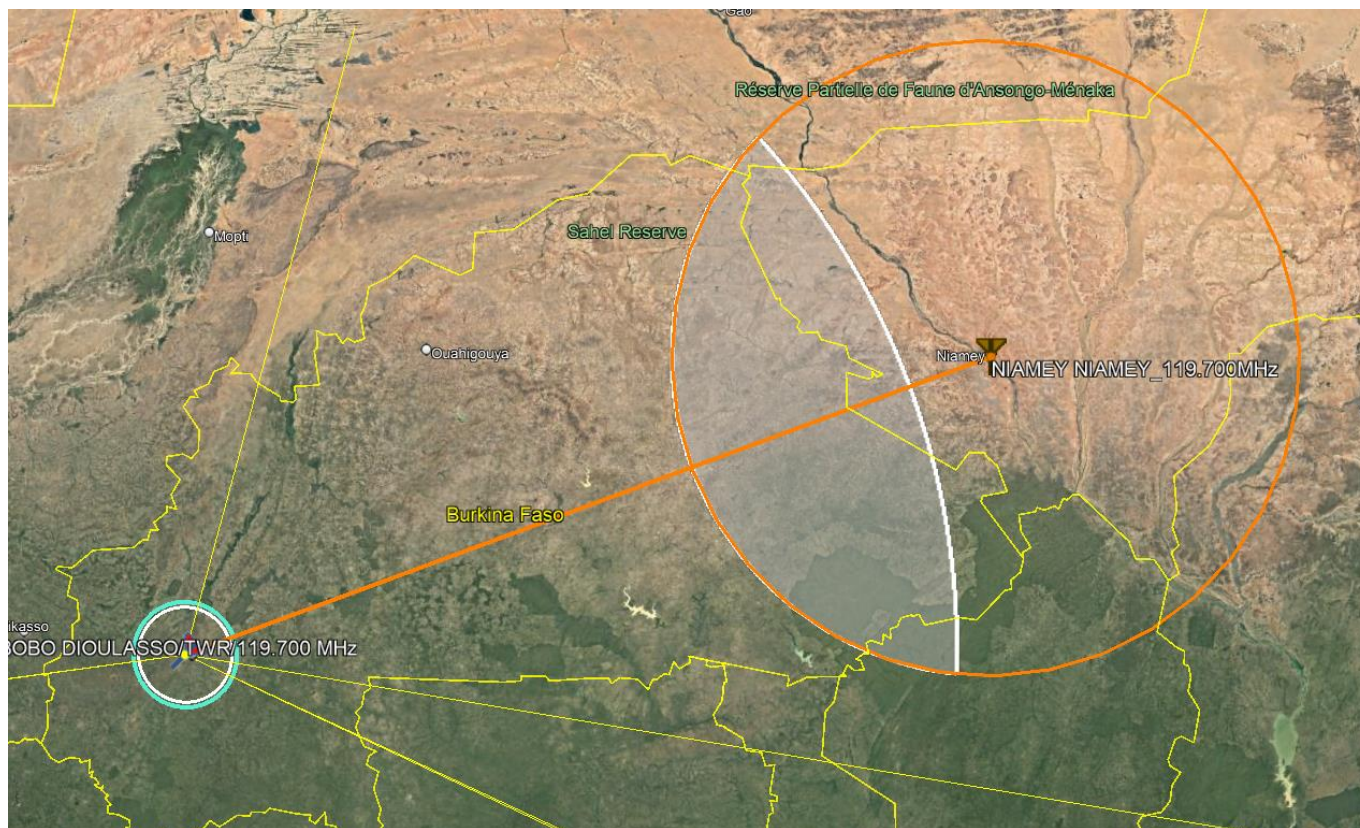
Ext. range

Result indicated that 300222 is *Not* compatible with 301153



Exercise No. 2 – VHF module Compatibility test – Example: Burkina Faso 119.700 MHz . cont

300222 is Not compatible with 301153

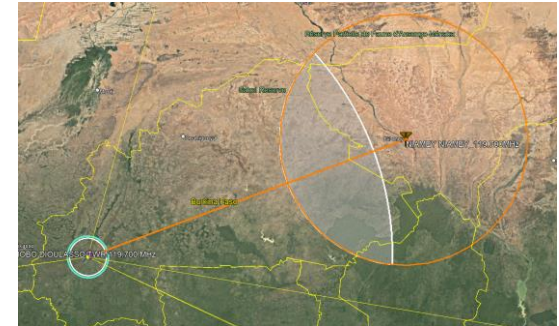
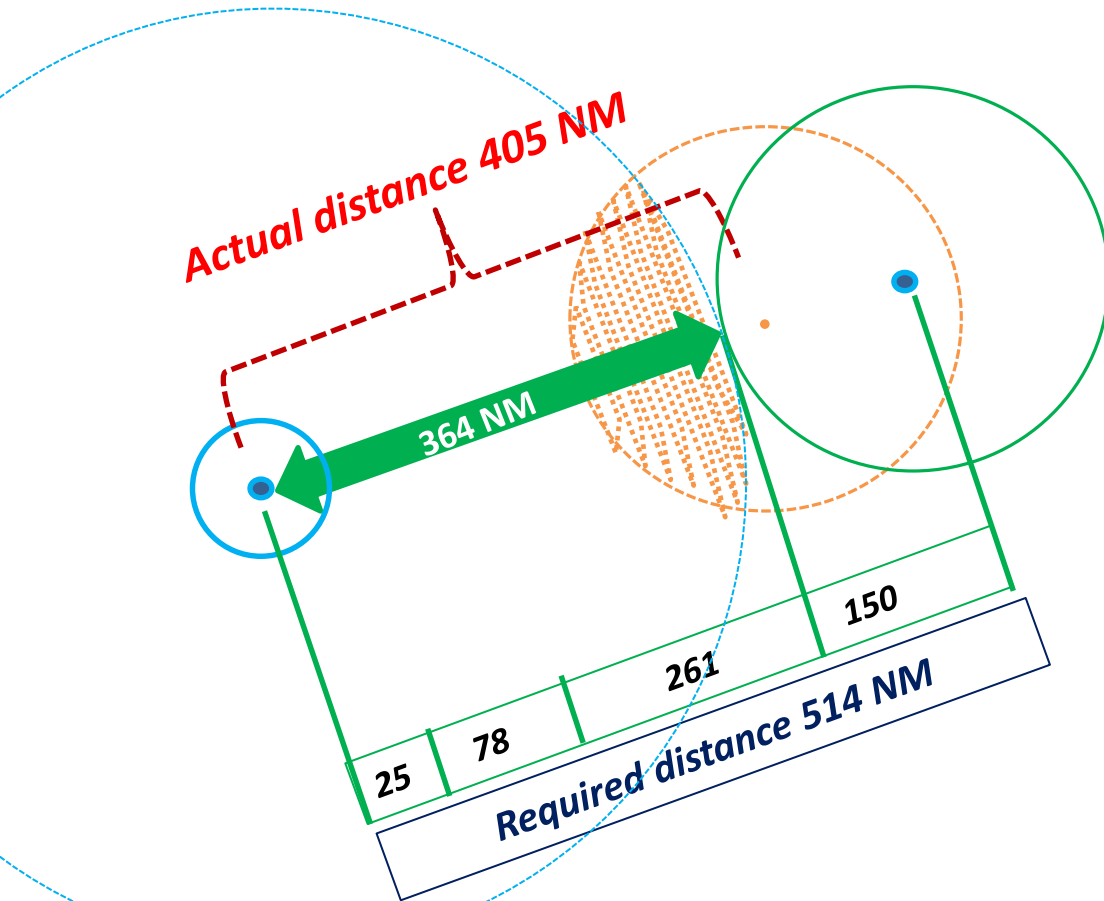




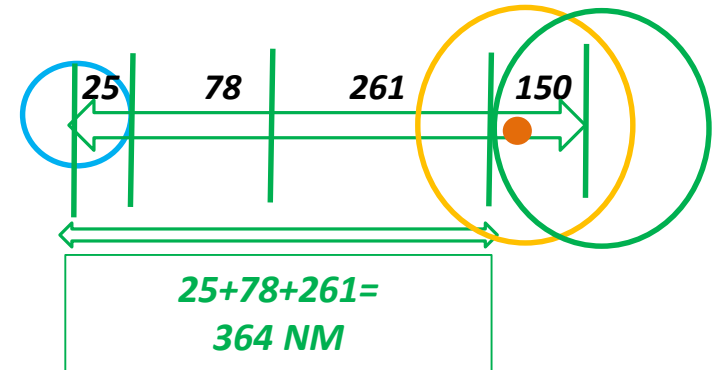
Exercise No. 2 – VHF module Compatibility test

– Example: Burkina Faso 119.700 MHz . cont

300222 is *Not* compatible with 301153



Required distance 514 NM



If 301153 is located here, It should be compatible

Location of the original 300222



Exercise No. 3 – VHF module Add Frequency

- Example: Add New TWR frequency to ICAO TEST AFI



Exercise No. 3 – VHF module Add Frequency

– Example: Add New TWR frequency to ICAO TEST AFI

1. Select Ghana 122.200 using Query

Global COM list 3 Active Find New or Mod or Del Freq. TEST FREQUENCY Calculation results

AFI COM list 3 RESET QUERY MAPPING Export COM list 3

total 10375 found 1

Query active. To return query click button "Active Find" To cancel query: click button "RESET QUERY"

Quick Find Reset

MOD Key Region Frequency Country Location Latitude Longitude DOC FIR Sector PolyID Extended Range F Cat Stat Remarks

301413	AFI	122.200	Ghana	GHA	TAKORADI	04D54'00"N	001D46'00"W	TWR C-25/40										
--------	-----	---------	-------	-----	----------	------------	-------------	-------------	--	--	--	--	--	--	--	--	--	--

2. Click New or Mod or Del Freq. And select "ADD frequency"

COM Data Base (COM LIST 3) NEW/MOD Frequency

Active Region ==AFI User State

COM list 3 synchronized Table of Polygons synchronized

New assignment Navigating to other windows keeps this frequency assignment as a draft frequency assignment in your local data base (COM list)

Save Draft or Modified Freq.

Find Frequency

Search range 117.999...136.976 MHz

Set frequency range START 118.000 MHz END 136.975 MHz

Select from Regional Frequency Allotment Plan AFI Select from Pool

Max. # of frequencies 10

START SEARCH

Searching

Frequencies found

Frequencies found	Margin co-freq	Margin adj-freq
FF1		
FF2		
FF3		
FF4		
FF5		
FF6		
FF7		
FF8		
FF9		
FF10		

FOUND 0 frequencies

Margin in NM

Selected frequency Allotted to

For efficient frequency assignment planning select the frequency with the smallest margin

Summary

Test results of the new or modified frequency assignment

Margin in NM

Date/time Key D Frequency Region Country Location Service Margin Result co-ch Margin Result ad

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The margin is the distance between the tested stations with which the required minimum separation distance is exceeded.

*** indicates that the frequency is not



Exercise No. 3 – VHF module Add Frequency – Example: Add New TWR frequency to ICAO TEST AFI

Add (or change) required information

COM Data Base (COM LIST 3) NEW/MOD Frequency

Active Region ==AFI User State

COM list 3 synchronized
Table of Polygons synchronized

New assignment
Navigating to other windows keeps this frequency assignment as a draft frequency assignment in your local data base (COM list)

Station

Region AFI Key D 302267 Cat NAT Channel spacing 25 kHz 8.33 kHz

Country Ghana Ctry GHA

Location TAKORADI

Latitude 04 D 54 ' 00 " N

Longitude 001 D 46 ' 00 " W

Frequency 118.000

Service TWR DOC TWR C-25/40 Drop down disabled 25 MOD Range (NM) 4000 MOD Height (feet) ER family Example: ER-BOT-01

Stat NOP

Required fields FIR SECTORNAME PolyID

Remarks TEST

TEST

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Summary

For efficient frequency assignment planning select the frequency with the smallest margin

Summary Co-frequency Adj. Frequency Test results of the new or modified frequency assignment

Date/time Key D Frequency Region Country Location Service Margin Result co-ch Margin Result ad

In this example,
Change the following information.

- Country: Ghana to **ICAO TEST AFI**
- Location: TAKORADI to **TEST**
- Cat: NAT to **ICAO**

COM Data Base (COM LIST 3) NEW/MOD Frequency FF-2020-8

Active Region ==AFI User State

COM list 3 synchronized
Table of Polygons synchronized

New assignment
Navigating to other windows keeps this frequency assignment as a draft frequency assignment in your local data base (COM list)

Station

Region AFI Key D 302267 Cat ICAO Channel spacing 25 kHz 8.33 kHz

Country ICAO TEST AFI Ctry ZZA

Location TEST

Latitude 04 D 54 ' 00 " N

Longitude 001 D 46 ' 00 " W

Frequency 118.000

Service TWR DOC TWR C-25/40 Drop down disabled 25 MOD Range (NM) 4000 MOD Height (feet) ER family Example: ER-BOT-01

Stat NOP

Required fields FIR SECTORNAME PolyID

Remarks TEST

TEST

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Summary

For efficient frequency assignment planning select the frequency with the smallest margin

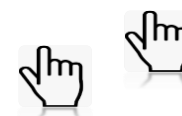
Summary Co-frequency Adj. Frequency Test results of the new or modified frequency assignment

Date/time Key D Frequency Region Country Location Service Margin Result co-ch Margin Result ad

Add the following information.

- Service: **TWR**
- Stat: **NOP**
- Remark: **TEST**

(No change to the latitude and longitude)





Exercise No. 3 – VHF module Add Frequency – Example: Add New TWR frequency to ICAO TEST AFI

Find compatible frequency for this new TWR ICAO TEST AFI

1. Select *TWR* and Max # *3* for search. Then 2. click “*Start Search*”

Frequency Finder

File Edit View Insert Format Records Scripts Window Help

COM Data Base (COM LIST 3) NEW/MOD Frequency FF-2020-6 Runtime

Active Region ==AFI User State Save Draft or Modified Freq.

COM list 3 synchronized New assignment Navigating to other windows keeps this frequency assignment as a draft frequency assignment in you local data base (COM list)

Station

Region AFI Key D 302267 Cat ICAO Channel spacing 25 kHz 8.33 kHz

Country ICAOTEST AFI Ctry ZZA

Location TEST

Latitude 04 D 54 ' 00 " N Longitude 001 D 46 ' 00 " W

Frequency 118.075

Service TWR Stat NOP

DOC TWR C-25/40 Drop down disabled MOD Range (NM) MOD Height (feet) Example: ER-BOT-01

Required fields FIR SECTORNAME PolyID

Remarks TEST Upload Status DN

TEST Test completed

Find Frequency

Search range 117.999...136.976 MHz

Set frequency range START 118.000 MHz END 136.975 MHz

Select from Regional Frequency Allotment Plan AFI TWR

Max. # of frequencies 3

START SEARCH

Search completed 118.075

FOUND 3 frequencies

Selected frequency Allotted to

Frequencies found	Margin co-freq	Margin adj-freq
FF1 118.025	***	302
FF2 118.050	***	***
FF3 118.075	***	100
FF4		
FF5		
FF6		
FF7		
FF8		
FF9		
FF10		

Margin in NM

For efficient frequency assignment planning select the frequency with the smallest margin

Summary

Test results of the new or modified frequency assignment

Date/time	Key	D	Frequency	Region	Country	Location	Service	Margin	Result co-ch	Margin Result ad
10/05/2022 11:24:14	302267	D	118.075	AFI	ICAO TEST AFI	TEST	TWR	***	Compatible	100 Compatible

The margin is the distance between the tested stations with which required minimum separate distance is exceeded.

*** indicates that the frequency is used within a range of 1050 NM from the station that is tested.

Frequency Finder found three compatible frequencies.



Exercise No. 3 – VHF module Add Frequency

– Example: Add New TWR frequency to ICAO TEST AFI

Select 118.025 from the outcome.

You can also plot interference all to see the result on the MAP.

File Edit View Insert Format Records Scripts Window Help

COM Data Base (COM LIST 3) NEW/MOD Frequency FF-2020-4 Runtime ST

Active Region ==AFI User State Save Draft or Modified Freq.

COM list 3 synchronized New assignment
Table of Polygons synchronized Navigating to other windows keeps this frequency assignment as a draft frequency assignment in you local data base (COM list)

Station

Region AFI Key D 302267 Cat ICAO Channel spacing 25 kHz
Country ICAO TEST AFI Ctry ZZA 8.33 kHz
Location TEST
Latitude 04 D 54 ' 00 " N
Longitude 001 D 46 ' 00 " W
Service TWR DOC
Stat NOP
Frequency 118.025
TWR C-25/40
25
4000
Drop down disabled
MOD Range (NM)
MOD Height (feet)
Required fields FIR SECTORNAME
Remarks TEST Upload Status DN
TEST The selected frequency is compatible. Test completed

Find Frequency

Search range 117.999...136.976 MHz
Set frequency range
START 118.000 MHz
END 136.975 MHz
Select from Regional Frequency Allotment Plan
AFI TWR
Max. # of frequencies 3
START SEARCH
Searching
Search completed
118.075
FOUND 3 frequencies
Selected frequency 118.025 Allotted

Frequencies found	Margin co-freq	Margin adj-freq
FF1 118.025	***	302
FF2	***	***
FF3	***	100
FF4		
FF5		
FF6		
FF7		
FF8		
FF9		
FF10		

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Summary

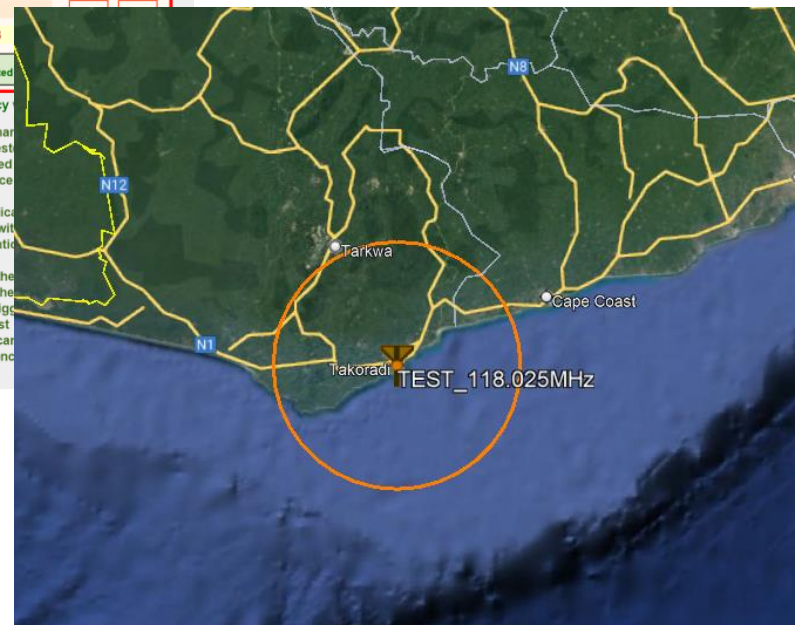
Summary Co-frequency Adj. Frequency Test results of the new or modified frequency assignment

Margin in NM

Date/time	Key	D	Frequency	Region	Country	Location	Service	Margin	Result co-ch	Margin Result adj
10/05/2022 11:32:19	302267	D	118.025	AFI	ICAO TEST AFI	TEST	TWR	***	Compatible	302 Compatible

Click the button TEST in the pane "Station" to view the calculation results if the fields are empty or the Key in the box Summary is different from the Key in the box Station

Print co-frequency Plot interference - All Print adj-frequency Plot interference - All





Exercise No. 3 – VHF module Add Frequency

– Example: Add New TWR frequency to ICAO TEST AFI

Save it as a registered frequency

You can also plot interference all to see the result on the MAP.

File Edit View Insert Format Records Scripts Window Help

COM Data Base (COM LIST 3) NEW/MOD Frequency PP-2020-6

Active Region ICAO TEST AFI User State

COM list 3 synchronized

Table of Polygons synchronized

New assignment

Navigating to other wind a draft frequency assign

Save Draft or Modified Freq.

Find Frequency

Press Esc to cancel running scripts. After using Esc: Close the program with Ctrl-W and re-start the program manually

Station

Region AFI Key D 302267 Cat ICAO Char

Country ICAO TEST AFI Ctry ZZA

Location TEST

Latitude 04D 54' 00" N

Longitude 001 D 46' 00" W

Frequency 118.025

Service TWR

Stat NOP

DOC

Drop down disabled

MOD Range (NM)

MOD Height (feet)

ER family

Example: ER-BOT-01

PolyID

Required fields

FIR SECTORNAME

Remarks TEST

Upload Status DN

TEST

The selected frequency is compatible. Test completed

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Summary

Co-frequency Adj. Frequency

Test results of the new or modified frequency assignment

Date/time	Key	D	Frequency	Region	Country	Location	Service	Margin	Result co-ch	Margin Result ad
10/05/2022 11:32:19	302267	D	118.025	AFI	ICAOTEST AFI	TEST	TWR	***	Compatible	302 Compatible

Click the button TEST in the pane "Station" to view the calculation results if the fields are empty or the Key in the box Summary is different from the Key in the box Station

Print co-frequency Plot interference - All

Print adj-frequency Plot interference - All

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R	302227	AFI	118.100	ICAOTEST AFI	ZZA	Reykjavik 2	64D07'48" N 021D55'57" W	ACC-L C-155/250			ICAO	
R	302025	AFI	127.850	ICAOTEST AFI	ZZA	Sornfelli	62D04'06" N 006D58'00" W	A/G C-250/450			ER-ZZA-1	ICAO
R	302196	AFI	119.825	ICAOTEST AFI	ZZA	Sornfelli	62D04'06" N 006D58'00" W	AS C-5/1			ICAO	
N	R	302267	AFI	118.025	ICAOTEST AFI	TEST	04D54'00" N 001D46'00" W	TWR C-25/40			ICAO	NOP TEST
R	301977	AFI	126.550	ICAOTEST AFI	ZZA	Vaðlaheiði	65D44'56" N 018D00'04" W	A/G C-222/450			ER-ZZA-2	ICAO
R	301989	AFI	127.850	ICAOTEST AFI	ZZA	Þorbjörn	63D51'51" N 022D26'21" W	A/G C-260/450			ER-ZZA-1	ICAO



Export Submissions

The registered frequency needs to report to Regional officer

Frequency Finder

File Edit View Insert Format Records Scripts Window Help

FF-2020-6 Runtime 16.0.6 Active Region ==AFI COM list 3 for VHF COM air/ground frequency assignments in the band 117.975 - 137 MHz User Manual

Start Home Global COM list 3 Active Find New or Mod or Del Freq. TEST FREQUENCY Calculation results

AFI COM list 3 RESET QUERY MAPPING Export COM list 3

FM DU D total found 10376 1 Query

Quick Find Reset

MOD Key Region Frequency Country

N ? AFI 118.025 ICAOTEST AFI ZZA TEST

1

Special Functions - Export submissions -

Click "Export submission" to report New, Mod or Del frequency to regional officer

Through a dialogue box, the State (user) can consult the excel file prior submission to the ICAO Regional Office (RO);

2

<110> Open Excel file

An Excel file will be created containing your submissions, which you can attach later to an email message to be sent to the Regional Office.

Click "Open" to look at the Excel file, Click "Cancel" to cancel.

Note: From this folder, attach the file to your email the file you want to submit.

Cancel Open

For the workshop please email to Fabiola Chouha and not the RO so that we can then delete the Tested entries from your local database

This PC > Windows (C:) > frequencyfinder > SaveSubmissions

Name	Date modified	Type	Size
VHFCOM ZZA 10-05-2022 114104 AM.xlsx	10/05/2022 11:43 AM	Microsoft Excel Work...	5 KB
VHFCOM ZZA 10-05-2021 102404 AM.xlsx	10/05/2021 1:02 PM	Microsoft Excel Work...	7 KB

3. Attach the excel file to your e-mail and send it to the Regional officer (for the workshop please send to fchouha@icao.int) as it is not real data