



Frequency Finder

Easy Reference for Exercise

ACAO/ICAO Frequency Management Workshop
Casablanca, Morocco, 6-10 June 2022

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Prep for FF operation

1. Download Runtime version of the Frequency Finder

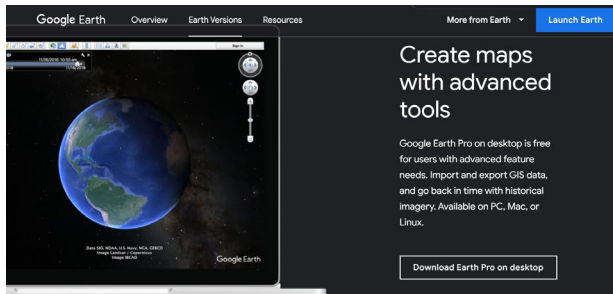
- **Download** from the FSMP website the zip-file ***FF2022.01R***
www.icao.int/safety/fsmp/documents/frequencyfinder
- Remove earlier version of Frequency Finder, if any.
- **Unzip and run the installer file FF2022.01R.exe**
- Select to create desktop icon



Prep for FF operation

2. Download and install google Earth

<https://www.google.com/earth/>



The following settings in Google Earth are recommended:

Tools -> Options

-> Navigation -> set Fly-To Speed to Fast

-> Navigation -> Click "Do not automatically tilt while zooming"

-> General -> click KML Error Handling: Silently accept all unrecognized data.

3. More details can be found 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



| ICAO

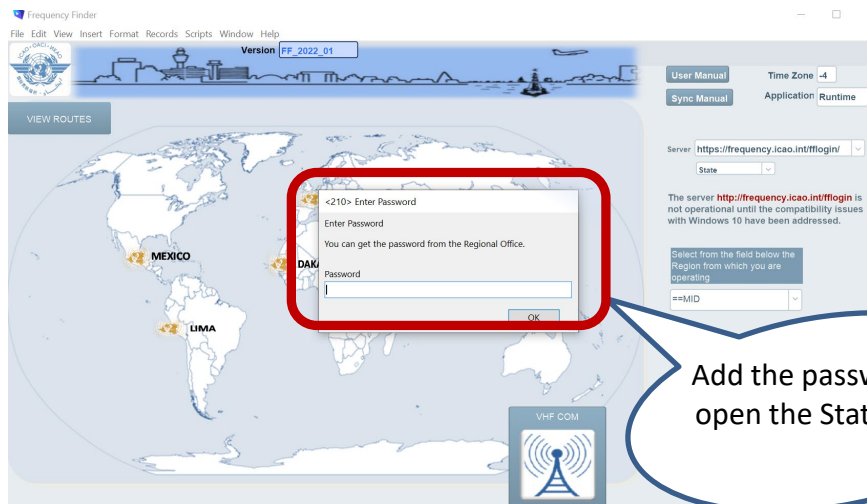
RECONNECTING THE WORLD



Exercises- Start page/Home page



Open Frequency Finder - Start page



You might get this message.






Start page and the selection of VHF-COM module

File Edit View Insert Format Records Scripts Window Help

Version **FF_2022_01**

VIEW ROUTES



Click "VHF COM"

Start page for the frequency assignment planning for CNS systems

User Manual
Sync Manual

Time Zone -4
Application Runtime

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

==MID

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

VHF COM

VHF NAV

SSR II

You can select from COM, NAV, SSR modules



Start page and VHF Home page

Start



VIEW ROUTES



① Click "VHF COM"



Start page for the frequency assignment planning for CNS systems

Sync Manual

Application State

Server User

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

② Click "MID"



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

Master copy Fabiola 21 January 2022
Updated 24 January 2022



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RECONNECTING THE WORLD



Home page VHF COM

Frequency Finder

File Edit View Insert Format Records Scripts Window Help

Start

VHF COM air/ground communication systems 117.975 - 137 MHz

User Manual
Sync Manual
Check Sync

Version: FF_2022_01

User:

Application: Runtime

Connection status: Connected

VIEW ROUTES

Time Zone: -4

Active Region: ==MID

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

Download

Go to COM list 3:

AFI

APAC

CAR

EUR

MID Active Region

SAM

GLOBAL

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

Check Sync

Download COM: 27-05-2022 6:37:46 PM

Sync status COM: Global COM list 3 modified

Recent downloads from Global COM list 3 and Global table of polygons

Download ICAOFIR: 05/07/2018 0:32:24

Download Poly Safire: 13/12/2019 2:33:26 AM

Sync status Poly: Table of Polygons synchronized

Recent uploads to Global COM

COM AFI synchronized	11/05/2022 1:22:29 PM	UTC
COM list 3 APAC modified	30/05/2022 2:00:51 AM	UTC
COM CAR synchronized	08/11/2021 7:09:12 PM	UTC
COM EUR synchronized	10/12/2019 6:45:05 PM	UTC
COM MID synchronized	14/04/2022 10:38:55 AM	UTC
COM SAM synchronized	16/02/2022 10:44:10 PM	UTC
COM EUR/NAT synchronized	10/12/2019 6:45:05 PM	UTC
COM EUR/SAFIRE synchronized	10/12/2019 6:45:05 PM	UTC

Summary COM:

30/05/2022 2:00:51 AM

Polygons Safire synchronized: 13/12/2019 2:17:08 AM UTC

All Polygons Safire reloaded: 13/12/2019 2:17:08 AM UTC

LOCAL BACK UP

Recover from local back-up

dd/mm/yyyy

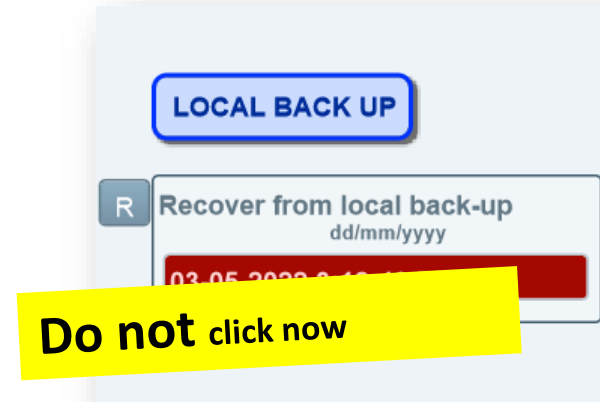
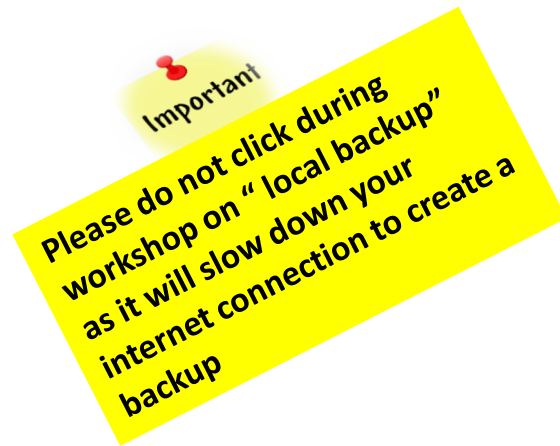
27-05-2022 2:57:59 PM



Home page VHF COM list 3

Back-up and recovery

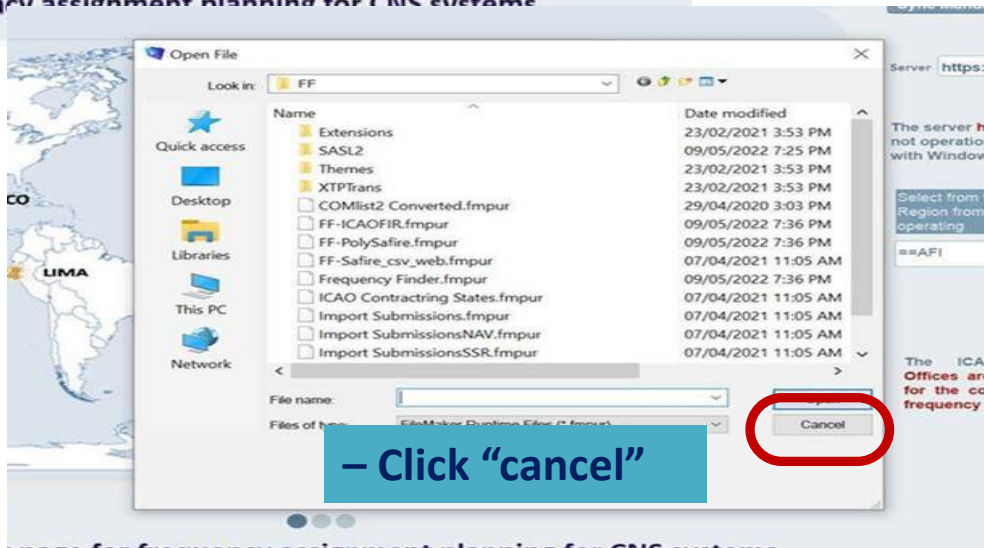
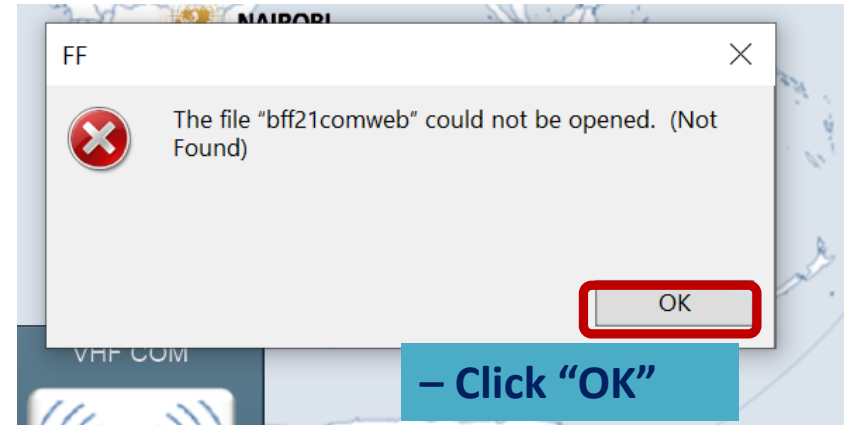
- Click “LOCAL BACK UP” to create a backup
- Click “R” to recover from local backup
- See user manual 4.4.4.2 to recover from a back-up created with an earlier version of Frequency Finder



RECONNECTING THE WORLD



You might get following messages below.



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



Exercises- Integrity Check



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RECONNECTING THE WORLD



Start page and VHF Home page

File Edit View Insert Format Records Scripts Tools Window Help

Start

VHF COM air/ground communication systems 117.975 - 137 MHz

User Manual
Sync Manual
Check Sync

Version User Application State Connection status Time Zone

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

Download

Go to COM list 3:

AFI
APAC
CAR
EUR
MID
SAM
GLOBAL

①

Active Region

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

Check Sync

Download COM 11/05/2022 1:22:29 PM

Sync status COM Global COM list 3 modified

Recent downloads from Global COM list 3 and Global table of polygons

Download ICAOFIR 05/07/2018 0:32:24

Download Poly Safire 13/12/2019 2:33:26 AM

Sync status Poly Table of Polygons synchronized

<2B> Update COM list 3

The global COM list 3 was modified.

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

Click Download

Cancel Download

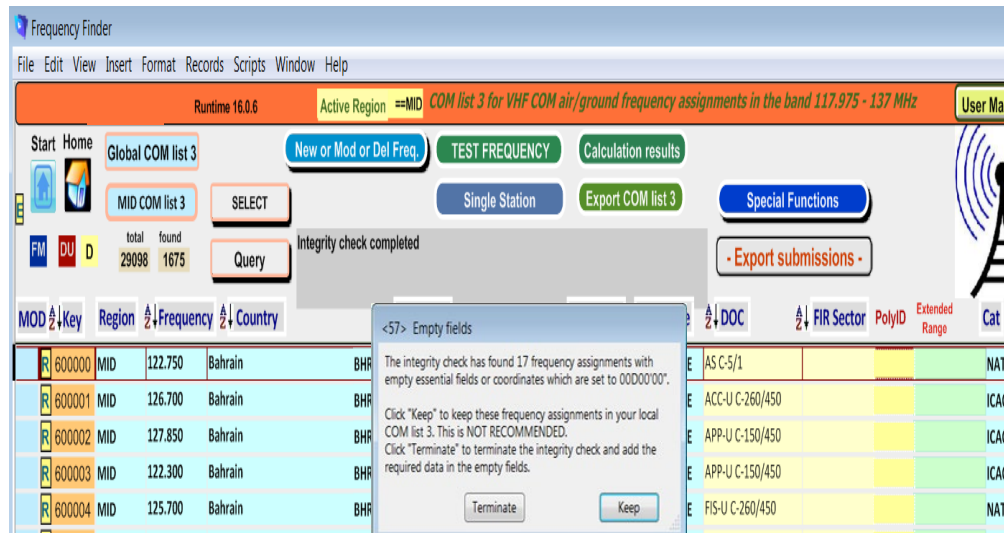
LOCAL BACK UP

R Recover from local back-up
dd/mm/yyyy
03-05-2022 3:18:40 PM

All Polygons Safire reloaded: 13/12/2019 2:17:08 AM



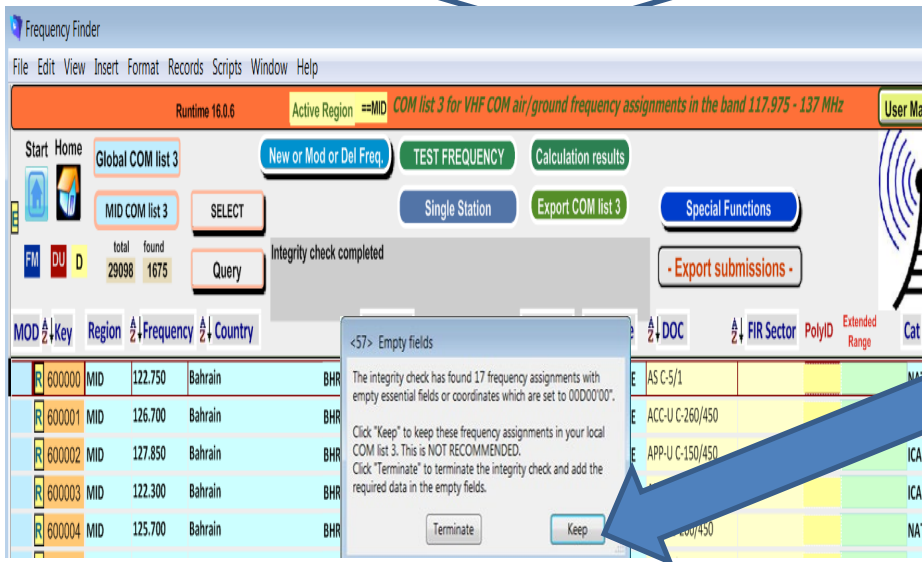
Integrity Check



Integrity Check – Empty Essential Field

Click “**Keep**” to continue integrity check

*If you have data with you and can correct some of them, then Click “**Terminate**” to correct data*



Integrity Check – Outside the range

Click “**Keep**” to continue integrity check

*If you have data with you and can correct some of them, then Click “**Terminate**” to correct data*



Integrity Check

Runtime 16.0.6 Active Region ==MID 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

MID COM list 3 RESET FIND Single Station Export COM list 3 Integrity check - Restart

total found 29098 1 Query Integrity check running. - Export submissions -

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

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC	FIR Sector	PolyID	Extended Range	Cat	Stat
RN	D	603138	MID	119.000	ICAO TEST MID	ZZM	TEST BAHRAIN	26D16'00" N 05D038'00" E	ACC-U C-200/450				

<218> Draft records found

The local COM list 3 contains draft records, you can:

Click "Convert" to convert these record into registered records as necessary.

Click "Continue" to return the global COM list 3.

Convert Continue

Integrity Check – Draft Records

Click "**Continue**" to continue integrity check

If you finished drafting and believe you can convert/delete them as registered/deleted frequency, then you can click "convert" to correct data

Integrity check is completed!

Frequency Finder

File Edit View Insert Format Records Scripts Window Help

Runtime 16.0.6Active Region ==MIDCOM list 3 for VHF COM air/ground frequency assignments in the band

Start Home

Global COM list 3

New or Mod or Del Freq

TEST FREQUENCY

Calculation results

FM

DU

D

MID COM list 3

SELECT

total 29098found 1675

Query

Integrity check completed

Single Station

Export COM list 3

Special Fu

- Export sub

MOD

Key

Region

Frequency

Country

Location

Latitude

Longitude

DOC

R

600000

MID

122.750

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

AS C-5/1

R

600001

MID

126.700

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

ACC-U C-260/450

R

600002

MID

127.850

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

APP-U C-150/450

R

600003

MID

122.300

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

APP-U C-150/450

R

600004

MID

125.700

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

FIS-U C-260/450

R

600005

MID

122.450

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

AS C-5/1

R

600006

MID

127.200

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

ATIS B-260/450

R

600007

MID

121.900

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

AS C-5/1

R

600008

MID

121.850

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

AS C-5/1

R

600009

MID

119.100

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

TWR C-25/40

R

600010

MID

118.500

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

TWR C-25/40

R

600011

MID

128.800

Bahrain

BHRBAHRAIN

26D16'00" N 05D038'00" E

VOLMET B-260/450

Now you are in the COM List 3



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RECONNECTING THE WORLD



Exercises- Query

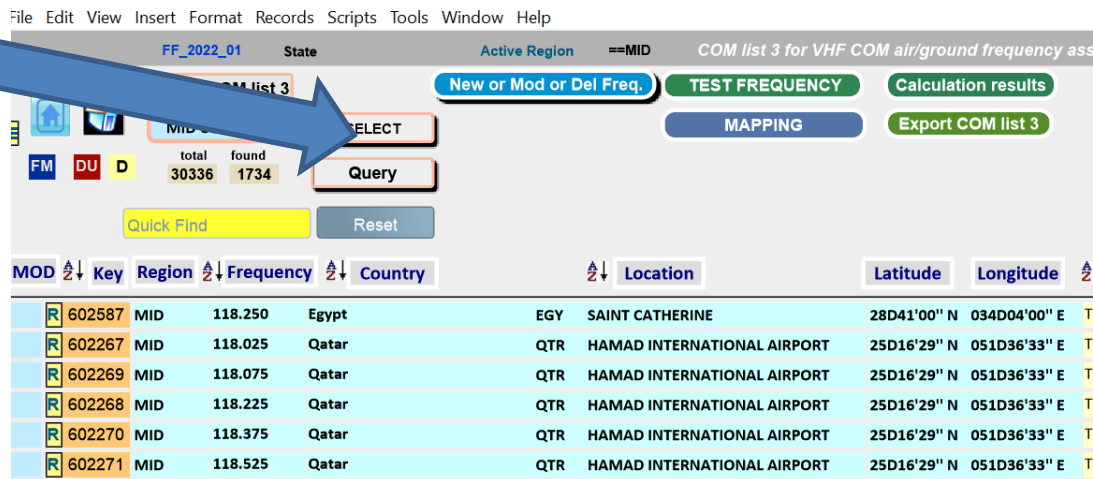


Integrity check is completed!

Now you are in
the Regional
COM List 3

Click **“Query”**

Query



File Edit View Insert Format Records Scripts Tools Window Help

FF_2022_01 State Active Region ==MID COM list 3 for VHF COM air/ground frequency ass

COM list 3

New or Mod or Del Freq. TEST FREQUENCY Calculation results

MAPPING Export COM list 3

SELECT

Query

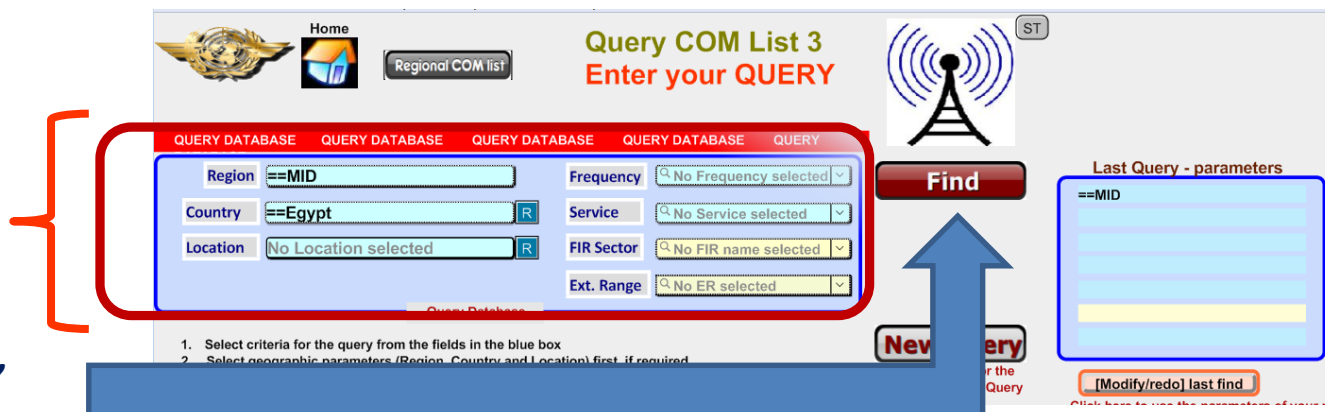
Quick Find Reset

MOD Key Region Frequency Country Location Latitude Longitude

602587	MID	118.250	Egypt	EGY	SAINT CATHERINE	28D41'00" N	034D04'00" E	T
602267	MID	118.025	Qatar	QTR	HAMAD INTERNATIONAL AIRPORT	25D16'29" N	051D36'33" E	T
602269	MID	118.075	Qatar	QTR	HAMAD INTERNATIONAL AIRPORT	25D16'29" N	051D36'33" E	T
602268	MID	118.225	Qatar	QTR	HAMAD INTERNATIONAL AIRPORT	25D16'29" N	051D36'33" E	T
602270	MID	118.375	Qatar	QTR	HAMAD INTERNATIONAL AIRPORT	25D16'29" N	051D36'33" E	T
602271	MID	118.525	Qatar	QTR	HAMAD INTERNATIONAL AIRPORT	25D16'29" N	051D36'33" E	T

Select **“information”**
required for your
investigation

Click **“Find”**



Home Regional COM list

Query COM List 3 Enter your QUERY

QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY

Region ==MID Frequency No Frequency selected

Country ==Egypt Service No Service selected

Location No Location selected FIR Sector No FIR name selected

Ext. Range No ER selected

Find

Last Query - parameters

==MID

New Query

[Modify/re-do] last find

1. Select criteria for the query from the fields in the blue box
2. Select geographic parameters (Region, Country and Location) first, if required

Then you will see the outcome of your Query



Exercises- Query

1. Exercise 1 - Query database for MID
 - United Arab Emirates– MINHAD Airport – 122.500
2. Re-do and modify query
 - United Arab Emirates– MINHAD Airport – TWR
3. Go back to MID COM List 3 and return results of last Query
4. Find all frequency assignments for the service TWR in your country.
5. Select frequencies (select several frequencies)
 - Select Egypt ABU RAWASH - 123.050, 125.300, 126.200



Exercises- Test frequency



Exercises- Test frequency

1. Perform compatibility test – single frequency
 - Query: Jordan, Frequency 129.075
 - Click test frequency and single frequency
2. Perform compatibility test - found frequencies
 - Select Jordan- AMMAN ALIA INT– 128.900 and 128.950
 - Click Add Records
 - Then click Test frequencies and found frequencies
3. Perform compatibility test in your country.

For example, find all frequency assignments for the service TWR in your country and perform compatibility test.



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RECONNECTING THE WORLD



Exercises

Test Frequency & Understand the result



Test Frequency (Case 1)

– Example: Yemen 124.700 MHz

Frequency Finder

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 ==MID Frequency 124.700
Country ==Yemen Service No Service selected
Location No Location selected FIR Sector No FIR name selected
Ext. Range No ER selected

Find

Last Query - parameters
==MID
==Yemen
124.700

[Modify/redo] last 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 or Service or FIR Sector or Extended Range, if required
Note: combinations of frequency, service and sector and Extended Range are not permitted since these may result in non-matching find criteria.
4. Select only Frequency OR Service OR FIR Sector OR Extended Range
5. Press FIND

Use this window to only enter criteria for your query

VHF-COM VHF-COM CNS/AIRS VHF COM Frequency Assignment Planning VHF-COM VHF-COM Frequency Finder has been activated for the Region ==MID

① Click “Query”

② Select State: **Yemen**,
Frequency: **124.700 MHz**

③ Click “Find”

Frequency Finder

File Edit View Insert Format Records Scripts Window Help

FF_2022_01 Runtime Active Region ==MID

Start Home Global COM list 3 Active Find New or Mod or Del Freq. TEST FREQUENCY Calculation results
MID COM list 3 RESET QUERY MAPPING Export COM list 3
FM DU D total found
30366 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 Exten Ran

602690	MID	124.700	Yemen	YEM	HODEIDAH	14D45'00" N	042D59'00" E	APP-L C-50/120		
--------	-----	---------	-------	-----	----------	-------------	--------------	----------------	--	--

Frequency Finder found the
124.700 MHz in Yemen
(Key codes 602690)

Select Key 602690

④ Click “Test Frequency”

⑤ Select “Single frequency”



Test Frequency (Case 1) – Example: Yemen 124.700 MHz

File Edit View Insert Format Records Scripts Tools Window Help

FF_2022_01 State Active Region ==MID COM list 3 for VHF COM air/ground frequency assignments in the

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

MID COM list 3 RESET QUERY MAPPING Export COM list 3

total found 30336 1 Query Compatibility test[s] running.

Quick Find Reset

MOD Key Region Frequency Country Location Latitude Longitude DOC

602176	MID	132.450	Bahrain	BHR	BAHRAIN	26D17'00" N	050D38'00" E	ACC-U C-260/450
--------	-----	---------	---------	-----	---------	-------------	--------------	-----------------

Present results of compatibility tests on a map

Click "Map" to plot the results of compatibility tests on a map.
Click "No Map" to continue without plotting the results of the compatibility tests on a map.
Click "Cancel" to cancel the compatibility tests.

Cancel No Map Map

⑥ Select **"Map"** if you want to see the result on Map as well

COM Data Base (COM LIST) Summary Calculations

Active Region ==MID 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.
04_Jun_2022 18:31:15	602690	R	124.700	MID	Yemen	HODEIDAH	APP-L	-101	Not compatible	---	Compatible

⑦ Summary Calculation is displayed

COM Data Base (COM LIST 3) Summary Calculations

Active Region ==MID Regional COM list Delete all records Redo calculations Co-frequency details Adj. frequency details

Date	Key	D	Frequency	Region	Country	Location	Service	Margin	Result	Margin	Result Adj. freq.
04_Jun_2022 18:31:15	602690	R	124.700	MID	Yemen	HODEIDAH	APP-L	-101	Not compatible	---	Compatible

⑧ Click **"Co-Frequency details"** to view the most recent test result



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RECONNECTING THE WORLD



Test Frequency (Case 1) – Example: Yemen 124.700 MHz

Result indicated :

*602690 is **Not compatible** with 602371*

Frequency Finder

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 8 / 16 records Show all records Go to Adj channel calc Go to Summary calc.

Test for the frequency

Key	R	Frequency	Range	Height	Radio Horizon	Sectorname	Latitude	Longitude	Service
1	R	602690	124.700	50	12000	135	14D45'00" N	04D59'00" E	APP-L
Region	MID	Country	Yemen	Location	HODEIDAH				DOC APP-L C-50/120
Not compatible with record #2									
Margin -101 NM Not compatible									
APP Lower Circular									
Plot coverage									

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

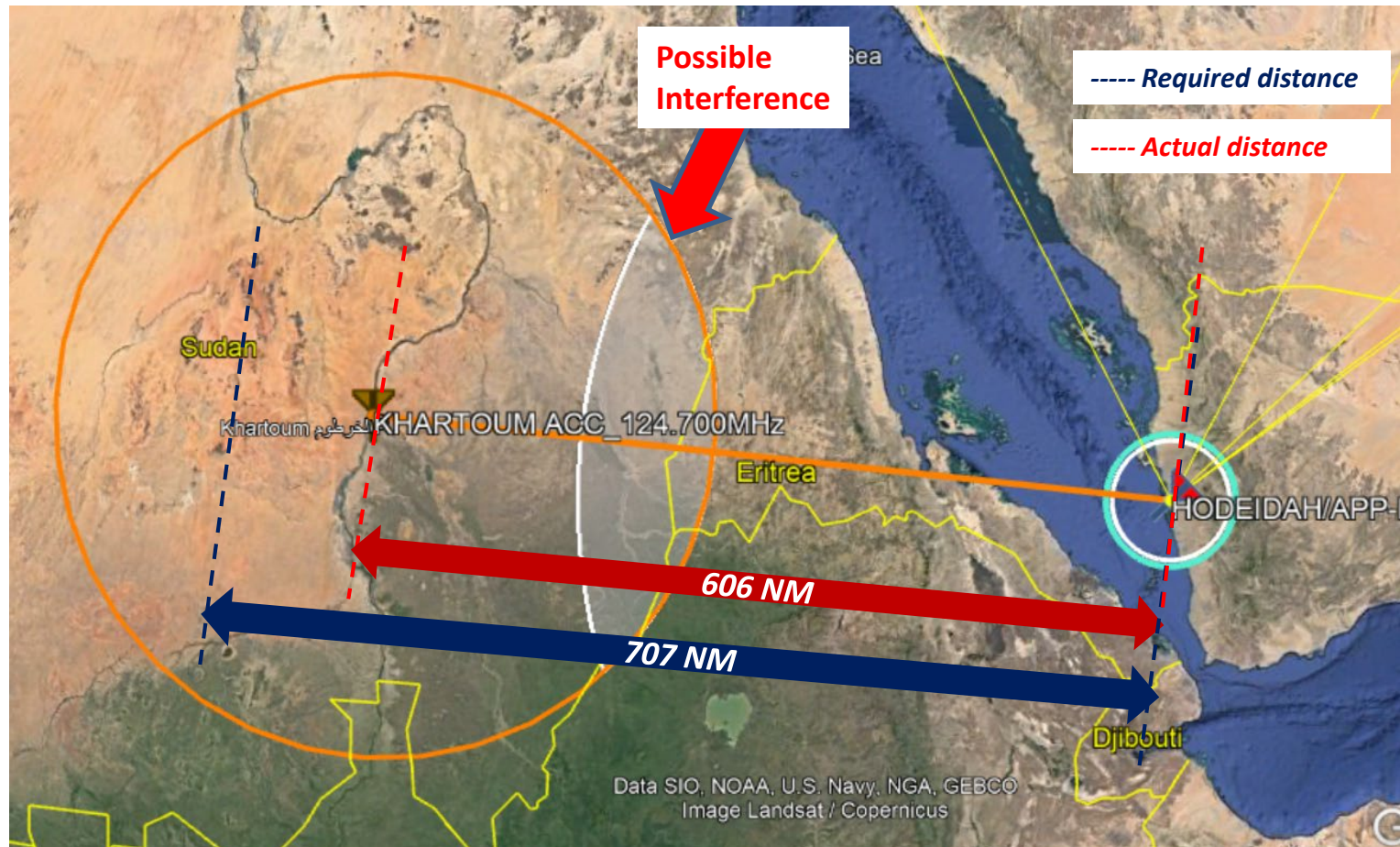
Compatibility calculations between unprotected services are only shown for information.

Key	R	Frequency	Range	Height	Radio Horizon	Sectorname	Latitude	Longitude	Service
2	R	602371	124.700	261	45000	261	15D35'00" N	03D33'00" E	ACC-U
Region	MID	Country	Sudan	Location	KHARTOUM ACC				DOC ACC-U C-260/450
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 606 NM Required distance 707 NM									
Margin -101 NM Not compatible									
ACC Upper Circular									
Plot interference									

RECONNECTING THE WORLD

Compatibility test result (Case 1)

Result indicated : 602690 is **Not compatible with 602371**

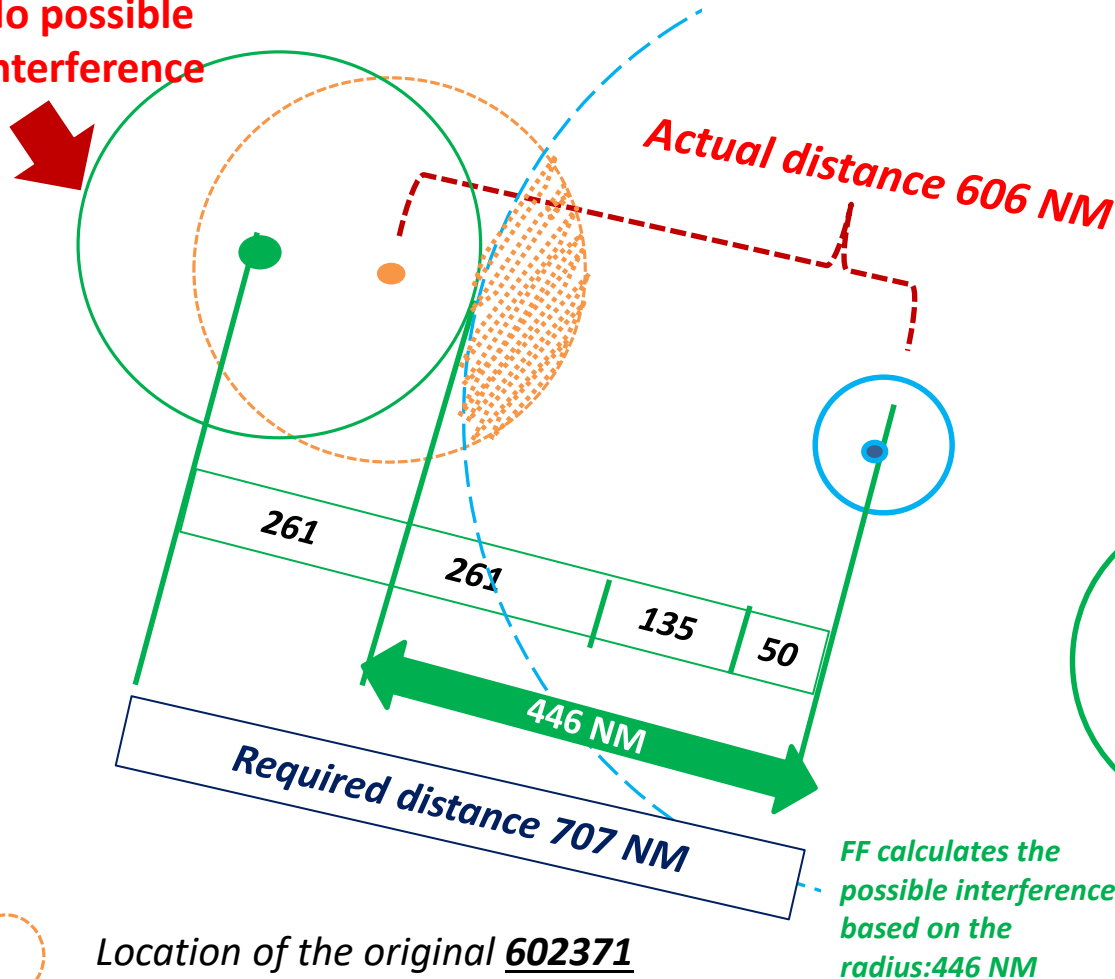




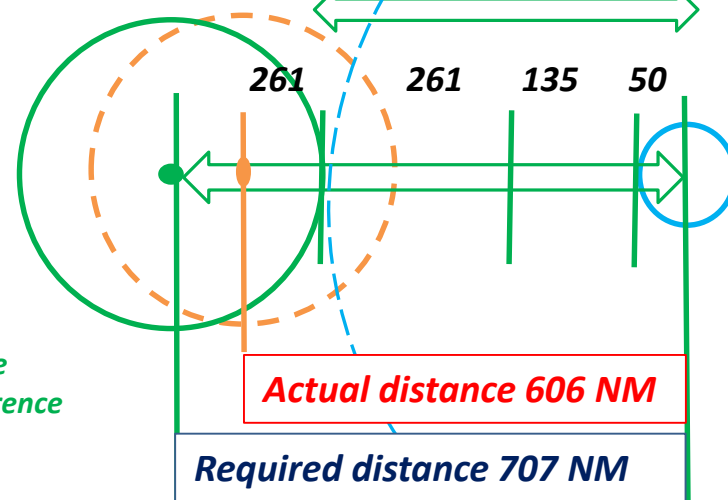
Compatibility test result (Case 1) cont.

Result indicated : 602690 is **Not compatible with 602371**

No possible
Interference



$$261 + 135 + 50 = 446 \text{ NM}$$



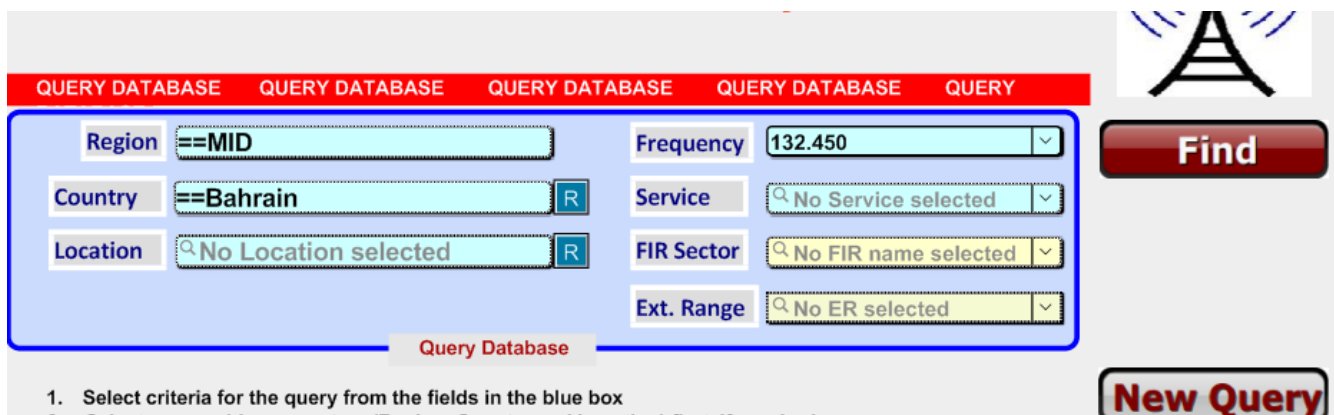
Location of the original **602371**

If 602371 is located here, It should be compatible



Test Frequency (Case 2)

– Example: Bahrain 132.450 Mhz



QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY

Region ==MID Frequency 132.450

Country ==Bahrain Service No Service selected

Location No Location selected FIR Sector No FIR name selected

Ext. Range No ER selected

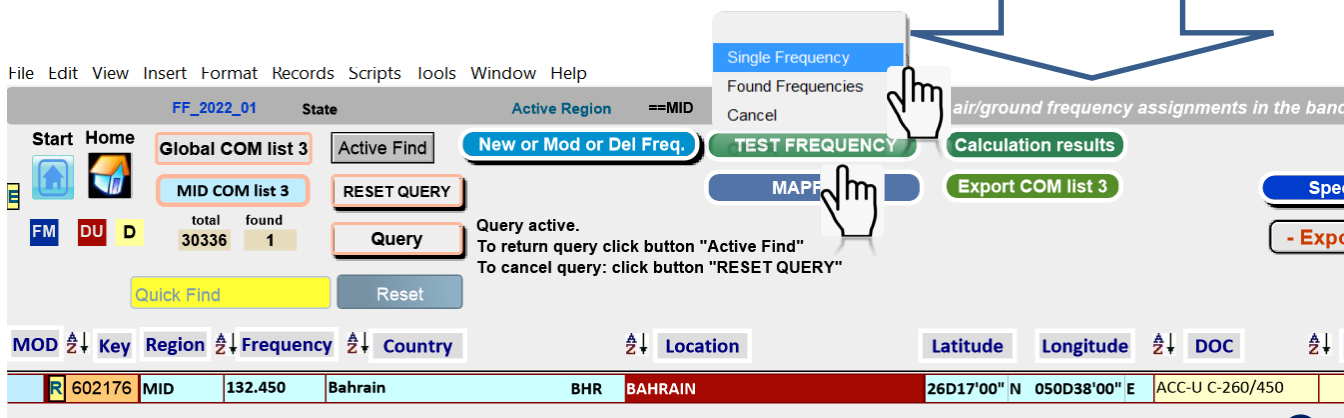
Find

Query Database

1. Select criteria for the query from the fields in the blue box

New Query

- ① Click **“Query”**
- ② Select State: **Bahrain**, Frequency: **132.450 Mhz**
- ③ Click **“Find”**



File Edit View Insert Format Records Scripts Tools Window Help

FF_2022_01 State Active Region ==MID

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

MID COM list 3 RESET QUERY MAP Export COM list 3

FM DU D total found 30336 1 Query 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
R	602176	MID	132.450	Bahrain	BHR	BAHRAIN	26D17'00" N 050D38'00" E	ACC-U C-260/450

Frequency Finder found the 132.450 MHz in Bahrain (Key codes 602176)

Select Key 602176

- ④ Click **“Test Frequency”**
- ⑤ Select **“Single frequency”**





Test Frequency (Case 2)

– Example: Bahrain 132.450 MHz

File Edit View Insert Format Records Scripts Tools Window Help

FF_2022_01 State Active Region ==MID COM list 3 for VHF COM air/ground frequency assignments in the

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

MID COM list 3 RESET QUERY MAPPING Export COM list 3

total found 30336 1 Query Compatibility test[s] running.

Quick Find Reset

MOD Key Region Frequency Country Location Latitude Longitude DOC

602176	MID	132.450	Bahrain	BHR	BAHRAIN	26D17'00" N	050D38'00" E	ACC-U C-260/450
--------	-----	---------	---------	-----	---------	-------------	--------------	-----------------

Present results of compatibility tests on a map

Click "Map" to plot the results of compatibility tests on a map.
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Cancel No Map Map

⑥ Select **"Map"** if you want to see the result on Map as well

COM Data Base (COM LIST 3) Summary Calculations

Active Region ==MID 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.
13_Aug_2020 18:41:28	602176	R	132.450	MID	Bahrain	BAHRAIN	ACC-U	-208	Not compatible	235	Compatible

⑦ Summary Calculation is displayed

COM Data Base (COM LIST 3) Summary Calculations

Active Region ==MID 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.
13_Aug_2020 18:41:28	602176	R	132.450	MID	Bahrain	BAHRAIN	ACC-U	-208	Not compatible	235	Compatible

⑧ Click **"Co-Frequency details"** to view the most recent test result



Test Frequency (Case 2) – Example: Bahrain 132.450 MHz

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 ST

Regional COM list 4 / 6 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

Key	R	Frequency	Range	Height	Radio Horizon	Sectorname	Latitude	Longitude	Service
1	R 602176	Frequency 132.450	Range 260	Height 45000	Radio Horizon 261	Sectorname	Latitude 26D17'00" N	Longitude 050D38'00" E	Service ACC-U
Region	MID	Country Bahrain			Location BAHRAIN				DOC ACC-U C-260/450
Not compatible with record #2 Margin -208 NM Not compatible ACC Upper 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	R 602250	Frequency 132.450	Range 260	Height 45000	Radio Horizon 261	Sectorname	Latitude 31D43'21" N	Longitude 035D59'36" E	Service ACC-U
Region	MID	Country Jordan			Location AMMAN ACC				DOC ACC-U C-260/450
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 834 NM Required distance 1042 NM Margin -208 NM Not compatible ACC Upper Circular Ext. range Plot interference									
3	R 41235	Frequency 132.450	Range 60	Height 15000	Radio Horizon 151	Sectorname	Latitude 37D56'00" N	Longitude 041D07'00" E	Service A/G
Region	EUR	Country Turkey			Location BATMAN BATMAN				DOC A/G C-60/150
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 849 NM Required distance 732 NM Margin 117 NM Compatible Circular Ext. range Plot interference									
4	R 31338	Frequency 132.450	Range 25	Height 6000	Radio Horizon 95	Sectorname	Latitude 32D58'50" N	Longitude 035D34'15" E	Service ATIS
Region	EUR	Country Israel			Location ROSH PINA				DOC ATIS B-25/60
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 881 NM Required distance 641 NM Margin 240 NM Compatible Automatic Terminal Information Service Circular; Broadcast Ext. range Plot interference									
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.									

Result indicated :
602176 is Not compatible with 602250

Extracted Example Key 602176 not compatible 602250

Test for the frequency not shown

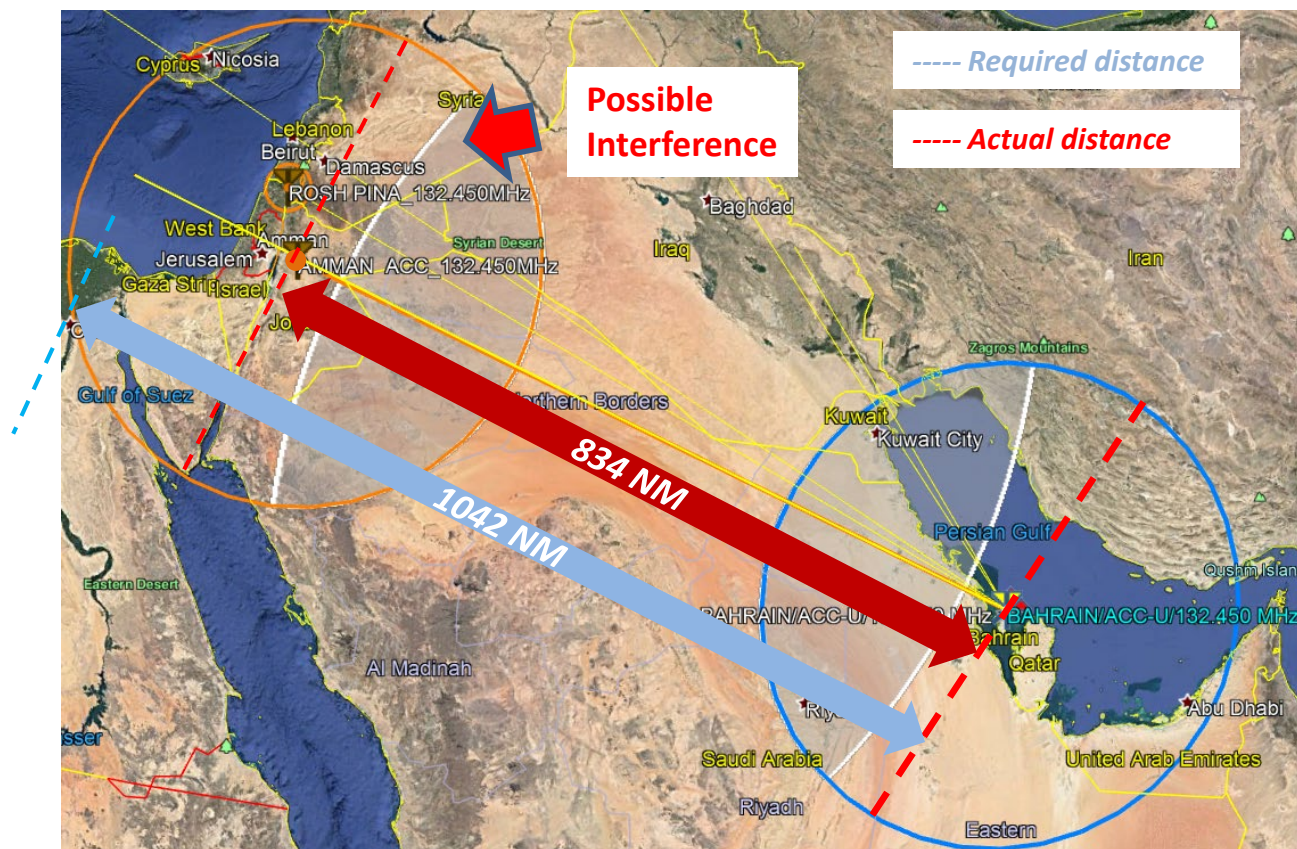
Key	R	Frequency	Range	Height	Radio Horizon	Sectorname	Latitude	Longitude	Service
1	R 602176	Frequency 132.450	Range 260	Height 45000	Radio Horizon 261	Sectorname	Latitude 26D17'00" N	Longitude 050D38'00" E	Service ACC-U
Region	MID	Country Bahrain			Location BAHRAIN				DOC ACC-U C-260/450
Not compatible with record #2 Margin -208 NM Not compatible ACC Upper 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	R 602250	Frequency 132.450	Range 260	Height 45000	Radio Horizon 261	Sectorname	Latitude 31D43'21" N	Longitude 035D59'36" E	Service ACC-U
Region	MID	Country Jordan			Location AMMAN ACC				DOC ACC-U C-260/450
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 834 NM Required distance 1042 NM Margin -208 NM Not compatible ACC Upper Circular Ext. range Plot interference									



Compatibility test result (Case 2)

602176 is Not compatible with **602250**

– Example: Bahrain 132.450 MHz



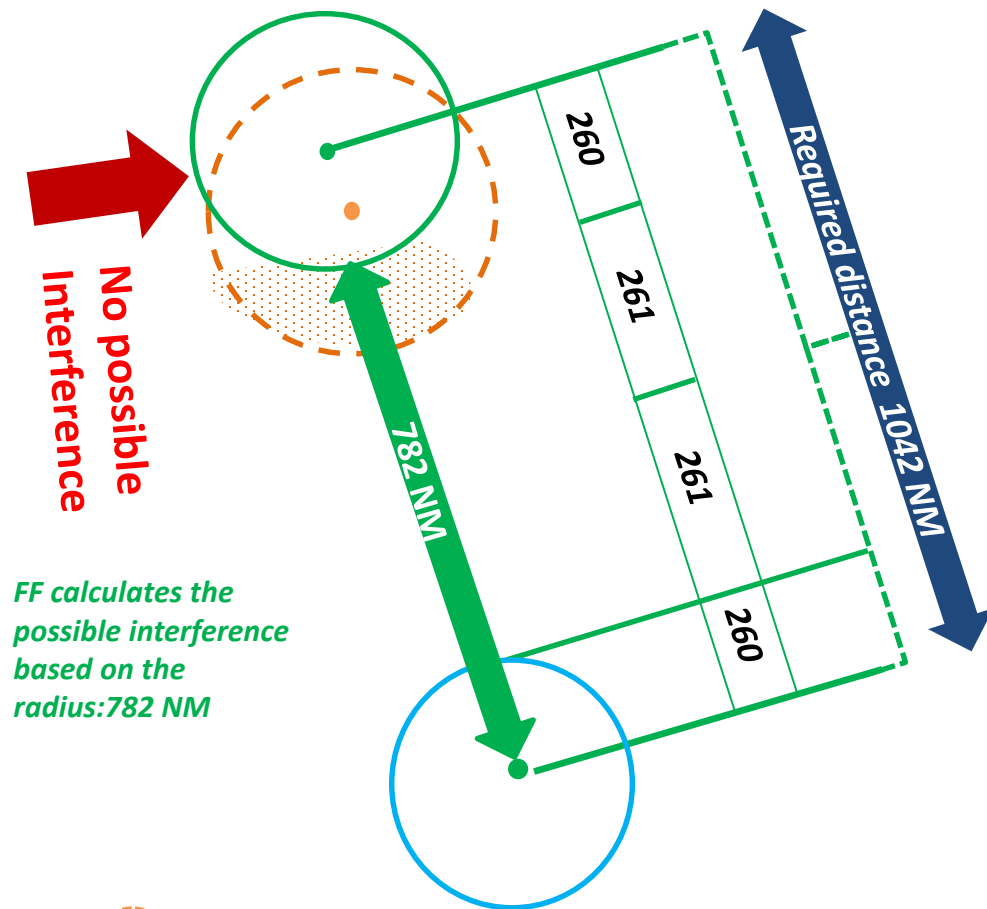
Result indicated : Key 602176 not compatible with **602250**



Compatibility test result Cont. (Case 2)

602176 is Not compatible with **602250**

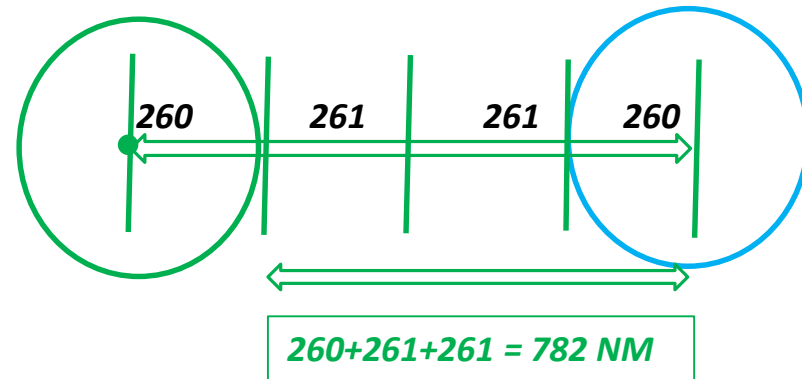
Example: Bahrain 132.450 MHz



FF calculates the possible interference based on the radius: 782 NM



Required distance 1042 NM



Location of the original 602250



If 602250 is located here, It should be compatible



Exercises- Test Frequency & Understand the result

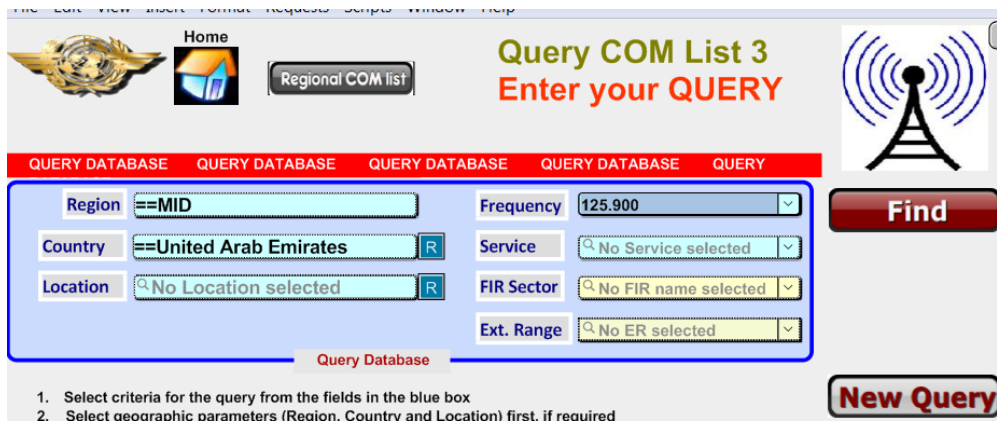
1. Perform compatibility test – single frequency
 - Query: State: United Arab Emirates 125.900 MHz
 - Select key “601275”
 - Click test frequency and single frequency

2. Perform compatibility tests.
 - all frequency assignments in your country
 - Test all these frequency assignments
 - Look at each incompatible frequency assignment to determine if or what action is required.



Test Frequency (Case 3)

– Example: United Arab Emirates 125.900 MHz



Home Regional COM list

Query COM List 3
Enter your QUERY

QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY

Region ==MID Frequency 125.900

Country ==United Arab Emirates Service No Service selected

Location No Location selected FIR Sector No FIR name selected

Ext. Range No ER selected

Find

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

① Click **“Query”**

② Select State: **United Arab Emirates**,
Frequency : **125.900**

③ Click **“Find”**

Frequency Finder found two
user cases of 125.900 MHz
in UAE

FF-2020-3 Runtime 16.0.6 Active Region ==MID COM list 3 for VHF COM air/ground frequency assignments in the band 117.975 -

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

MID COM list 3 RESET QUERY

total found
29097 2

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

Single Station Export COM list 3 Special Functions

- Export submissions -

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC	FIR Sector
R	601275	MID	125.900	United Arab Emirates	UAE ABU DHABI INTL	24D26'00" N	054D39'00" E	APP-U C-150/450	
R	601859	MID	125.900	United Arab Emirates	UAE AL AIN	24D13'00" N	055D45'00" E	APP-L C-50/120	

④ Select Key **“601275”**

⑤ Click **“Test Frequency”**

⑥ Select **“Single frequency”**



Test Frequency (Case 3)

– Example: United Arab Emirates 125.900 MHz

File Edit View Insert Format Records Scripts Tools Window Help

FF_2022_01 State Active Region ==MID COM list 3 for VHF COM air/ground frequency assignments

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

MID COM list 3 RESET QUERY MAPPING Export COM list 3

FM DU D total found 30336 2 Query Compatibility test[s] running.

Quick Find Reset

MOD Key Region Frequency Country Location Latitude Longitude DOC

601275	MID	125.900	United Arab Emirates	UAE	ABU DHABI INTL	24D26'00" N	054D39'00" E	APP-U C-150
601859	MID	125.900	United Arab Emirates	UAE	AL AIN	24D13'00" N	055D45'00" E	APP-L C-50/1

Present results of compatibility tests on a map

Click "Map" to plot the results of compatibility tests on a map.
Click "No Map" to continue without plotting the results of the compatibility tests on a map.
Click "Cancel" to cancel the compatibility tests.

Cancel No Map Map

⑦ Select **"Map"** if you want to see the result on Map as well

⑧ Summary Calculation is displayed

COM Data Base (COM LIST 3) Summary Calculations

Active Region ==MID Regional COM list Delete all records Redo calculations Co-frequency details Adj. frequency details

Date	Key	D	Frequency	Region	Country	Location	Service	Result Co. freq.	Margin	Result Adj. freq.
20_Apr_2020 17:15:49	601275	R	125.900	MID	United Arab Emirates	ABU DHABI INTL	APP-U	Not compatible	52	Compatible

⑨ Click **"Co-Frequency details"** to view the most recent test result



Compatibility test 2 result

– Example: United Arab Emirates 125.900 MHz (Key 601275) (Case 3)

COM Data Base (COM LIST 3) Details Co-frequency compatibility										Calculation of CO-frequency separation distances										Plot interference - All						
Regional COM list			6 / 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 601275	Frequency	125.900	Range	50	Height	12000	Radio Horizon	135	Sectorname		Latitude	24D26'00" N	Service	APP-U										
	Region	MID			Country	United Arab Emirates			Location	ABU DHABI INTL			Longitude	054D39'00" E	DOC	APP-U C-150/450										
Not compatible with record #2, #3										Margin			-308 NM		Not compatible		APP Upper 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 601859	Frequency	125.900	Range	50	Height	12000	Radio Horizon	135	Sectorname		Latitude	24D13'00" N	Service	APP-L										
	Region	MID			Country	United Arab Emirates			Location	AL AIN			Longitude	055D45'00" E	DOC	APP-L C-50/120										
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	62 NM	Required distance	370 NM	Margin		-308 NM		Not compatible		APP Lower Circular		Ext. range		Plot interference		
3	Key	R 602152	Frequency	125.900	Range	260	Height	45000	Radio Horizon	261	Sectorname		Latitude	30D33'25" N	Service	ACC-U										
	Region	MID			Country	Iraq			Location	BASRAH INTL			Longitude	047D39'48" E	DOC	ACC-U C-260/450										
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	522 NM	Required distance	706 NM	Margin		-184 NM		Not compatible		ACC Upper Circular		Ext. range		Plot interference		
4	Key	R 600811	Frequency	125.900	Range	260	Height	45000	Radio Horizon	261	Sectorname		Latitude	32D20'00" N	Service	ACC-U										
	Region	MID			Country	Iraq			Location	BAGHDAD INTL			Longitude	044D19'00" E	DOC	ACC-U C-260/450										
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	722 NM	Required distance	706 NM	Margin		16 NM		Compatible		ACC Upper Circular		Ext. range		Plot interference		
5	Key	R 600818	Frequency	125.900	Range	260	Height	45000	Radio Horizon	261	Sectorname		Latitude	33D13'00" N	Service	ACC-U										
	Region	MID			Country	Iraq			Location	BAGHDAD SADDAM INTL			Longitude	044D15'00" E	DOC	ACC-U C-260/450										
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	758 NM	Required distance	706 NM	Margin		52 NM		Compatible		ACC Upper Circular		Ext. range		Plot interference		
6	Key	R 602940	Frequency	125.900	Range	261	Height	45000	Radio Horizon	261	Sectorname		Latitude	35D28'15" N	Service	ACC-U										
	Region	MID			Country	Iraq			Location	KIRKUK			Longitude	044D20'51" E	DOC	ACC-U C-261/450										
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	851 NM	Required distance	707 NM	Margin		144 NM		Compatible		ACC Upper Circular		Ext. range		Plot interference		
First record is station being tested, records below are stations against which the first station has been tested.																										

Result indicated :

601275 is Not compatible with

601859

602152



Compatibility test result (*Case 3*) Cont.

Example: United Arab Emirates 125.900 MHz
601275 Not compatible with 601859

2	Key	R 601859	Frequency	125.900	Range	50	Height	12000	Radio Horizon	135	Sectorname		Latitude	24D13'00" N	Service	APP-L
	Region	MID	Country	United Arab Emirates	Location	AL AIN							Longitude	055D45'00" E	DOC	APP-L C-50/120
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	62 NM	Required distance	370 NM	Margin	-308 NM	Not compatible		APP Lower Circular		Ext. range		Plot interference	

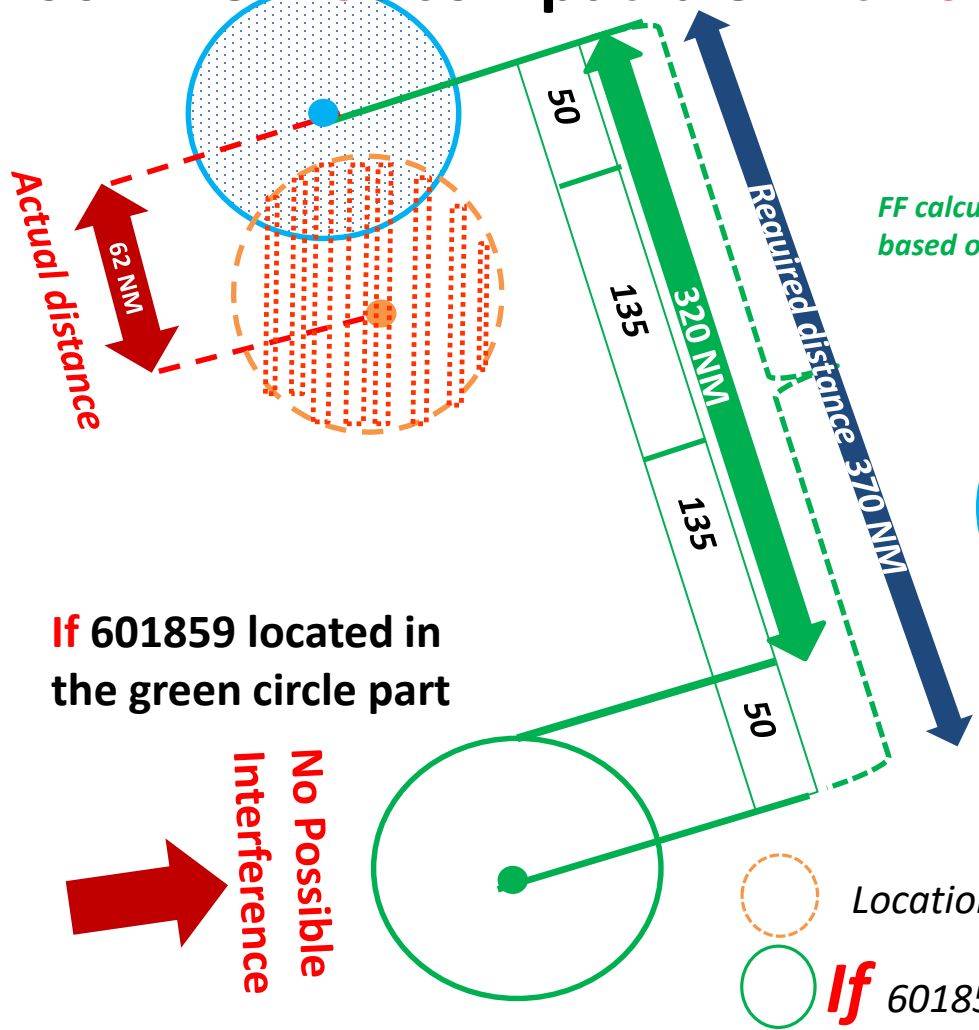




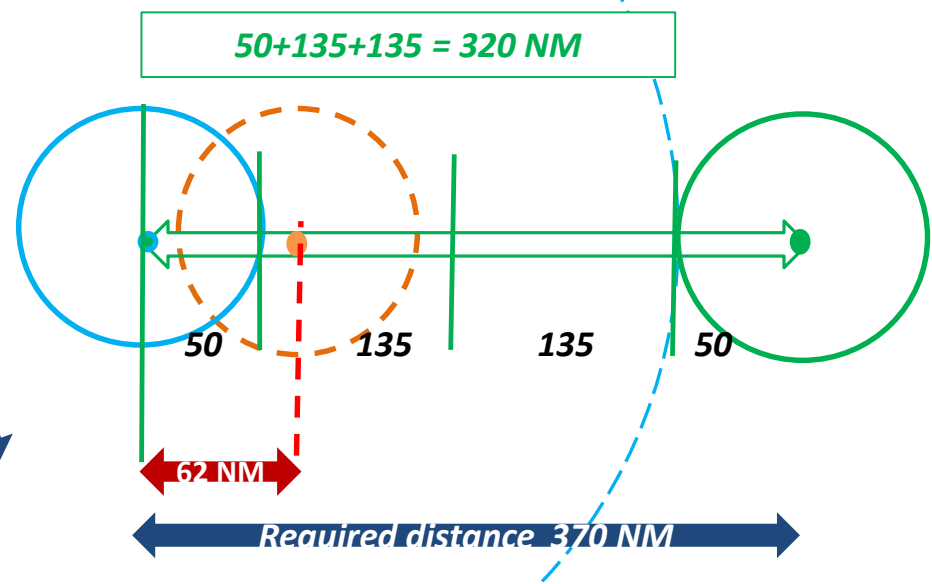
Compatibility test result Cont. (Case 3)

– Example: United Arab Emirates 125.900 MHz

601275 **Not** compatible with 601859



FF calculates the possible interference based on the radius: 320 NM



Location of the original 601859

If 601859 is located here, It should be compatible



Compatibility test result (*Case 3*) Cont.

Example: United Arab Emirates 125.900 MHz

601275 Not compatible with 602152

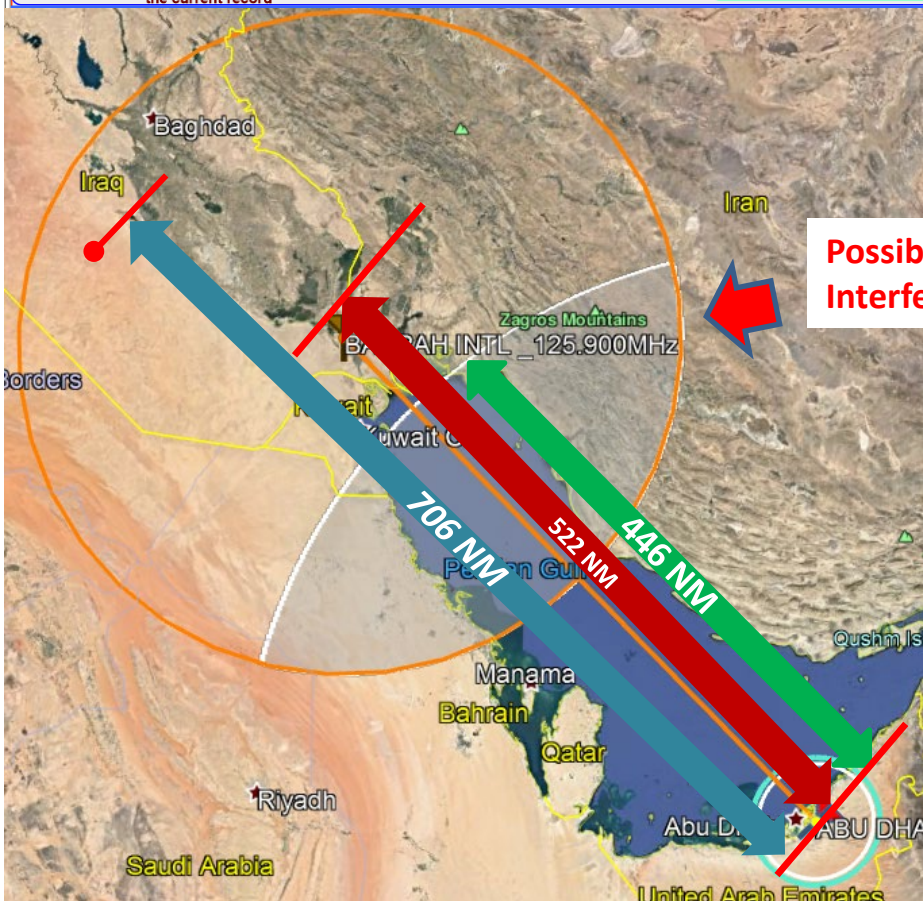
3	Key	R 602152	Frequency	125.900	Range	260	Height	45000	Radio Horizon	261	Sectorname		Latitude	30D33'25" N	Service	ACC-U
	Region	MID	Country	Iraq					Location	BASRAH INTL			Longitude	047D39'48" E	DOC	ACC-U C-260/450
The distance is measured between the location of the station in record 1 and the location of the station in the current record																
					Actual distance	522 NM	Required distance	706 NM	Margin	-184 NM	Not compatible	ACC Upper Circular			Ext. range	Plot interference

----- Required distance

----- Actual distance

----- Possible interference

Possible Interference



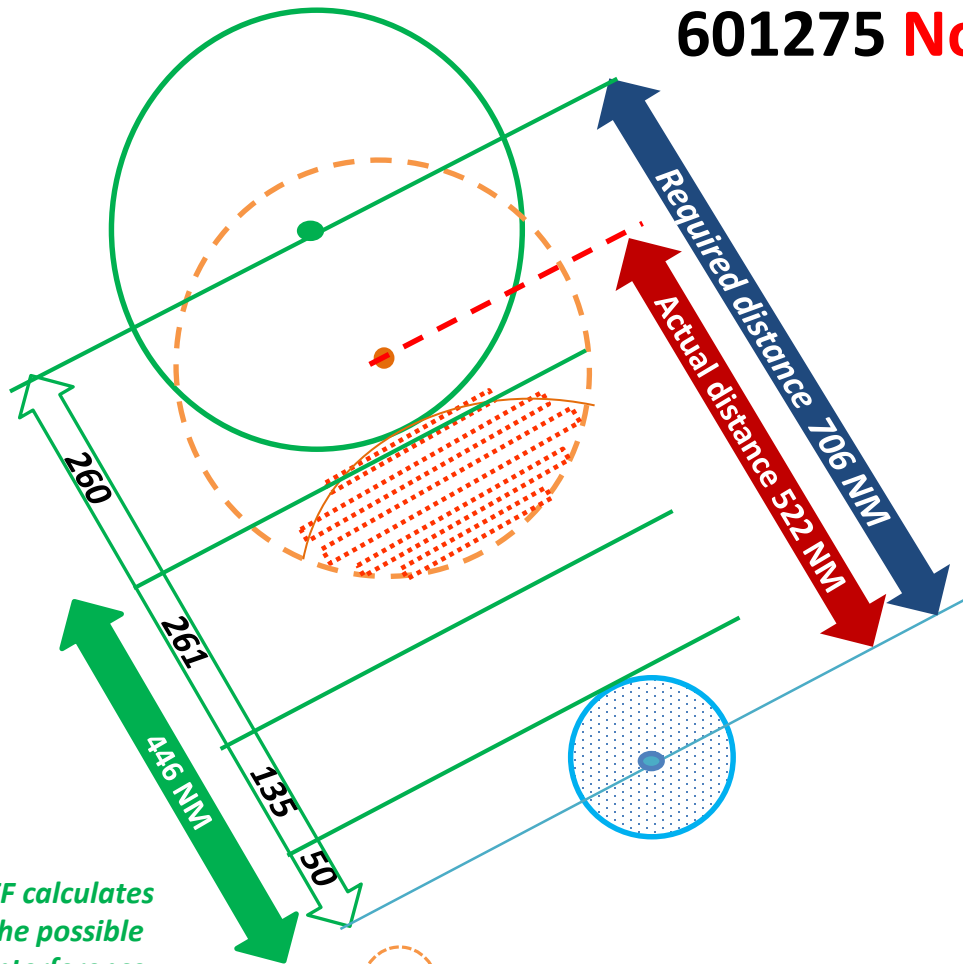
RECONNECTING THE WORLD



Compatibility test result (**Case 3**) Cont.

United Aab Emirates 125.900 MHz

601275 Not compatible with 602152



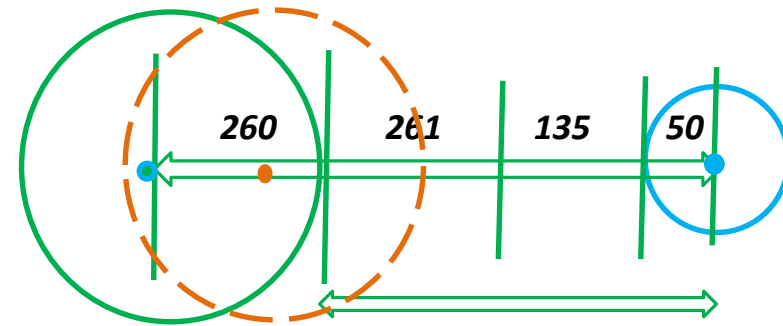
FF calculates the possible interference based on the radius: 446 NM



Location of the original 602152



If 602152 is located here, It should be compatible



$$261 + 135 + 50 = 446 \text{ NM}$$



ICAO

RECONNECTING THE WORLD



Demonstrations *Add, Modify or Delete Frequency*

Demonstration 1- Add:

Based on a frequency assignment (for example, select: Kuwait, Al Ahmadi, 121.075), then add APP-L frequency to *ICAOTEST MID*

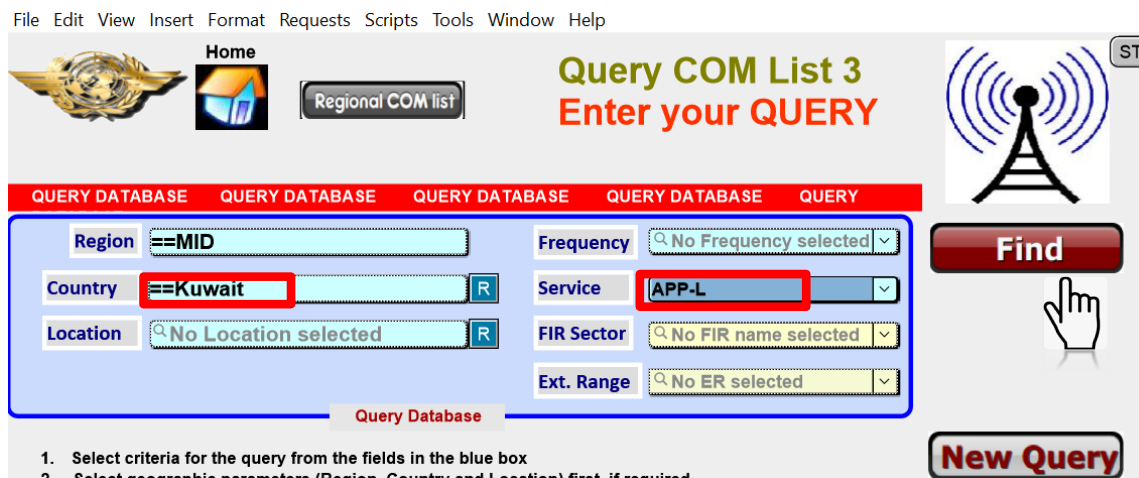
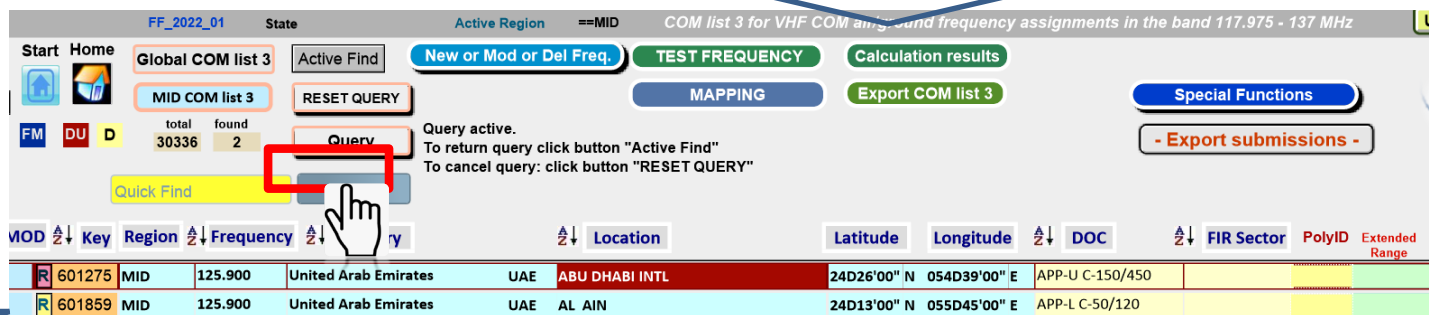
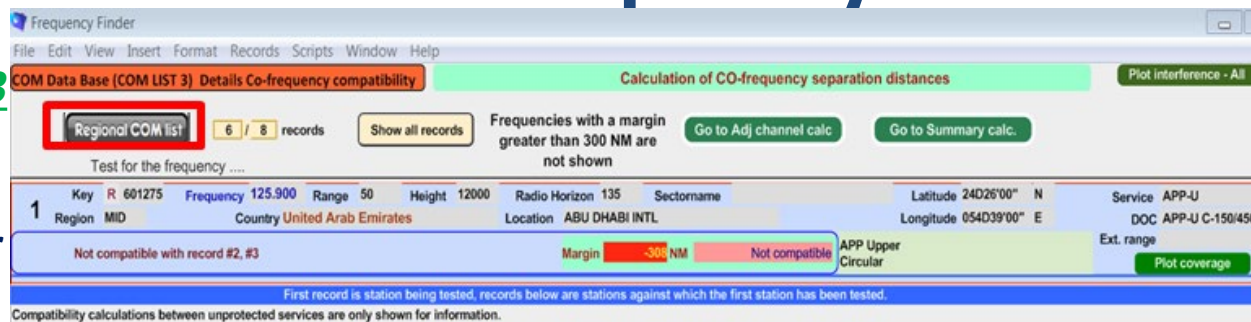


Add, Mod or Delete Frequency

Go back to Regional COM List 3

Click **“Query”**

Select information required for your investigation and Click **“Find”**



In this demonstration,
Country: **Kuwait**
Service: **APP-L**



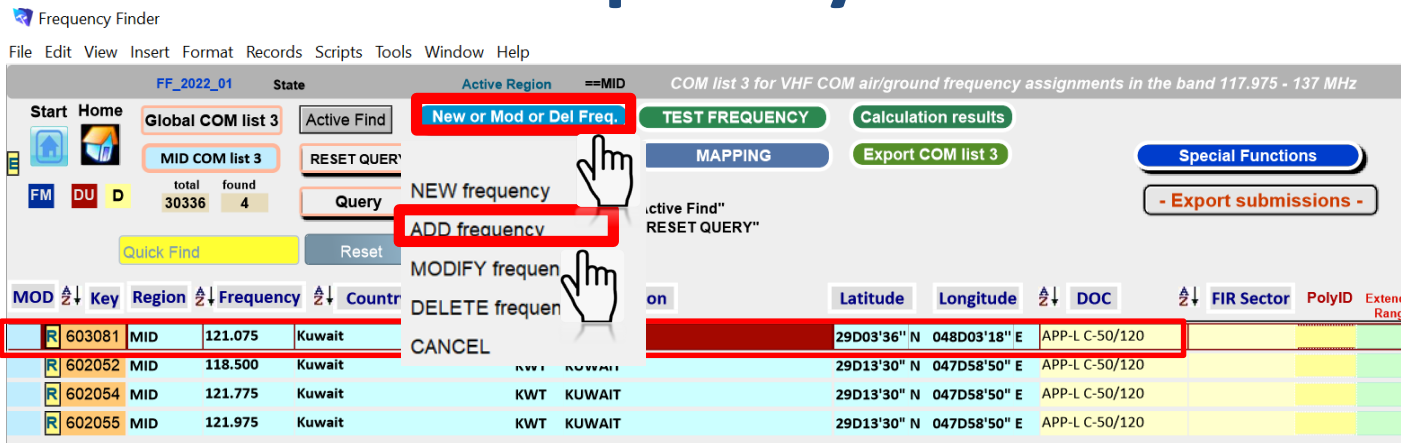
Add Frequency

Your Query outcome is displayed

Selected "603081" in this demonstration

Click "New or Mod or Del Freq,"

Select "Add Frequency"



MOD	Key	Region	Frequency	Country	Lat	Long	DOC	FIR Sector	PolyID	Ext Range
R	603081	MID	121.075	Kuwait	29D03'36" N	048D03'18" E	APP-L C-50/120			
R	602052	MID	118.500	Kuwait	29D13'30" N	047D58'50" E	APP-L C-50/120			
R	602054	MID	121.775	Kuwait	29D13'30" N	047D58'50" E	APP-L C-50/120			
R	602055	MID	121.975	Kuwait	29D13'30" N	047D58'50" E	APP-L C-50/120			

Add information required

In this demonstration

Change:

Country: **ICAOTEST MID**

Add:

Location: **ICAO MID 1**

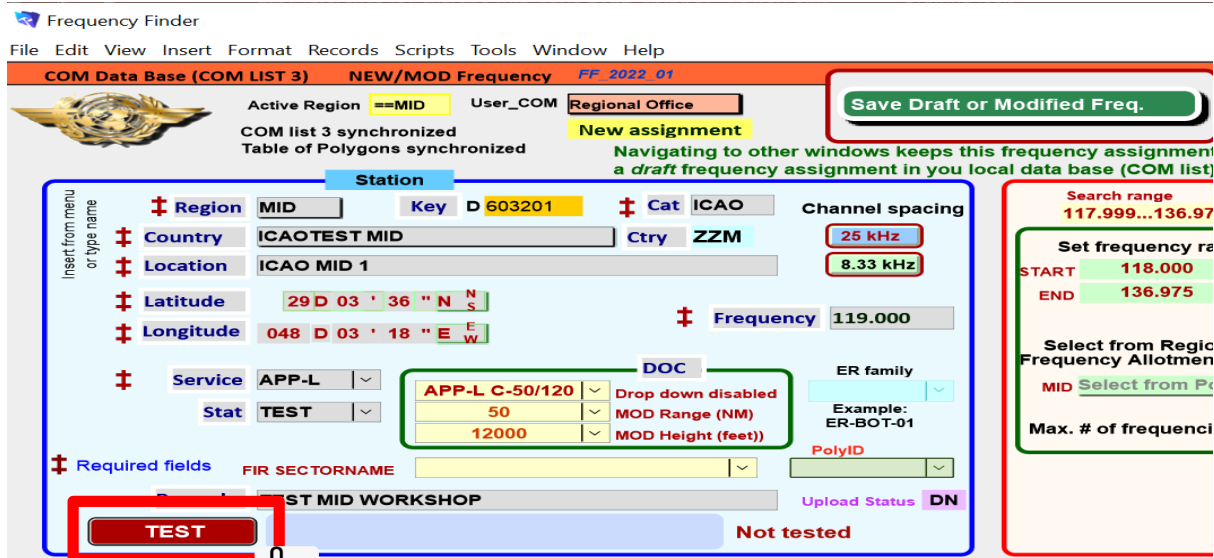
Frequency : **119.000**

Service: **APP-L**

Stat: **TEST**

Remark: **TEST MID WOKRSHOP**

Then Click "TEST"



COM Data Base (COM LIST 3) NEW/MOD Frequency FF 2022 01

Active Region ==MID User_COM Regional Office

COM list 3 synchronized Table of Polygons synchronized

Station

Region MID Key D 603201 Cat ICAO Channel spacing 25 kHz

Country ICAOTEST MID Ctry ZZM

Location ICAO MID 1

Latitude 29 D 03 ' 36 " N Longitude 048 D 03 ' 18 " E

Service APP-L Stat TEST

DOC APP-L C-50/120

Frequency 119.000

Required fields FIR SECTORNAME TEST MID WORKSHOP

TEST

Save Draft or Modified Freq.

Search range 117.999...136.97

Set frequency range START 118.000 END 136.975

Select from Region Frequency Allotment MID Select from PolyID

Max. # of frequency



Add Frequency cont.

Test result is displayed.
In this demonstration, it said that
The selected frequency
is Not compatible

Click **“Co-frequency”** to see more detail
Also click **“Plot-Interference all”** to see
outcome on Map



ICAO Logo

Active Region ==MID User_COM State

COM list 3 synchronized
Table of Polygons synchronized

New assignment

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

Save Draft or Modified Freq.

Station

Region MID Key D 603200 Cat ICAO Channel spacing 25 kHz

Country ICAOTEST MID Ctry KWT 8.33 kHz

Location Al Ahmadi

Latitude 29 D 03 ' 36 " N S

Longitude 048 D 03 ' 18 " E W

Frequency 119.000

Service APP-L

Stat C

DOC

APP-L C-50/120

Drop down disabled

50

MOD Range (NM)

12000

MOD Height (feet)

ER family

Example: ER-BOT-01

PolyID

Required fields

FIR SECTORNAME

Remarks TEST

Upload Status DN

TEST

The selected frequency is NOT compatible. Test completed

63788312830414

Summary

Test results of the new or modified frequency

Date/time	Key	D	Frequency	Region	Country	Location	Service	Margin
16/05/2022 11:56:04	603200	D	119.000	MID	Kuwait	Al Ahmadi	APP-L -115	Not c

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

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

63723337565776

Summary

Test results of the new or modified record First record is tested record

Key	D	Frequency	Region	Country	Location	Service	Range	Sectormame	Required D.	Actual D.	Margin	Result
603138	D	119.000	MID	Kuwait	Al Ahmadi	APP-L	50		0	0	-115	Not compatible
600768	E	119.000	MID	Iran, Islamic Republic of	SHIRAZ	APP-U	50		370	255	-115	Not compatible
602977	E	119.000	MID	United Arab Emirates	Emirates Flight Academy	TWR	25		288	455	167	Compatible
13102	E	119.000	EUR	Azerbaijan	LENKORAN	TWR	25		288	583	295	Compatible



Add Frequency cont.

*This selected frequency was **Not** compatible, so now you **need to find an appropriate one!***

Before “start search”, *you need to:*

- **Define Search Range**
(Two options (set frequency range or select from regional frequency allotment plan.
Note.- it is always better to select it from the regional allotment plan!!).
- **Set Maximum # of frequencies**
(1-10 can be selected)

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
MID APP-L, APP-I

Max. # of frequencies 10

START SEARCH

FF1
FF2
FF3
FF4
FF5
FF6
FF7
FF8
FF9
FF10

FOUND frequencies

Selected frequency Allo

In this example, select **APP-L** and **10** frequencies

Then “**Start Search**”





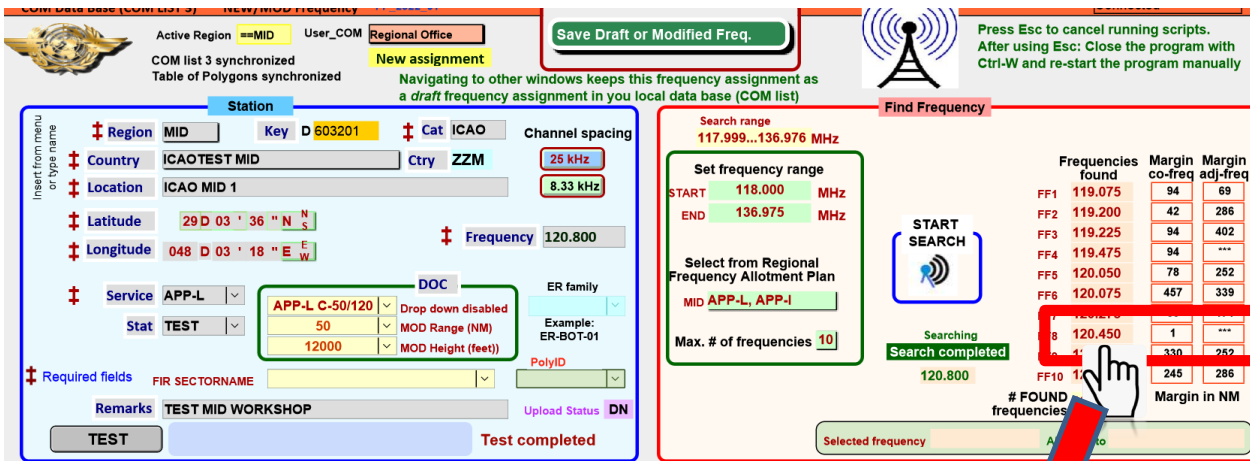
Add Frequency cont.

10 Frequency were found and select a frequency.

When you select a candidate frequency, please consider how you can use spectrum efficiently!

In this demonstration: Click "120.450".

The frequency you selected will be automatically included in the left side.



Active Region ==MID User_COM Regional Office Save Draft or Modified Freq.

COM list 3 synchronized
Table of Polygons 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 MID Key D 603201 Cat ICAO Channel spacing 25 kHz
Country ICAO TEST MID Ctry ZZM
Location ICAO MID 1
Latitude 29 D 03 ' 36 " N
Longitude 048 D 03 ' 18 " E
Frequency 120.800
Service APP-L DOC APP-L C-50/120 Drop down disabled ER family Example: ER-BOT-01
Stat TEST MOD Range (NM) 50 MOD Height (feet) 12000 PolyID
Required fields FIR SECTORNAME Upload Status DN
Remarks TEST MID WORKSHOP 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
MID APP-L, APP-I
Max. # of frequencies 10

START SEARCH

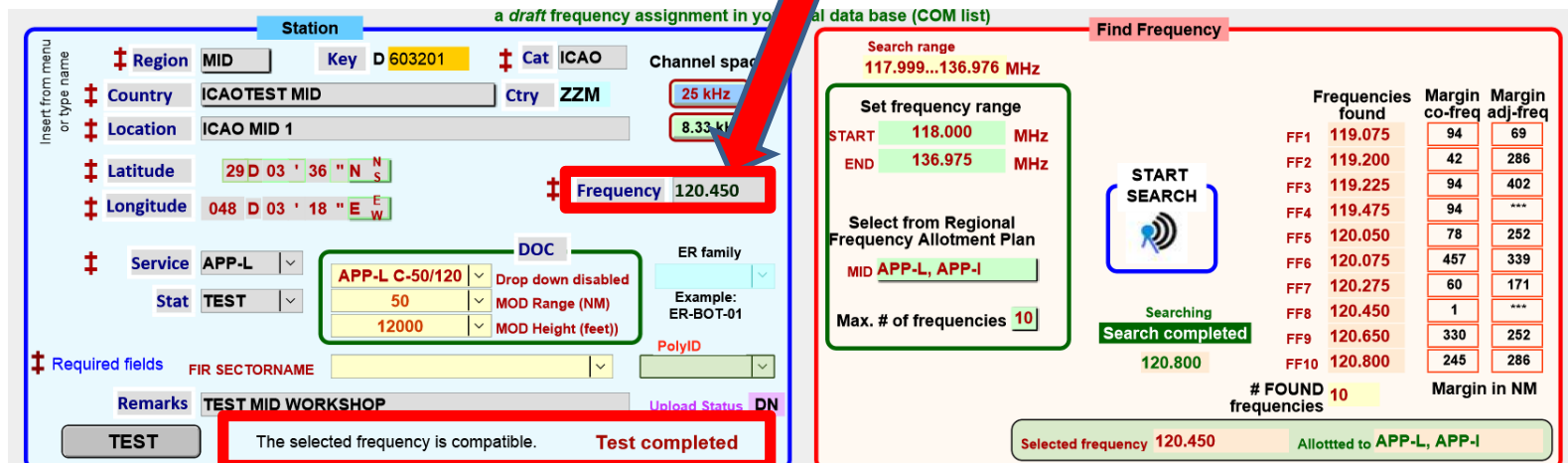
Searching
Search completed

120.800

FOUND frequencies 10

Selected frequency

Frequencies found	Margin co-freq	Margin adj-freq
FF1 119.075	94	69
FF2 119.200	42	286
FF3 119.225	94	402
FF4 119.475	94	---
FF5 120.050	78	252
FF6 120.075	457	339
FF7 120.275	60	171
FF8 120.450	1	---
FF9 120.650	330	252
FF10 120.800	245	286



Station

a draft frequency assignment in you al data base (COM list)

Region MID Key D 603201 Cat ICAO Channel spacing 25 kHz
Country ICAO TEST MID Ctry ZZM
Location ICAO MID 1
Latitude 29 D 03 ' 36 " N
Longitude 048 D 03 ' 18 " E
Frequency 120.450
Service APP-L DOC APP-L C-50/120 Drop down disabled ER family Example: ER-BOT-01
Stat TEST MOD Range (NM) 50 MOD Height (feet) 12000 PolyID
Required fields FIR SECTORNAME Upload Status DN
Remarks TEST MID WORKSHOP 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
MID APP-L, APP-I
Max. # of frequencies 10

START SEARCH

Searching
Search completed

120.800

FOUND frequencies 10

Selected frequency 120.450 Allotted to APP-L, APP-I

Frequencies found	Margin co-freq	Margin adj-freq
FF1 119.075	94	69
FF2 119.200	42	286
FF3 119.225	94	402
FF4 119.475	94	---
FF5 120.050	78	252
FF6 120.075	457	339
FF7 120.275	60	171
FF8 120.450	1	---
FF9 120.650	330	252
FF10 120.800	245	286

When you selected a frequency, FF also checked the compatibility and indicated the result :
"The selected frequency is compatible. Test completed"



ICAO

RECONNECTING THE WORLD



Add Frequency cont.

You selected the frequency, the result indicates “compatible”.

File Edit View Insert Format Records Scripts Tools Window Help

COM Data Base (COM LIST 3) NEW/MOD Frequency FF 2022 01

Active Region ==MID User_COM State

COM list 3 synchronized
Table of Polygons synchronized

New assignment
Navigating to other win
a draft frequency assign

Station

Region MID Key D 603200 Cat ICAO

Country Kuwait Ctry KWT

Location Al Ahmadi

Latitude 29 D 03 ' 36 " N S

Longitude 048 D 03 ' 18 " E W

Service APP-L

Stat C

DOC

APP-L C-50/120 Drop down disabled

50 MOD Range (NM)

12000 MOD Height (feet)

ER family

Example: ER-BOT-01

PolyID

Frequency Allotment

MID Select from P

Max. # of frequenci

Required fields FIR SECTORNAME

Insert from menu or type name

Cancel

Save as REGISTERED frequency

Save as DRAFT frequency

Delete draft frequency

View Summary

Go to Regional COM list

Select :

*“Save as DRAFT frequency”
in case you need to work on this
assignment more.*

*“Save as REGISTERED frequency”
in case you completed the
assignment and ready for
submission*

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	Compatible	81	Compatible
16/05/2022 15:04:06	603200	D	118.025	MID	Kuwait	Al Ahmadi	APP-L 8	Compatible	81	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.

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



Export Submissions

The registered frequency needs to report to Regional officer

File Edit View Insert Format Records Scripts Tools Window Help

FF_2022_01 State Active Region ==MID COM list 3 for VHF COM air/ground frequency assignments in the band 117.975 - 137 MHz

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

MID COM list 3 RESET QUERY MAPPING Export COM list 3 Special Functions

FM DU D total 30337 found 1 Query

Quick Find Reset

MOD Key Region Frequency Country Location Latitude Longitude DOC FIR Sec

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC	FIR Sec
N	?	MID	118.025	ICAO TEST MID	ZZM	AI Ahmadi	29D03'36" N 048D03'18" E	APP-L C-50/120	

1 - Export submissions -

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

<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, later, to your email the file you want to submit.

2

Cancel Open

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

SaveSubmissions

File Home Share View

Pin to Quick access Copy Paste Move to Delete Copy to Rename New folder Properties Open Select

Clipboard Organize New Open Select

« frequencyfind... » SaveSubmissions Search SaveSubmis

Name	Date modified	Type
VHFCOM ZZM 16-05-2022 34305 PM.xlsx	6/05/2022 3:48 PM	Microsoft



Exercises

Add, Modify or Delete Frequency

Exercise 1- ADD: using one station in your country as a template, add a station and find an appropriate frequency for that station. (recommend to add TWR service)

- 1) Query a frequency (in your country) and select it
- 2) Add one station and find an appropriate frequency for that station
(In Remark, please add TEST for MID WORKSHOP)
- 3) If you found an appropriate one, save it as registered frequency.
- 4) Send it to the Regional officer.



Demonstrations

Add, Modify or Delete Frequency

Demonstration 2- MOD: using outside range data (key 603200 – integrity check outcome), modify the data and find an appropriate frequency.

1) Query a frequency (State: ICAO MID, Frequency 137.000)

2) Modify its data

- change the name of the location from “Integrity check” to “ICAO MID 1” and
- change the service from ATIS to TWR,
- change the frequency from 137.00 to 118.300 and then,

3) Test the modified data with the selected frequency 118.300, and

4) If the result indicates not compatible, find an appropriate frequency for this site.

.



Add, Mod or Delete Frequency (Demonstration 2: Mod)

Go back to [Regional COM List 3](#)

Click **"Query"**

In this demonstration select,

Country: **ICAO-MID**

Frequency: **137.000**

Click **"Find"**

Frequency Finder

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 ==MID Frequency 137.000

Country ==ICAO TEST MID Service No Service selected

Location No Location selected FIR Sector No FIR name selected

Ext. Range No ER selected

Find

Your Query outcome
(the data with key 603200)
is displayed in this demonstration.

Click **"New or Mod or Del Freq,"**
Select **"MODIFY Frequency"**

FF_2022_01 Runtime Active Region ==MID COM list 3 for VHF CO

Start Home

Global COM list 3 Active Find

MID COM list 3

total found
30368 1

Query

NEW frequency
ADD frequency
MODIFY frequency
DELETE fr
CANCEL

Quick Find

Reset

MOD Key Region Frequency Country Location

R	603200	MID	137.000	ICAO TEST MID	ZMZ	Integrity Check
---	--------	-----	---------	---------------	-----	-----------------



Add, Mod or Delete Frequency (Demonstration 2: Mod)

In this demonstration,

- **change** the location from “Integrity check” to **“ICAO MID 1”**
- **change** the service from ATIS to **TWR**, and
- **change** the frequency from 137.000 to **118.300**

Then Click **“TEST”**

a draft frequency assignment in your location

Station

Insert from menu or type name

Region MID Key D 603200 Cat NAT Channel spacing 25 kHz

Country ICAOTEST MID Ctry ZZM 8.33 kHz

Location ICAO MID 1

Latitude 31 D 58 ' 21 " N S

Longitude 035 D 59 ' 29 " E W

Service TWR Stat NOP

DOC TWR C-25/40 25 4000 Drop down disabled MOD Range (NM) MOD Height (feet)

ER family Example: ER-BOT-01

Required fields FIR SECTORNAME PolyID

Remarks For MID Workshop Upload Status DR

TEST Not tested



Test result is displayed.

In this demonstration, it said that :

The selected frequency **is Not compatible**

a draft frequency assignment in your location

Station

Insert from menu or type name

Region MID Key D 603200 Cat NAT Channel spacing 25 kHz

Country ICAOTEST MID Ctry ZZM 8.33 kHz

Location ICAO MID 1

Latitude 31 D 58 ' 21 " N S

Longitude 035 D 59 ' 29 " E W

Frequency 118.300

Service TWR Stat NOP

DOC TWR C-25/40 25 4000 Drop down disabled MOD Range (NM) MOD Height (feet)

ER family Example: ER-BOT-01

Required fields FIR SECTORNAME PolyID

Remarks For MID Workshop Upload Status DR

TEST The selected frequency is NOT compatible. Test completed

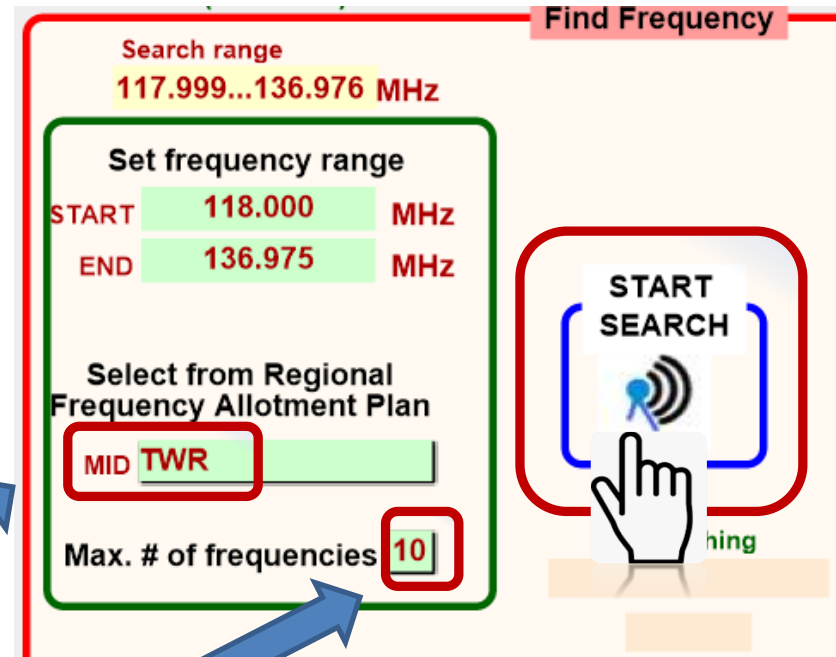


Add, Mod or Delete Frequency (Demonstration 2: Mod)

*This selected frequency was **Not** compatible, so now you **need to find an appropriate one!***

Before “start search”, you need to:

- **Define Search Range**
(Two options (set frequency range or select from regional frequency allotment plan.
Note.- it is always better to select it from the regional allotment plan!!).
- **Set Maximum # of frequencies**
(1-10 can be selected)



The screenshot shows the 'Find Frequency' interface. A red box highlights the 'Search range' section, which includes a green box around the 'Set frequency range' section. This green box contains 'START 118.000 MHz' and 'END 136.975 MHz'. Below this, a green box highlights the 'Select from Regional Frequency Allotment Plan' section, which includes a red box around the 'MID TWR' dropdown menu. Another red box highlights the 'Max. # of frequencies' dropdown menu, which is set to '10'. A hand icon is shown clicking the 'START SEARCH' button, which is also highlighted with a red box. A blue arrow points from the text 'In this example, select TWR and 10 frequencies' to the 'MID TWR' dropdown. Another blue arrow points from the text 'Then “Start Search”' to the 'START SEARCH' button.

*In this example, select **TWR** and **10** frequencies*

Then “Start Search”





Add, Mod or Delete Frequency (Demonstration 2: Mod)

10 Frequency were found and select a frequency.

When you select a candidate frequency, please consider how you can use spectrum efficiently!

In this demonstration:
Click "**118.150**".

The frequency you selected will be automatically included in the left side.

Station: a draft frequency assignment in your local data base (COM list)

Region: MID, Key: D 603200, Cat: NAT, Channel spacing: 25 kHz, 8.33 kHz

Country: ICAOTEST MID, Ctry: ZZM

Location: ICAO MID 1

Latitude: 31 D 58 ' 21 " N, Longitude: 035 D 59 ' 29 " E

Frequency: 118.550

Service: TWR, Stat: NOP, DOC: TWR C-25/40, 25, 4000, Drop down disabled, MOD Range (NM), MOD Height (feet)

ER family: Example: ER-BOT-01

Required fields: FIR SECTORNAME, PolyID

Remarks: For MID Workshop, Upload Status: DR

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: MID TWR

Max. # of frequencies: 10

START SEARCH

Searching, Search completed

118.550

Selected frequency: Allotted to

Frequencies found	Margin co-freq	Margin adj-freq
FF1 118.000	116	220
FF2 118.025	24	145
FF3 118.150	9	52
FF4 118.175	211	99
FF5 118.225	90	56
FF6 118.275	50	46
FF7 118.325	107	46
FF8 118.475	195	54
FF9 118.525	47	82
FF10 118.550	48	293

FOUND frequencies: 10, Margin in NM

Station: a draft frequency assignment in your local data base (COM list)

Region: MID, Key: D 603200, Cat: NAT, Channel spacing: 25 kHz, 8.33 kHz

Country: ICAOTEST MID, Ctry: ZZM

Location: ICAO MID 1

Latitude: 31 D 58 ' 21 " N, Longitude: 035 D 59 ' 29 " E

Frequency: 118.150

Service: TWR, Stat: NOP, DOC: TWR C-25/40, 25, 4000, Drop down disabled, MOD Range (NM), MOD Height (feet)

ER family: Example: ER-BOT-01

Required fields: FIR SECTORNAME, PolyID

Remarks: For MID Workshop, Upload Status: DR

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: MID TWR

Max. # of frequencies: 10

START SEARCH

Searching, Search completed

118.550

Selected frequency: 118.150, Allotted to: TWR

Frequencies found	Margin co-freq	Margin adj-freq
FF1 118.000	116	220
FF2 118.025	24	145
FF3 118.150	9	52
FF4 118.175	211	99
FF5 118.225	90	56
FF6 118.275	50	46
FF7 118.325	107	46
FF8 118.475	195	54
FF9 118.525	47	82
FF10 118.550	48	293

FOUND frequencies: 10, Margin in NM

When you selected a frequency, FF also checked the compatibility and indicated the result :

"The selected frequency is compatible. Test completed"



Add, Mod or Delete Frequency (Demonstration 2: Mod)

You selected the frequency, the result indicates “compatible”.

Select :

*“Save as DRAFT frequency”
in case you need to work on this
assignment more.*

*“Save as REGISTERED frequency”
in case you completed the
assignment and ready for
submission*

Date/time	Key	D	Frequency	Region	Country	Location	Service	Margin	Results	Margin Result
06/06/2022 16:49:58	603200	D	118.150	MID	ICAO TEST MID	ICAO MID 1	TWR	9	Compatible	52 Compatible



Export Submissions

The registered frequency needs to report to Regional officer

File Edit View Insert Format Records Scripts Tools Window Help

FF_2022_01 State Active Region ==MID COM list 3 for VHF COM air/ground frequency assignments in the band 117.975 - 137 MHz

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

MID COM list 3 RESET QUERY MAPPING Export COM list 3 Special Functions

FM DU D total found 30337 1 Query

Quick Find Reset

MOD Key Region Frequency Country Location Latitude Longitude DOC FIR Sec

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC	FIR Sec
N	?	MID	118.025	ICAO TEST MID	ZZM	29D03'36" N	048D03'18" E	APP-L C-50/120	

1 - Export submissions -

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

<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, later, to your email the file you want to submit.

2

Cancel Open

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

SaveSubmissions

File Home Share View

Pin to Quick access Copy Paste Move to Delete Copy to Rename New folder Properties Open Select all Select none Invert selection

Clipboard Organize New Open Select

« frequencyfind... » SaveSubmissions Search SaveSubmis

Name	Date modified	Type
VHFCOM ZZM 16-05-2022 34305 PM.xlsx	6/05/2022 3:48 PM	Microsoft



Exercises

Add, Modify or Delete Frequency

Prior to start this exercise, please make sure that you have the latest data.

- **Go back to Home page, check sync, and if the message “modification to the global database” appeared, then please select “download”.**

Exercise 2- MOD: modify some parameter in the TWR frequency of your country you created yesterday, and find an appropriate frequency for that station.

- 1) Query a frequency (in your country) and select the frequency you created yesterday.
- 2) Modify the service from TWR to ATIS, and find an appropriate frequency for that station (In Remark, please keep the remark “TEST for MID WORKSHOP”)
- 3) If you found an appropriate one, save it as registered frequency; and
- 4) Send it to the Regional officer.



Add, Mod or Delete Frequency (Exercise 2: Mod)

Go back to [Regional COM List 3](#)

Click **“Query”**

In this example select,
Country: **ICAO-MID**
Location: **icao mid 1**
Service: **TWR**

Click **“Find”**

Query outcome in this example:
(the data with key 603200) is displayed.

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC
FM	603203	MID	118.075	ICAO TEST MID	ZZM	29D03'36" N	048D03'18" E	TWR C-25/40

Click **“New or Mod or Del Freq,”**

Select **“MODIFY Frequency”**



Add, Mod or Delete Frequency (Exercise 2: Mod)

Station a arant frequency assignment in you io

Insert from menu or type name

Region MID Key D 603203 Cat ICAO Channel spacing 25 kHz 8.33 kHz

Country ICAOTEST MID Ctry ZZM

Location icao mid 1

Latitude 29 D 03 ' 36 " N Longitude 048 D 03 ' 18 " E

Service ATIS DOC

ATIS B-200/450 200 45000 Drop down disabled MOD Range (NM) MOD Height (feet)

ER family Example: ER-BOT-01

Required fields FIR SECTORNAME PolyID

Remarks TEST for MID WORKSHOP Upload Status DR

TEST Not tested

In this example, I changed the service from "TWR" to "ATIS"

Since I changed the service, I need to find an appropriate frequency for ATIS.

*In this example, I used "regional allotment plan" and select "VOLMET, ATIS" and set **maximum # of frequencies 10** for the search.*

Then "Start Search"

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

MID VOLMET, ATIS

Max. # of frequencies 10

START SEARCH

Searching



Add, Mod or Delete Frequency (Exercise 2: Mod)

10 Frequency were found and select a frequency.

When you select a candidate frequency, please consider how you can use spectrum efficiently!

In this demonstration: Click **"126.650"**.

The frequency you selected will be automatically included in the left side.

Station

Insert from menu or type name

Region MID Key D 603203 Cat ICAO Channel spacing 25 kHz

Country ICAOTEST MID Ctry ZZM

Location icao mid 1

Latitude 29 D 03 ' 36 " N

Longitude 048 D 03 ' 18 " E

Service ATIS

Stat

DOC

ATIS B-200/450

200

45000

Drop down disabled

MOD Range (NM)

MOD Height (feet)

ER family

Example: ER-BOT-01

PolyID

Required fields

FIR SECTORNAME

Remarks TEST for MID WORKSHOP

Upload Status DR

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

MID VOLMET, ATIS

Max. # of frequencies 10

START SEARCH

Search completed

	Frequencies found	Margin co-freq	Margin adj-freq
FF1	126.275	25	69
FF2	126.475	200	267
FF3	126.650	25	16
FF4	127.075	880	82
FF5	127.025	278	245
FF6	127.050	74	***
FF7	127.075	112	82
FF8	127.225	377	206
FF9	127.275	199	69
FF10	127.425	290	496

FOUND frequencies 10

Margin in NM

When you selected a frequency, FF also checked the compatibility and indicated the result : **"The selected frequency is compatible. Test completed"**.



Add, Mod or Delete Frequency (Exercise 2: Mod)

You selected the frequency, the result indicates “compatible”.

The screenshot shows the ICAO Frequency Allocation Software (FAS) interface. The 'Station' tab is active, displaying various fields for frequency assignment. A red box highlights the 'Save as REGISTERED frequency' button. A hand icon points to the 'Save as REGISTERED frequency' button. The 'Find Frequency' section shows a search for 126.650 MHz, with a table of results. The 'TEST' button is highlighted, and the message 'The selected frequency is compatible.' is displayed.

Active Region ==MID User_COM State

COM list 3 synchronized
Table of Polygons synchronized

Mod assignment
Navigating to other
a draft frequency as

Station

Region MID Key D 603203 Cat ICAO

Country ICAOTEST MID Ctry ZZM

Location icao mid 1

Latitude 29 D 03 ' 36 " N

Longitude 048 D 03 ' 18 " E

Service ATIS

Stat

DOC

ATIS B-200/450

Drop down disabled

200

MOD Range (NM)

45000

MOD Height (feet)

ER family

Example:
ER-BOT-01

PolyID

Required fields

FIR SECTORNAME

Remarks TEST for MID WORKSHOP

Upload Status DR

TEST

The selected frequency is compatible.

Test completed

Save as REGISTERED frequency

Delete draft

View Summ

Go to Regio

Find Frequency

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

START
SEARCH

Searching

Search completed

127.425

FOUND
frequencies 10

Margin in NM

Frequencies found	Margin co-freq	Margin adj-freq
FF1 126.275	25	69
FF2 126.475	290	267
FF3 126.650	25	16
FF4 126.675	880	82
FF5 127.025	278	245
FF6 127.050	74	---
FF7 127.075	112	82
FF8 127.225	377	206
FF9 127.275	199	69
FF10 127.425	290	496

Selected frequency 126.650 Allotted to VOLMET, ATIS

Select :

“Save as DRAFT frequency”

in case you need to work on this assignment more.

“Save as REGISTERED frequency”

in case you completed the assignment and ready for submission

*In this example,
I saved **as REGISTERED**
frequency.*



Export Submissions

The registered frequency needs to report to Regional officer

File Edit View Insert Format Records Scripts Tools Window Help

FF_2022_01 State Active Region ==MID COM list 3 for VHF COM air/ground frequency assignments in the band 117.975 - 137 MHz

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

MID COM list 3 RESET QUERY MAPPING Export COM list 3

FM DU D total 30337 found 1 Query

Quick Find Reset

MOD Key Region Frequency Country Location Latitude Longitude DOC FIR Sec

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC	FIR Sec
N	?	MID	118.025	ICAO TEST MID	ZZM	29D03'36" N	048D03'18" E	APP-L C-50/120	

1 - Export submissions -

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

<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, later, to your email the file you want to submit.

2

Cancel Open

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

SaveSubmissions

File Home Share View

Pin to Quick access Copy Paste Move to Delete Copy to Rename New folder Properties Open Select all Select none Invert selection

Clipboard Organize New Open Select

« frequencyfind... » SaveSubmissions Search SaveSubmis

Name	Date modified	Type
VHFCOM ZZM 16-05-2022 34305 PM.xlsx	6/05/2022 3:48 PM	Microsoft



Demonstrations

Add, Modify or Delete Frequency

Demonstration 3- Delete a frequency, using empty field data.

- 1) Query a frequency (State: ICAO MID, Frequency 118.200)
- 2) Delete this frequency, and
- 3) submit it to the regional officer.

.



Add, Mod or Delete Frequency (Demonstration 3: Del)

Go back to [Regional COM List 3](#)

Click **“Query”**

In this demonstration,
select,

Country: **ICAO-MID**

Frequency: **118.200**

Click **“Find”**

Your Query outcome
(the data with key 603123)
is displayed in this
demonstration.

Click **“New or Mod or Del Freq,”**

Select **“DELETE Frequency”**

MOD	Key	Region	Frequency	Country	DOC
R	603123	MID	118.200	ICAO TEST MID	ZZM



Add, Mod or Delete Frequency (Demonstration 3: Del)

Once you selected “**DELETE Frequency**”, the following message appeared.

The screenshot shows the ICAO Frequency Management System interface. A confirmation dialog box is displayed in the center, asking for confirmation to delete a registered frequency assignment. The dialog text reads:

<65.5> Delete registered frequency assignment # E603123

Delete the registered frequency assignment # E603123 from your local COM list 3.

Click "Delete" to (functionally) delete the registered frequency assignment from your local COM list 3.

Click "Cancel" to cancel.

The dialog has two buttons: "Cancel" and "Delete". The "Delete" button is highlighted with a red rectangle, and a hand cursor is pointing at it. A blue arrow points from the text "Click 'Delete'" to the "Delete" button.

The background interface shows a table of frequency assignments. The table has columns: MOD, Key, Region, Frequency, Country, Location, Integrity Check, Latitude, and Longitude. The first row is highlighted in red and contains the following data:

MOD	Key	Region	Frequency	Country	Location	Integrity Check	Latitude	Longitude
R	603123	MID	118.200	ICAO TEST MID	ZZM	Integrity Check	00D00'00"N	00D00'00"E

- If you are deleting a “registered frequency”, you need to submit it to the Regional officer using “export submission”.
- If you are deleting a “draft frequency”, there is no need to send it to Regional office.

In this demonstration, we are deleting the registered frequency, you need to send it to the Regional officer.



ICAO

RECONNECTING THE WORLD



File Edit View Insert Format Records Scripts Tools Window Help

FF_2022_01 State Active Region ==MID COM list 3 for VHF COM air/ground frequency assignments in the band 117.975 - 137 MHz

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

MID COM list 3 RESET QUERY MAPPING Export COM list 3 Special Functions

FM DU D total found 30337 1 Query

Quick Find Reset

MOD Key Region Frequency Country Location Latitude Longitude FIR Sector

N	R	?	MID	118.025	ICAOTEST MID	ZZM	Al Ahmadi	29D03'36"N 048D03'18"E	APP-L C-50/120
---	---	---	-----	---------	--------------	-----	-----------	------------------------	----------------

<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.

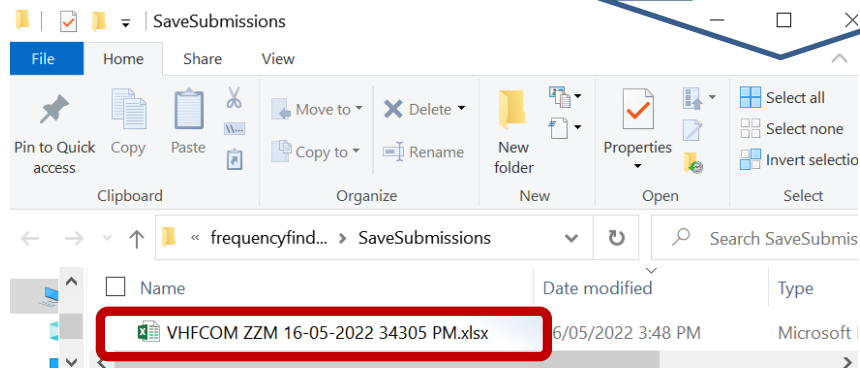
Click "Open" to look at the Excel file,
Click "Cancel" to cancel.

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

Cancel Open

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) **by email**;





Exercises

Add, Modify or Delete Frequency

Prior to start this exercise, please make sure that you have the latest data.

- **Go back to Home page, check sync, and if the message “modification to the global database” appeared, then please select “download”.**

Exercise 3- DEL: Delete the ATIS frequency of your country you created today.

- 1) Query a frequency (in your country) and select the frequency you created today.
- 2) Click “New or Mod or Del Freq,” and ”Select Delete frequency.
- 3) Submit it to the Regional officer.



ICAO

RECONNECTING THE WORLD



Exercise *Add, Modify or Delete Frequency*

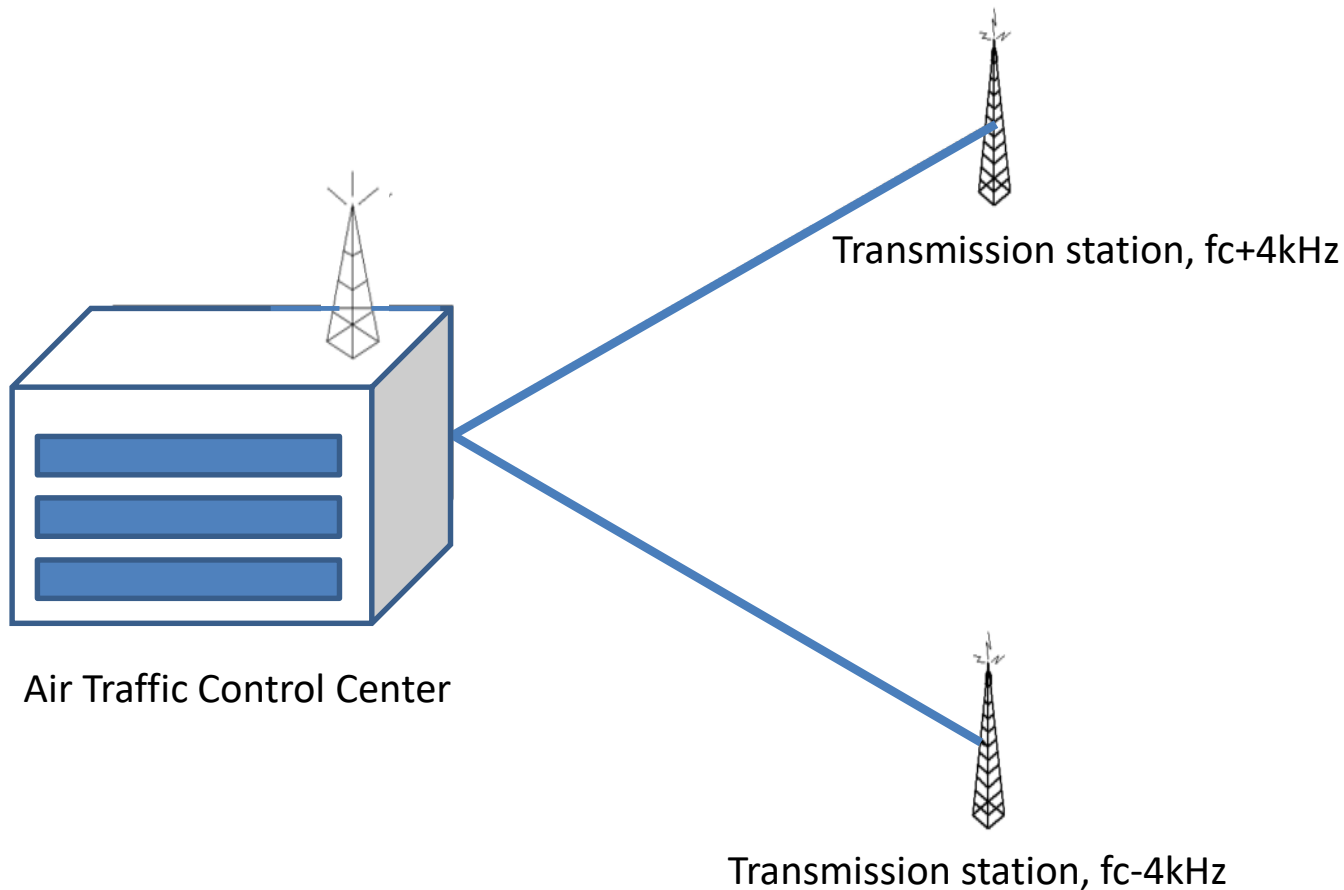
***Update your COM List 3 of the Frequency Finder,
using your latest data.***



Applying Extended Range (ER) and Area Service

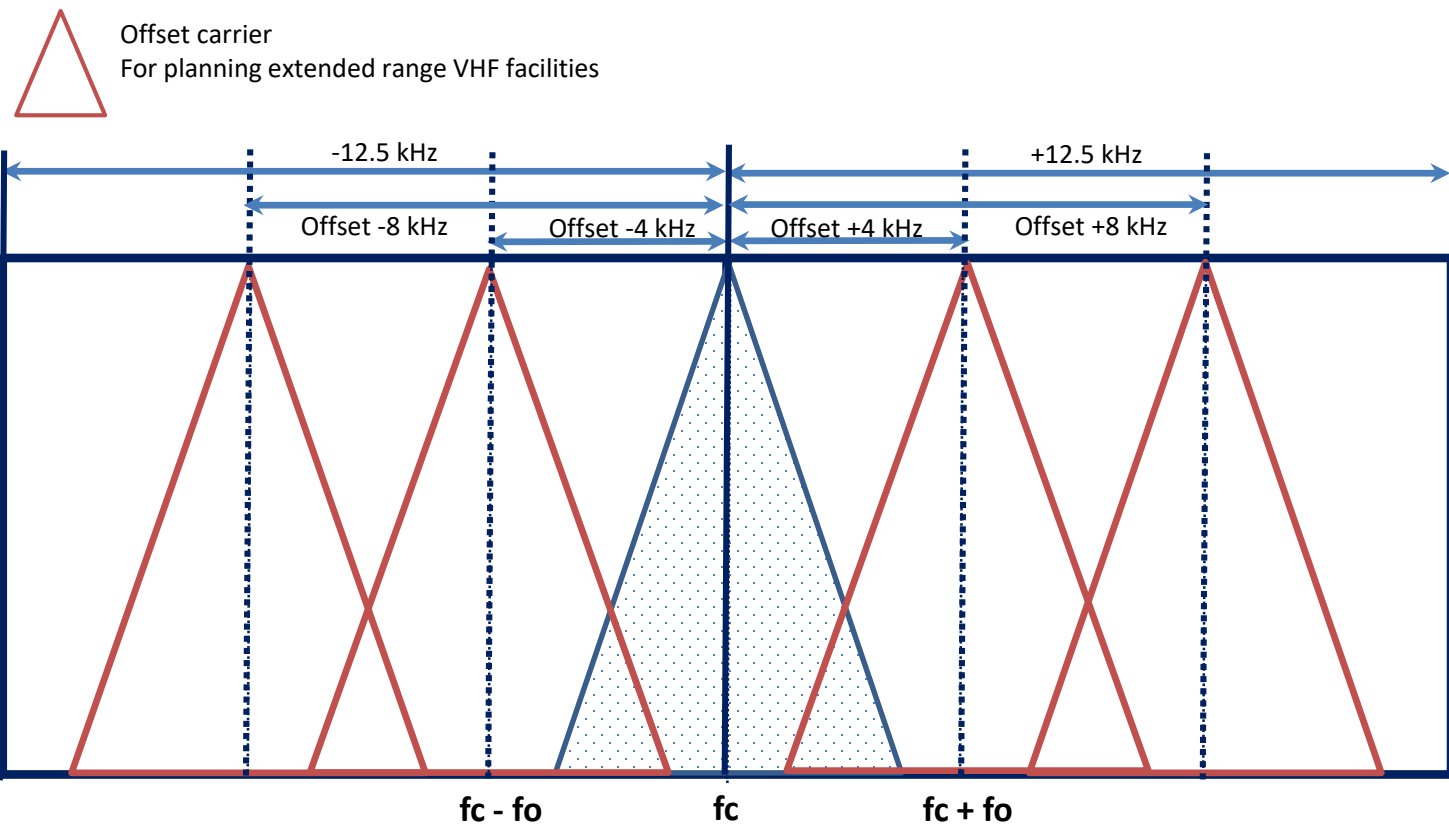


Extended Range (ER) Facilities



- For large geographical ATC sectors or sectors with difficult propagation, the VHF coverage cannot be met with a single ground transmitter.
- In such coverage situations, instead of using several different frequencies, additional coverage is provided through installing extended range stations (forward relay).
- These stations can operate on the same frequency using the offset carrier system or multi-carrier system.

Extended Range (ER) Facilities Cont.





Extended Range (ER) Facilities Cont.

- ER Stations are implemented to provide coverage **over a large geographical area that cannot be covered by a single VHF station.**
- The ER stations operate on the **same frequency in the off-set carrier configuration** (refer to Annex 10).
- All stations within same ER family
 - ***No longer considered as interferer between each other***

(Refer to Frequency Finder Manual)



Extended Range (ER) Facilities Cont.

How to apply Extended range to stations in Frequency Finder

- 1) For existing ER family,
 - click the drop down menu in the ER family and
 - **select from the available ER families.**
- 2) For a new ER family,
 - **Type a new ER family name** in the box ER family.

*Note.- This name must be preceded with the characters “ER-”.
E.g. **ER-UAE-01** for a family of frequency assignments in UAE.*



Demonstrations Extended Range (ER)



ICAO

RECONNECTING THE WORLD



Adding Extended Range stations Example 1

1) Add two frequencies based on 601275 (UAE 125.900) and 601856 (UAE 125.900)

A frequency based on 601275 (UAE 125.900)

Change information (like below)

- Country : ICAO TEST MID,
- Location : ICAO MID 2
- Service : APP-U
- Frequency : 125.425
- Remark: ICAO MID WORKSHOP

At this moment, No FIR, No extended range

A frequency based on 601275 (UAE 125.900)

Change information (like below)

- Country : ICAO TEST MID,
- Location : ICAO MID 3
- Service : APP-U
- Frequency : 125.425
- Remark : ICAO MID WORKSHOP

At this moment, No FIR, No extended range

Save as draft frequencies

Station	
Region	MID
Key	D 603209
Cat	NAT
Channel spacing	
Country	ICAOTEST MID
Ctry	ZZM
Location	ICAO MID 2
Latitude	24 D 26 ' 00 " N S
Longitude	054 D 39 ' 00 " E W
Frequency	125.425
Service	APP-U
Stat	
DOC	APP-U C-150/450
ER family	Drop down disabled
Example:	ER-BOT-01
PolyID	
Required fields	FIR SECTORNAME
Remarks	ICAO MID WORKSHOP
Upload Status	DN
TEST	The selected frequency is compatible. Test completed

Station	
Region	MID
Key	D 603210
Cat	NAT
Channel spacing	
Country	ICAOTEST MID
Ctry	ZZM
Location	ICAO MID 3
Latitude	24 D 13 ' 00 " N S
Longitude	055 D 45 ' 00 " E W
Frequency	125.425
Service	APP-U
Stat	
DOC	APP-U C-150/450
ER family	Drop down disabled
Example:	ER-BOT-01
PolyID	
Required fields	FIR SECTORNAME
Remarks	ICAO MID WORKSHOP
Upload Status	DN
TEST	Not tested



Adding Extended Range stations Example 1 Cont.

2) Then, check compatibility test.

Outcome indicates “not compatible”

Test for the frequency ...																		
Draft 1	Key	D	603209	Frequency	125.425	Range	150	Height	45000	Radio Horizon	261	Sectorname		Latitude	24D26'00"	N	Service	APP-U
	Region	MID		Country	ICAOTEST MID					Location	ICAO MID 2			Longitude	054D39'00"	E	DOC	APP-U C-150/450
Not compatible with record #2										Margin	-760 NM	Not compatible	APP Upper 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.																		
Draft 2	Key	D	603210	Frequency	125.425	Range	150	Height	45000	Radio Horizon	261	Sectorname		Latitude	24D13'00"	N	Service	APP-U
	Region	MID		Country	ICAOTEST MID					Location	ICAO MID 3			Longitude	055D45'00"	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	62 NM	Required distance	822 NM	Margin	-760 NM	Not compatible	APP Upper Circular	Ext. range				
Plot interference																		
3	Key	R	603016	Frequency	125.425	Range	150	Height	45000	Radio Horizon	261	Sectorname		Latitude	21D40'54"	N	Service	APP
	Region	MID		Country	Saudi Arabia					Location	JEDDAH KAIA			Longitude	039D09'18"	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	871 NM	Required distance	822 NM	Margin	49 NM	Compatible	APP (Upper assumed) Circular	Ext. range				
Plot interference																		
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.																		





Adding Extended Range stations Example 1 Cont.

3) Add extended range to those two

ER-UAE-01 to both of added draft frequencies

Station

Insert from menu or type name

Region

MID

Key

D 603209

Cat

NAT

Channel spacing

25 kHz

8.33 kHz

Country

ICAOTEST MID

Ctry

ZZM

Location

ICAO MID 2

Latitude

24 D 26 ' 00 " N S

Longitude

054 D 39 ' 00 " E W

Frequency

125.425

Service

APP-U

Stat

DOC

APP-U C-150/450

Drop down disabled

150

MOD Range (NM)

45000

MOD Height (feet)

ER family

ER-UAE-01

Example: ER-BOT-01

PolyID

Required fields

FIR SECTORNAME

Remarks

ICAO MID WORKSHOP

Upload Status

TEST

The selected frequency is NOT compatible.

Not tested

Station

Insert from menu or type name

Region

MID

Key

D 603210

Cat

NAT

Channel spacing

25 kHz

8.33 kHz

Country

ICAOTEST MID

Ctry

ZZM

Location

ICAO MID 3

Latitude

24 D 13 ' 00 " N S

Longitude

055 D 45 ' 00 " E W

Frequency

125.425

Service

APP-U

Stat

DOC

APP-U C-150/450

Drop down disabled

150

MOD Range (NM)

45000

MOD Height (feet)

ER family

ER-UAE-01

Example: ER-BOT-01

PolyID

Required fields

FIR SECTORNAME

Remarks

ICAO MID WORKSHOP

Upload Status

DN

TEST

Not tested

Add ER-UAE-01

Save as draft frequencies



Adding Extended Range stations Example 1 Cont.

4) Outcome indicates “compatible” thanks to Ext Range

Draft 1	Key D 603210	Frequency 125.425	Range 150	Height 45000	Radio Horizon 261	Sectorname	Latitude 24D13'00" N	Service APP-U
	Region MID	Country ICAOTEST MID			Location ICAO MID 3		Longitude 055D45'00" E	DOC APP-U C-150/450
Margin 0 NM Compatible							APP Upper Circular	Ext. range ER-UAE-01
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.								
Draft 2	Key D 603209	Frequency 125.425	Range 150	Height 45000	Radio Horizon 261	Sectorname	Latitude 24D26'00" N	Service APP-U
	Region MID	Country ICAOTEST MID			Location ICAO MID 2		Longitude 054D39'00" 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 62 NM	Required distance 822 NM	Margin 0 NM Extended Range	APP Upper Circular	Ext. range ER-UAE-01
Plot interference								

Extended Range





ICAO

RECONNECTING THE WORLD



Adding Extended Range stations Example 2

1) **Add** two frequencies based on 602880 (Oman 126.525) and 602898 (Oman 126.525)

A frequency based on 602880 (Oman 126.525)

Change information (like below)

- Country : ICAO TEST MID,
- Location : ICAO MID 4
- Service : APP-U
- Frequency : 133.500
- Remark: **ICAO MID WORKSHOP**

At this moment, No FIR, No extended range

A frequency based on 602898 (Oman 126.525)

Change information (like below)

- Country : ICAO TEST MID,
- Location : ICAO MID 5
- Service : APP-U
- Frequency : 133.500
- Remark : **ICAO MID WORKSHOP**

At this moment, No FIR, No extended range

Save as draft frequencies

Station

Insert from menu or type name

Region MID Key D 603210 Cat ICAO Channel spacing

Country ICAO TEST MID Ctry ZZM 25 kHz

Location ICAO MID 4 8.33 kHz

Latitude 23 D 31 ' 01 " N S

Longitude 059 D 44 ' 54 " E W

Frequency 133.500

Service ACC-U

Stat

DOC

ACC-U C Drop down disabled

200 MOD Range (NM)

45000 MOD Height (feet)

ER family

Example: ER-BOT-01

PolyID

Required fields

FIR SECTORNAME

Remarks ICAO MID Workshop

Upload Status DN

TEST The selected frequency is compatible. Test completed

Station

Insert from menu or type name

Region MID Key D 603211 Cat ICAO Channel spacing

Country ICAO TEST MID Ctry ZZM 25 kHz

Location ICAO MID 5 8.33 kHz

Latitude 24 D 24 ' 08 " N S

Longitude 056 D 37 ' 02 " E W

Frequency 133.500

Service ACC-U

Stat

DOC

ACC-U C Drop down disabled

200 MOD Range (NM)

45000 MOD Height (feet)

ER family

Example: ER-BOT-01

PolyID

Required fields

FIR SECTORNAME

Remarks ICAO MID Workshop

Upload Status DN

TEST Not tested

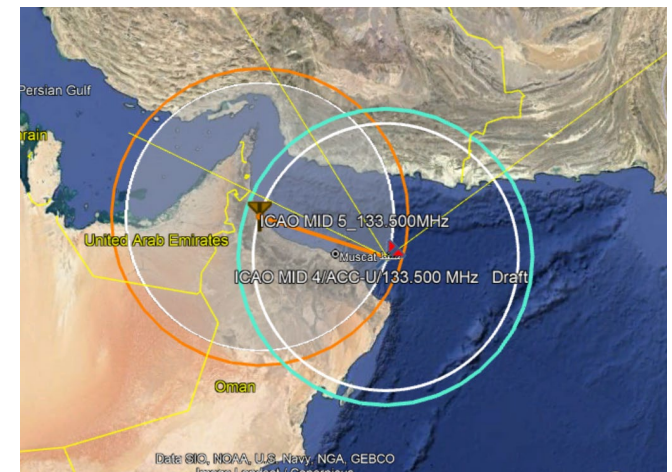


Adding Extended Range stations Example 2 Cont.

2) Then, check compatibility test.

Outcome indicates “not compatible”

Draft 1	Key D 603210	Frequency 133.500	Range 200	Height 45000	Radio Horizon 261	Sectorname	Latitude 23D31'01" N	Service ACC-U	
Region MID	Country ICAOTEST MID	Location ICAO MID 4	Longitude 059D44'54" E	DOC ACC-U C-200/450					
Not compatible with record #2					Margin -742 NM	Not compatible	ACC Upper 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.									
Draft 2	Key D 603211	Frequency 133.500	Range 200	Height 45000	Radio Horizon 261	Sectorname	Latitude 24D24'08" N	Service ACC-U	
Region MID	Country ICAOTEST MID	Location ICAO MID 5	Longitude 056D37'02" E	DOC ACC-U C-200/450					
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 180 NM	Required distance 922 NM	Margin -742 NM	Not compatible	ACC Upper Circular
					Ext. range Plot interference				





Adding Extended Range stations Example 2 Cont.

3) Add extended range to those two

ER-OMN-05 to both of added draft frequencies

Station

Insert from menu or type name

Region MID Key D 603210 Cat ICAO Channel spacing

Country ICAOTEST MID Ctry ZZM 25 kHz

Location ICAO MID 4 8.33 kHz

Latitude 23 D 31 ' 01 " N S

Longitude 059 D 44 ' 54 " E W

Frequency 133.500

Service ACC-U

Stat

DOC

ACC-U C Drop down disabled

200 MOD Range (NM)

45000 MOD Height (feet)

ER family

ER-OMN-05

Example: ER-BOT-01

PolyID

Required fields

FIR SECTORNAME

Remarks ICAO MID Workshop

Upload Status DN

TEST

The selected frequency is NOT compatible. Not tested

Station

Insert from menu or type name

Region MID Key D 603211 Cat ICAO Channel spacing

Country ICAOTEST MID Ctry ZZM 25 kHz

Location ICAO MID 5 8.33 kHz

Latitude 24 D 24 ' 08 " N S

Longitude 056 D 37 ' 02 " E W

Frequency 133.500

Service ACC-U

Stat

DOC

ACC-U C Drop down disabled

200 MOD Range (NM)

45000 MOD Height (feet)

ER family

ER-OMN-05

Example: ER-BOT-01

PolyID

Required fields

FIR SECTORNAME

Remarks ICAO MID Workshop

Upload Status DN

TEST

Not tested

Add ER-OMN-05

Save as draft frequencies

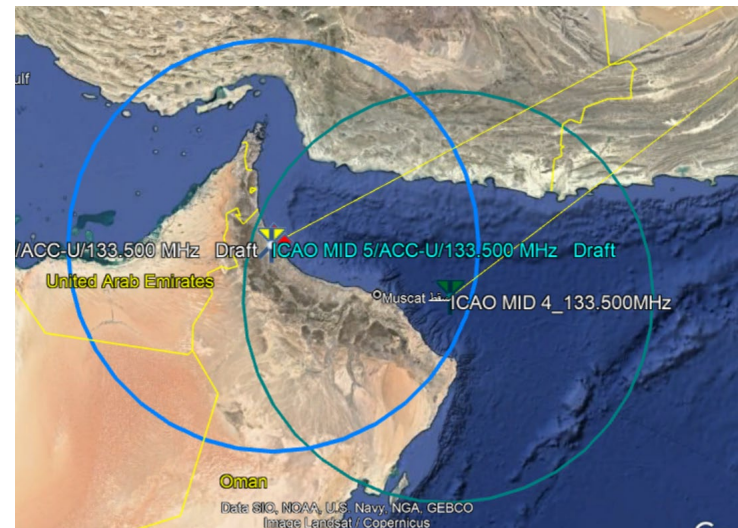


Adding Extended Range stations Example 2 Cont.

4) Outcome indicates “compatible” thanks to Ext Range

Draft 1	Key D 603211	Frequency 133.500	Range 200	Height 45000	Radio Horizon 261	Sectorname	Latitude 24D24'08" N	Service ACC-U
Region MID	Country ICAO TEST MID	Location ICAO MID 5	Longitude 056D37'02" E	DOC ACC-U C-200/450				
				Margin 0 NM	Compatible	ACC Upper Circular	Ext. range ER-OMN-05	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.								
Draft 2	Key D 603210	Frequency 133.500	Range 200	Height 45000	Radio Horizon 261	Sectorname	Latitude 23D31'01" N	Service ACC-U
Region MID	Country ICAO TEST MID	Location ICAO MID 4	Longitude 059D44'54" E	DOC ACC-U C-200/450				
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 180 NM	Required distance 922 NM	Margin 0 NM	Extended Range	ACC Upper Circular
								Ext. range ER-OMN-05
								Plot interference

Extended Range





Demonstrations Area Service



Applying Area Service Example 1

Using an ACC-U frequency in Kuwait (Kuwait, 135.850, ACC-U), check the influence when we applied FIR to the frequency.

A frequency with key code 602061 (Kuwait 135.850 MHz) is not compatible with a frequency with key code 601928 (Saudi Arabia 135.850 MHz)

Test for the frequency										not shown										
1	Key	R 602061	Frequency	135.850	Range	260	Height	45000	Radio Horizon	261	Sectorname		Latitude	29D02'00" N	Service	ACC-U				
	Region	MID	Country	Kuwait	Location	KUWAIT							Longitude	047D34'00" E	DOC	ACC-U C-260/450				
Not compatible with record #2										Margin	-181 NM	Not compatible		ACC Upper 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 601928	Frequency	135.850	Range	100	Height	25000	Radio Horizon	194	Sectorname		Latitude	21D40'54" N	Service	AOC				
	Region	MID	Country	Saudi Arabia	Location	JEDDAH KAIA							Longitude	039D09'18" E	DOC	AOC U-100/250				
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	634 NM	Required distance	815 NM	Margin	-181 NM	Not compatible		Aeronautical Operational Control Circular; Unprotected Service	Ext. range	Plot interference
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.																				



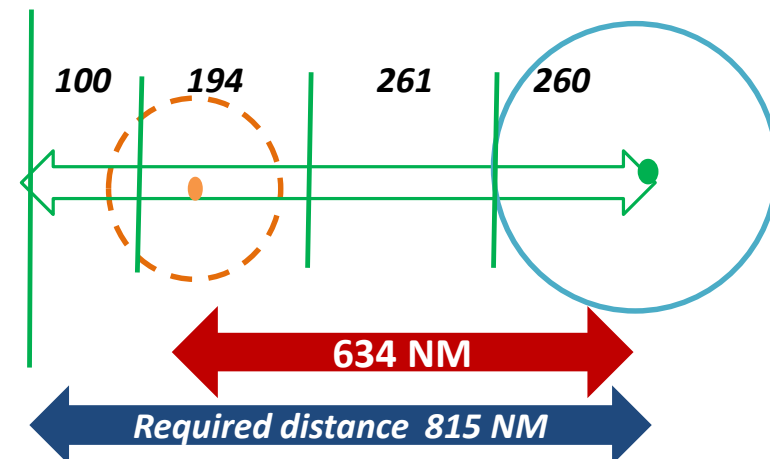
Applying Area Service Example 1 Cont.

A frequency with key code 602061 (Kuwait 135.850 MHz) is not compatible with a frequency with key code 601928 (Saudi Arabia 135.850 MHz)



FF calculates the possible interference based on the radius: 715 NM

$$194 + 261 + 260 = 715 \text{ NM}$$





Applying Area Service Example 1 Cont.

A frequency with key code 602061 (Kuwait 135.850 MHz) is not compatible with a frequency with key code 601928 (Saudi Arabia 135.850 MHz)

If added Kuwait FIR (Poly ID: 99235) to the frequency ACC-U frequency in Kuwait (Kuwait, 135.850, ACC-U, key code 602061), what will be the outcome of the compatibility test?

Insert from menu or type name

Station

Region

MID

Key

D 602061

Cat

NAT

Channel spacing

25 kHz

8.33 kHz

Country

Kuwait

Ctry

KWT

Location

KUWAIT

Latitude

29 D 02 ' 00 " N S

Longitude

047 D 34 ' 00 " E W

Frequency

135.850

Service

ACC-U

Stat

C

DOC

ACC-U C

Drop down disabled

260

MOD Range (NM)

45000

MOD Height (feet))

ER family

Example: ER-BOT-01

PolyID

99235

Required fields

FIR SECTORNAME

FIR KUWAIT

Remarks

Upload Status

DR

TEST

The selected frequency is compatible.

Test completed

If added Poly ID (99235)

Refer to Appendix G of the user manual for Poly ID



Applying Area Service Example 1 Cont.

If added Kuwait FIR (Poly ID: 99235) to the frequency ACC-U frequency in Kuwait (Kuwait, 135.850, ACC-U, key code 602061), what will be the outcome of the compatibility test?

Test for the frequency									
1	Key R 602061	Frequency 135.850	Range 260	Height 45000	Radio Horizon 261	Sectormame	Latitude 29D02'00" N	Service ACC-U	
	Region MID	Country Kuwait			Location KUWAIT		Longitude 047D34'00" E	DOC ACC-U C-260/450	
Not compatible with record #2									
Margin -18 NM Not compatible									
ACC Upper 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 601928	Frequency 135.850	Range 100	Height 25000	Radio Horizon 194	Sectormame	Latitude 21D40'54" N	Service AOC	
	Region MID	Country Saudi Arabia			Location JEDDAH KAIA		Longitude 039D09'18" E	DOC AOC U-100/250	
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 634 NM Required distance 815 NM Margin -18 NM Not compatible									
Aeronautical Operational Control Circular; Unprotected Service									
Ext. range Plot interference									
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.									

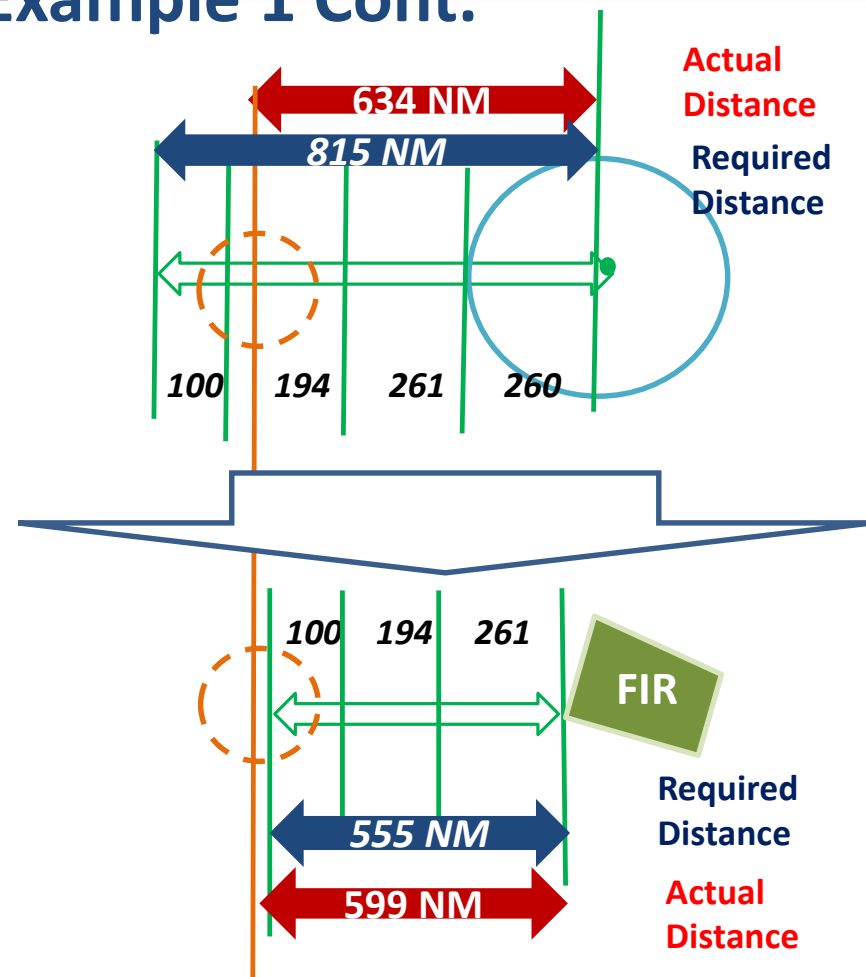
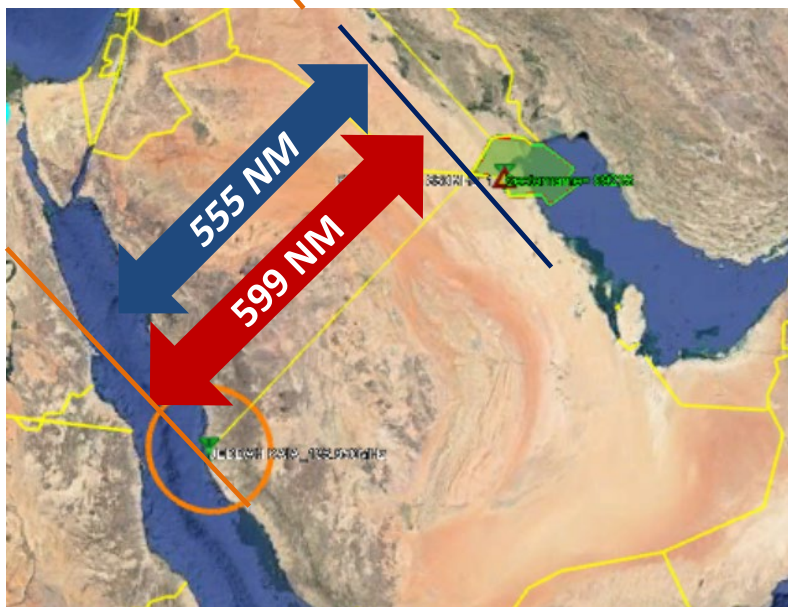
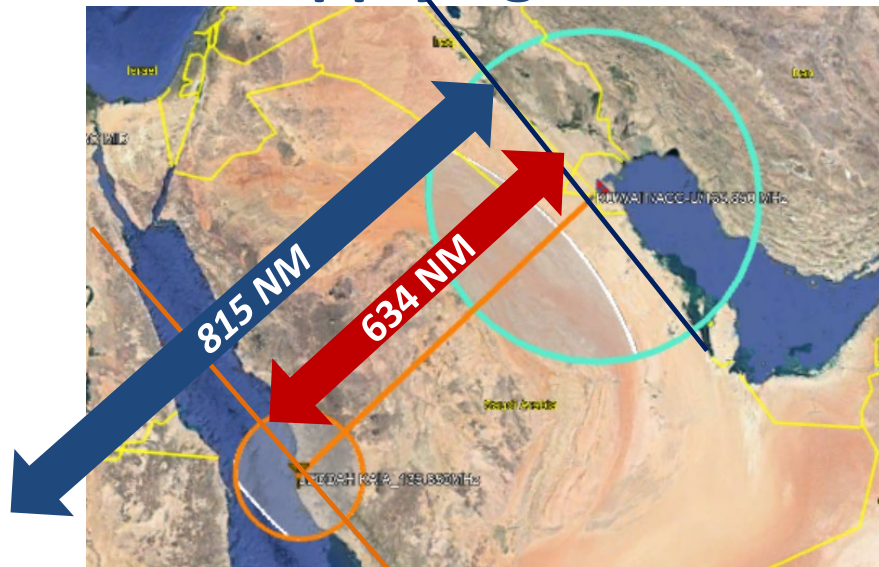
A frequency with key code 602061 (Kuwait 135.850 MHz) was not compatible with a frequency with key code 601928 (Saudi Arabia 135.850 MHz)

Draft Key 602061 Frequency 135.850 Range 260 Height 45000 Radio Horizon 261 Sectormame 99235 Latitude 29D02'00" N Service ACC-U									
1	Region MID	Country Kuwait			Location KUWAIT		Longitude 047D34'00" E	DOC ACC-U C-260/450	
Margin 44 NM Compatible									
ACC Upper Area coverage; 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 601928	Frequency 135.850	Range 100	Height 25000	Radio Horizon 194	Sectormame	Latitude 21D40'54" N	Service AOC	
	Region MID	Country Saudi Arabia			Location JEDDAH KAIA		Longitude 039D09'18" E	DOC AOC U-100/250	
The distance is measured between the edge of the area service (closest point) in record 1 and the location of the station in the current record									
Actual distance 599 NM Required distance 555 NM Margin 44 NM Compatible									
Aeronautical Operational Control Circular; Unprotected Service									
Ext. range Plot interference									
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.									

A frequency with key code 602061 (Kuwait 135.850 MHz) applying Kuwait FIR (Poly ID 99235) is **compatible** with a frequency with key code 601928 (Saudi Arabia 135.850 MHz)



Applying Area Service Example 1 Cont.



A frequency with key code 602061 (Kuwait 135.850 MHz) applying Kuwait FIR (Poly ID 99235) is **compatible** with a frequency with key code 601928 (Saudi Arabia 135.850 MHz)



Applying Area Service Example 2

1) Add two frequencies based on 602250 (Jordan 132.450) and 602176 (Bahrain 132.450)

A frequency based on 602250 (Jordan 132.450)

Change information (like below)

- Country : ICAO TEST MID,
- Location : ICAO MID 4
- Service : ACC-U
- Frequency : 133.775
- Remark: MID WORKSHOP-FIR TEST

At this moment, No FIR, No extended range

A frequency based on 602176 (Bahrain 132.450)

Change information (like below)

- Country : ICAO TEST MID,
- Location : ICAO MID 5
- Service : ACC-U
- Frequency : 133,775
- Remark : MID WORKSHOP-FIR TEST

At this moment, No FIR, No extended range

Save as draft frequencies

Station	
Region	MID
Key	D 603210
Cat	ICAO
Channel spacing	25 kHz
Country	ICAOTEST MID
Ctry	ZZM
Location	ICAO MID 4
Latitude	31 D 43 ' 21 " N S
Longitude	035 D 59 ' 36 " E W
Frequency	133.775
Service	ACC-U
Stat	
DOC	ACC-U C
ER family	Drop down disabled
Example:	ER-BOT-01
PolyID	
Required fields	FIR SECTORNAME
Remarks	MID WORKSHOP- FIR TEST
Upload Status	DN
TEST	Not tested

Station	
Region	MID
Key	D 603211
Cat	ICAO
Channel spacing	25 kHz
Country	ICAOTEST MID
Ctry	ZZM
Location	ICAO MID 5
Latitude	26 D 17 ' 00 " N S
Longitude	050 D 38 ' 00 " E W
Frequency	133.775
Service	ACC-U
Stat	
DOC	ACC-U C
ER family	Drop down disabled
Example:	ER-BOT-01
PolyID	
Required fields	FIR SECTORNAME
Remarks	MID WORKSHOP- FIR TEST
Upload Status	DN
TEST	Not tested



Applying Area Service Example 2



Without poly ID, those two frequencies are not compatible and there are wide possible interference areas. (margin -88 NM)



If added poly ID (99111) to ICAO MID 4, those two frequencies are not compatible, but the sizes of the possible interference areas are minor. (margin -30 NM)

Draft	Key	Frequency	Range	Height	Radio Horizon	Sectorname	Latitude	Service
1	603210	133.775	200	45000	261		21D4321" N	ACC-U
	Region MID		Country ICAO TEST MID		Location ICAO MID 4		Longitude 03D5936" E	DOC ACC-U C-200/450
Not compatible with record #2						Margin 38 NM	Not compatible	ACC Upper 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 for unprotected services are only shown for information.								
Draft	Key	Frequency	Range	Height	Radio Horizon	Sectorname	Latitude	Service
2	603211	133.775	200	45000	261		26D1700" N	ACC-U
	Region MID		Country ICAO TEST MID		Location ICAO MID 5		Longitude 06D3800" E	DOC ACC-U C-200/450
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	834 NM	Required distance	922 NM	Margin 38 NM
								Not compatible
							ACC Upper Circular	Ext. range
								Plot interference
First record is station being tested, records below are stations against which the first station has been tested.								
Compatibility calculations for unprotected services are only shown for information.								

Draft	Key	603210	Frequency	133.775	Range	200	Height	45000	Radio Horizon	261	Sectorname	99111	Latitude	31D43'21" N	Service	ACC-U
1	Region	MID	Country	ICAO:TEST MID	Location	ICAO MID 4							Longitude	03SD9'36" E	DOC	ACC-U C-200/450
Not compatible with record #2									Margin		30 NM	Not compatible		ACC Upper Area coverage: Circular		Ext. range
<div>Plot coverage</div>																
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.																
Draft	Key	603211	Frequency	133.775	Range	200	Height	45000	Radio Horizon	261	Sectorname		Latitude	28D17'00" N	Service	ACC-U
2	Region	MID	Country	ICAO:TEST MID	Location	ICAO MID 5							Longitude	05OD38'00" E	DOC	ACC-U C-200/450
The distance is measured between the edge of the area service (closest point) in record 1 and the location of the station in the current record								Actual distance	692 NM	Required distance	722 NM	Margin		30 NM	Not compatible	
												ACC Upper Circular		Ext. range		
<div>Plot interference</div>																
First record is station being tested, records below are stations against which the first station has been tested.																



ICAO

RECONNECTING THE WORLD



Exercises *Export Submission*



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 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
...

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



Exercises


Special functions

- *Export COM list 3*
- *Undo Submission(s)*







Reference Materials and websites

- Frequency Spectrum Management Panel
 - [The latest frequency finder runtime version](#)
 - [The latest Doc 9718](#) Handbook on Radio Frequency Spectrum Requirements for Civil Aviation Volume II — Frequency assignment planning criteria for aeronautical radio communication and navigation systems
(Planning criteria and terminology (2.6), and more)

- User Manual: Click  on the Start page and VHF COM home page
(This includes Appendix G - Poly ID)

- Other user manuals are in 

  User manual - InstallRuntime2017 10/30/2017 6:23 PM

  User manual - QuickReferencenew 10/25/2017 7:13 PM

- Saved submissions are in 