



| ICAO

# INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY



# ICAO Workshop on Frequency Finder

## Easy Reference for Exercise

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# Prep for FF operation

## 1. Download Runtime version of the Frequency Finder

**Download** from the FSMP website the zip-file

***FF2023.02.RT.exe***

**[www.icao.int/safety/fsmp/documents/frequencyfinder](http://www.icao.int/safety/fsmp/documents/frequencyfinder)**

Remove earlier version of Frequency Finder, if any.

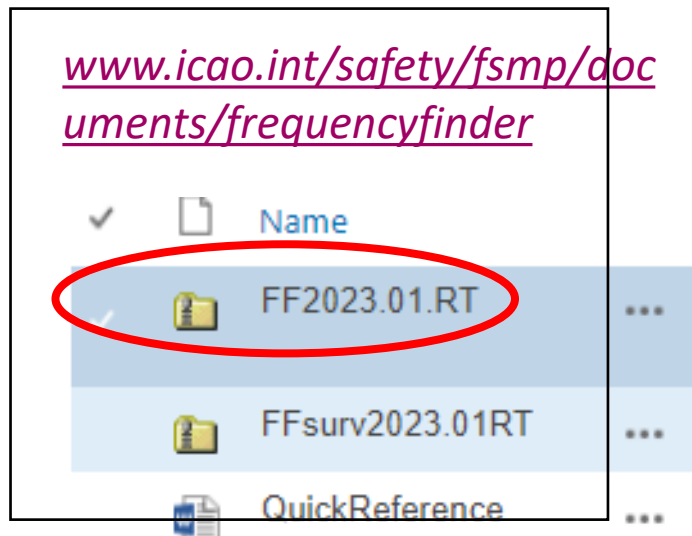
**Unzip and run the installer file FF2023.02.Rsetup.exe**

Select to create desktop icon

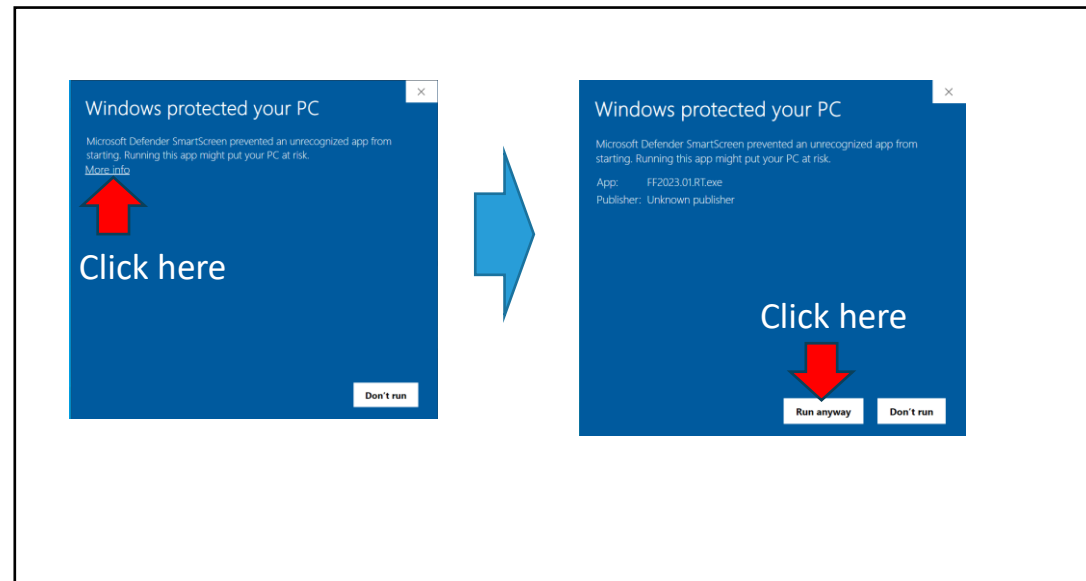
***--See next slides***

1. Go to the FSMP website. Unzip and run the installer file.  
**(FF2023.02.RT.exe)**
2. Depending on the Windows version, you might get security related checks like below. In that case, please act as required.

①

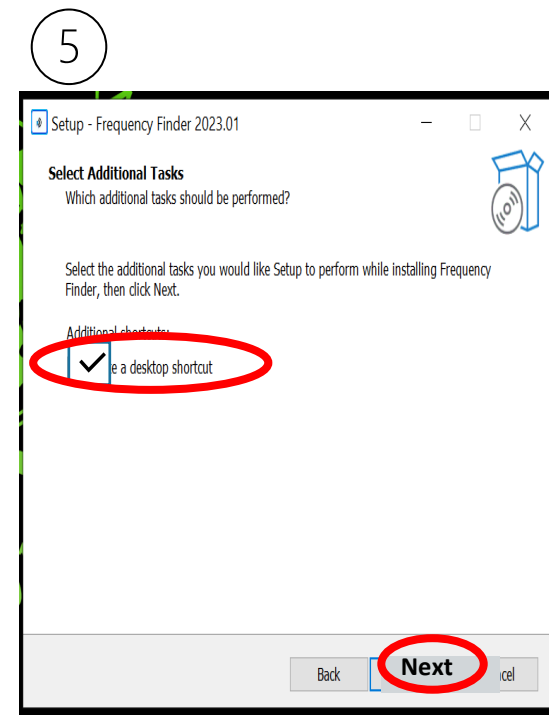
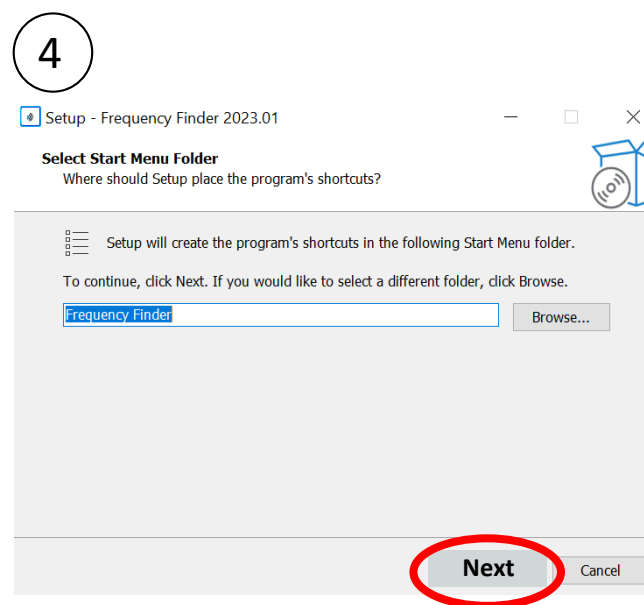
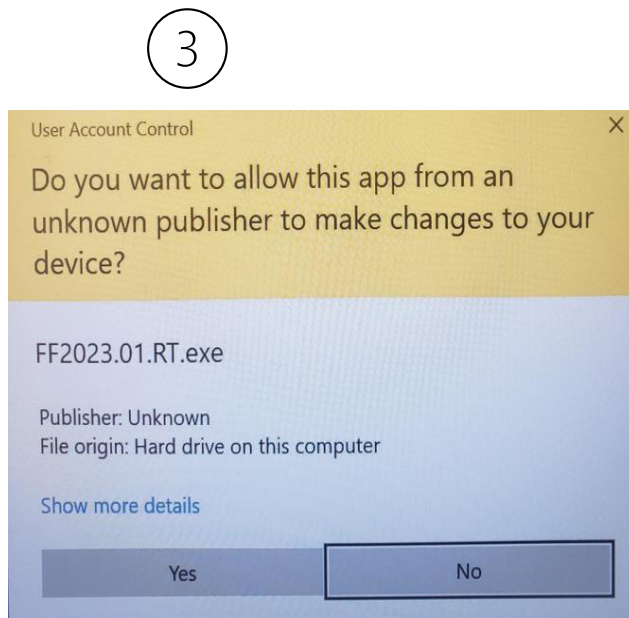


②

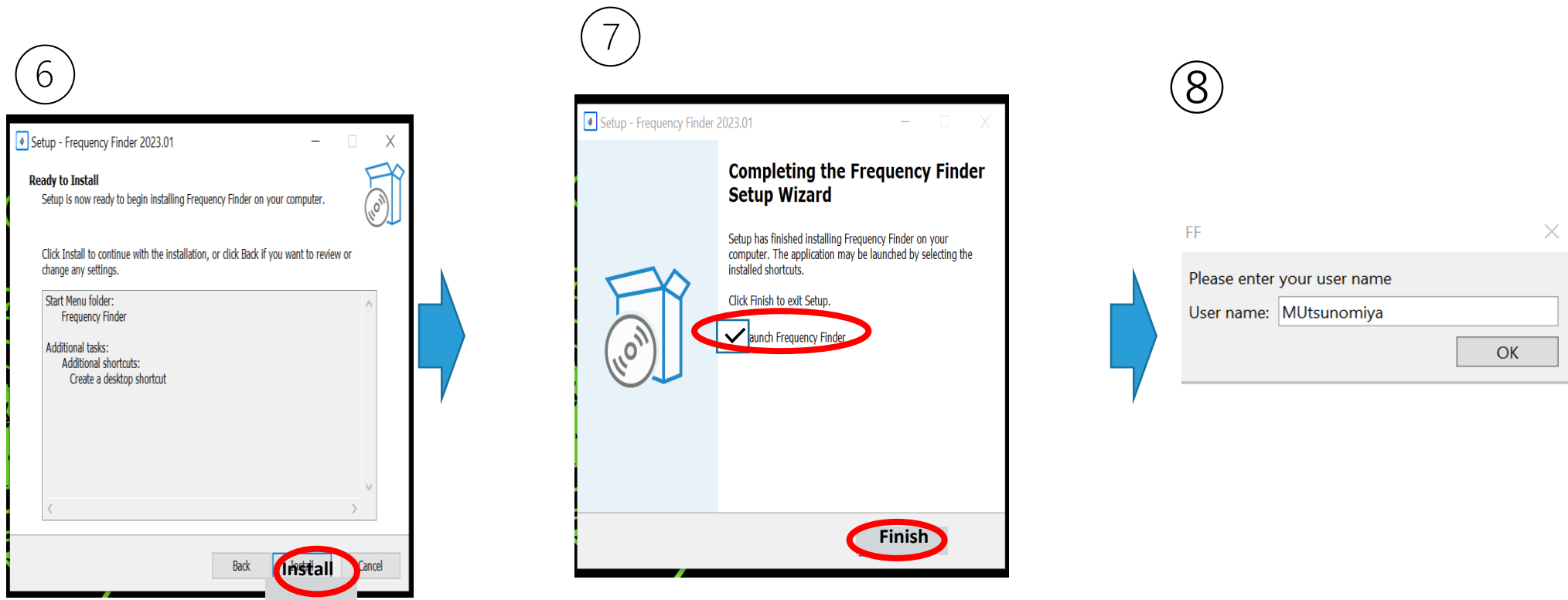




3. Click “Yes” in the Welcome to the Setup Wizard message
4. Click “Next” in Select Start Menu Folder
5. Check ☒ to Create a desktop shortcut and click “Next” in Select Additional Tasks message



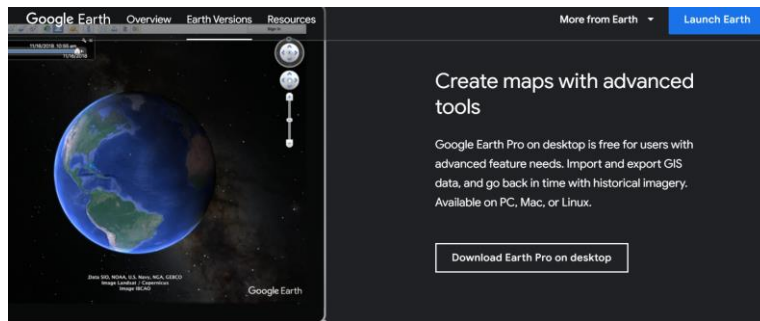
6. Click “Install” reply to a message, Ready to Install,
7. Check ☒ to Launch Frequency Finder and click “Finish” for completing the Frequency Finder Setup Wizard.
8. Enter your user name (enter your user name, see example)



# Prep for FF operation

## 2. Download and install google Earth

<https://www.google.com/earth/versions/#earth-pro>



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:

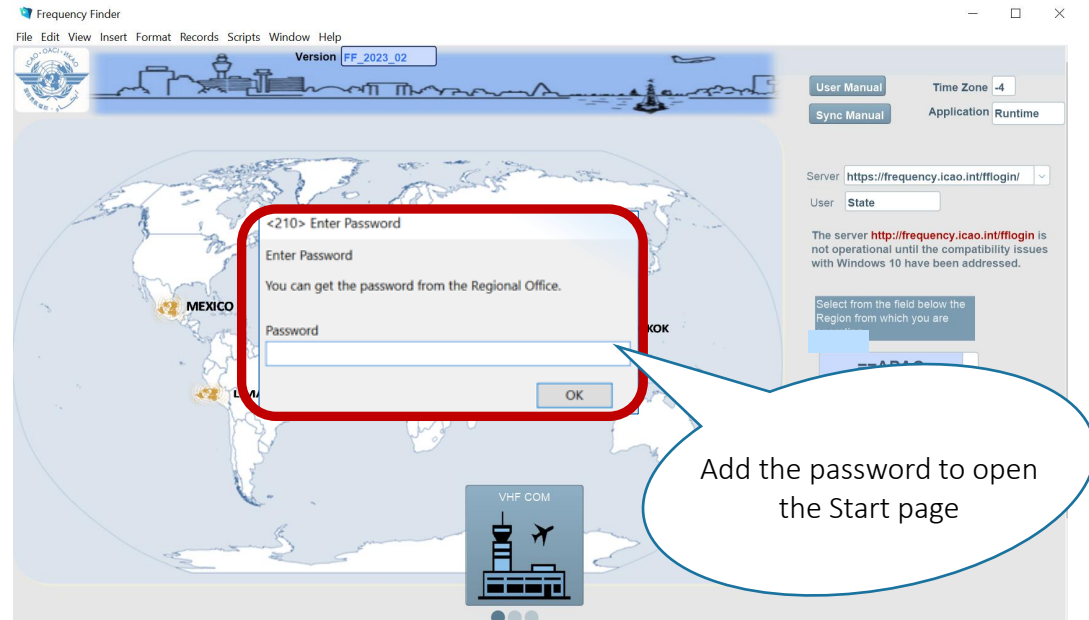
**( Installing Frequency Finder(Run-time version))**

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

## *Exercises- Start page/Home page*

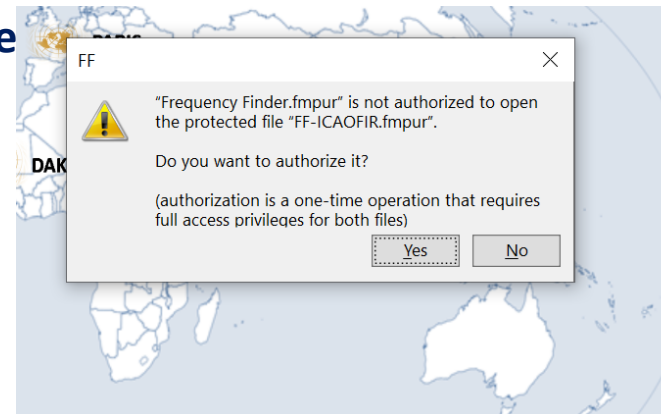
# Open Frequency Finder - Start page



You might get this message



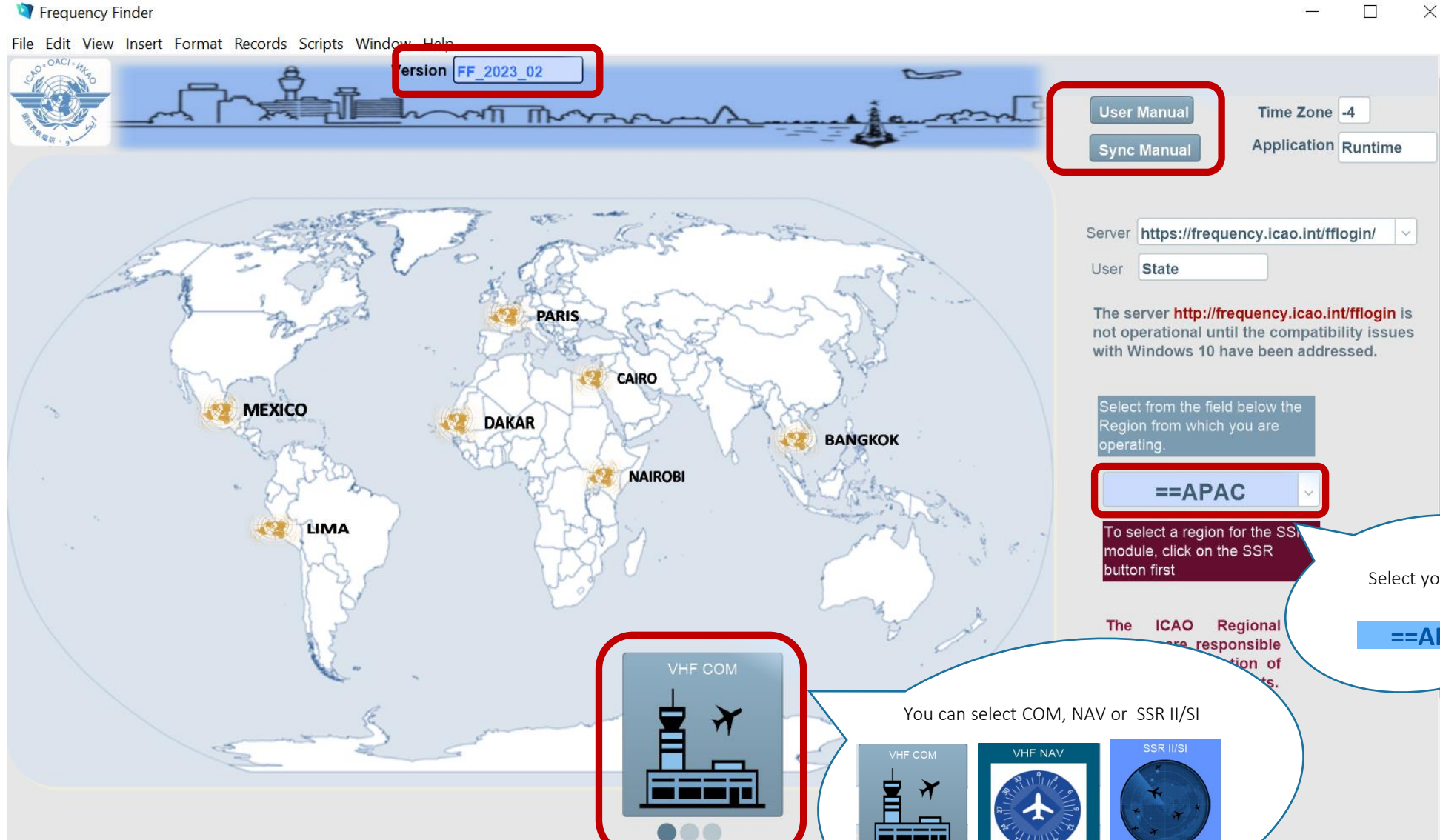
– select “Yes”





# Start page and the selection of VHF-COM module

10



Click "VHF COM"

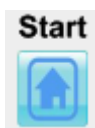
Select your region

==APAC

You can select COM, NAV or SSR II/SI



# Start page and VHF Home page

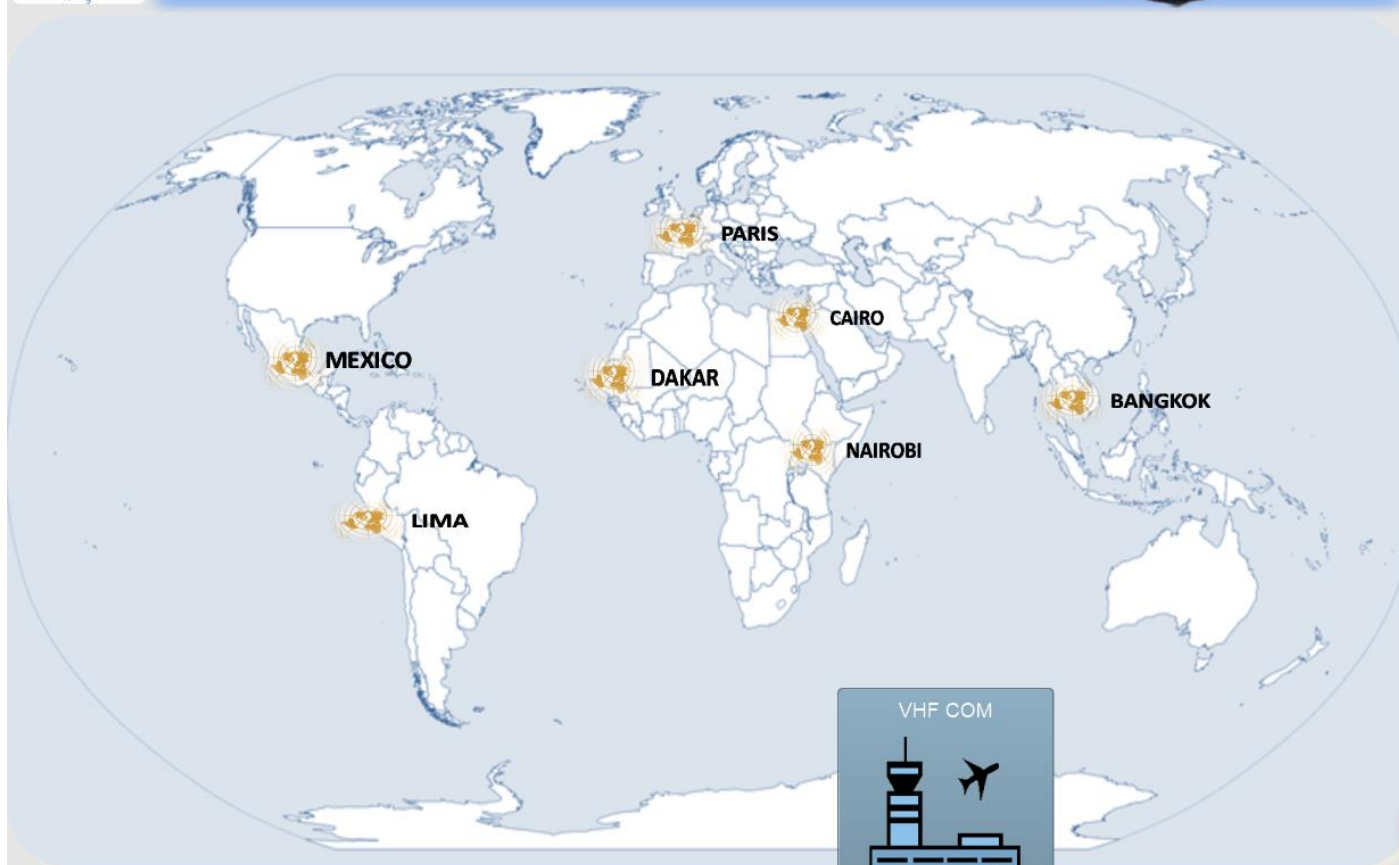


Frequency Finder

File Edit View Insert Format Records Scripts Window Help



Version **FF\_2023\_02**



User Manual

Time Zone -4

Sync Manual

Application Runtime

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

User State

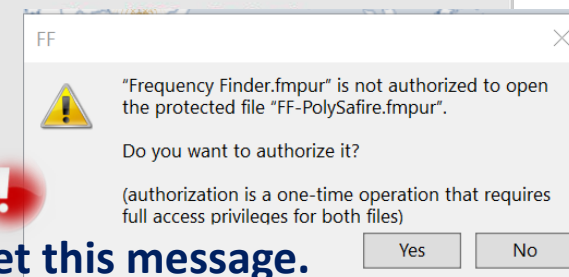
The server <http://frequency.icao.int/fflogin> is not operational until the compatibility issues with Windows 10 have been addressed.

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

==APAC

① Click "APAC"

To select a region for the module, click on the S button first



You might get this message.

– select "Yes"

② Click "VHF COM"

# 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\_2023\_01  
User: [empty]  
Application: Runtime  
Connection status: Connected  
Time Zone: -4

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

Download

Go to COM list 3:

AFI  
APAC Active Region  
CAR  
EUR  
MID  
SAM  
GLOBAL

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

Check Sync

Download COM 20/05/2023 8:19:50 AM  
Sync status COM COM list 3 synchronized  
Recent downloads from Global COM list 3 and Global table of polygons  
Download ICAOFIR 05/07/2018 0:32:24  
Download Poly Safire 17/12/2022 3:07:29 AM  
Sync status Poly Table of Polygons synchronized

Recent uploads to Global COM

COM AFI synchronized	21/04/2023 5:00:07 PM UTC
COM APAC synchronized	08/05/2023 7:46:45 AM UTC
COM CAR synchronized	21/02/2023 9:15:15 PM UTC
COM EUR synchronized	08/06/2022 1:11:49 PM UTC
COM MID synchronized	18/05/2023 10:32:47 AM UTC
COM SAM synchronized	20/05/2023 8:19:50 AM UTC
COM EUR/NAT synchronized	08/06/2022 1:11:49 PM UTC
COM EUR/SAFIRE synchronized	08/06/2022 1:11:49 PM UTC
Polygons Safire synchronized	13/12/2019 2:17:08 AM UTC
All Polygons Safire reloaded:	13/12/2019 2:17:08 AM UTC

Summary COM:  
20/05/2023 8:19:50 AM

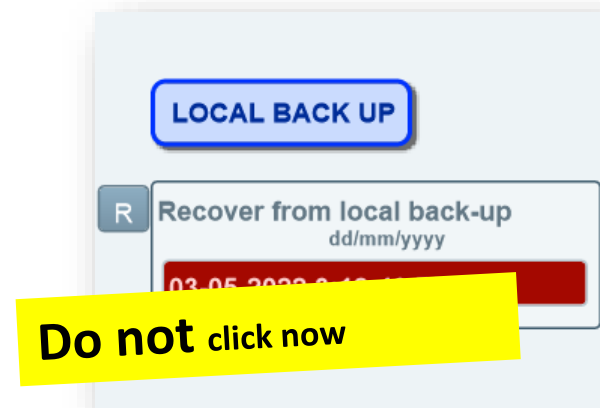
LOCAL BACK UP

R Recover from local back-up  
dd/mm/yyyy

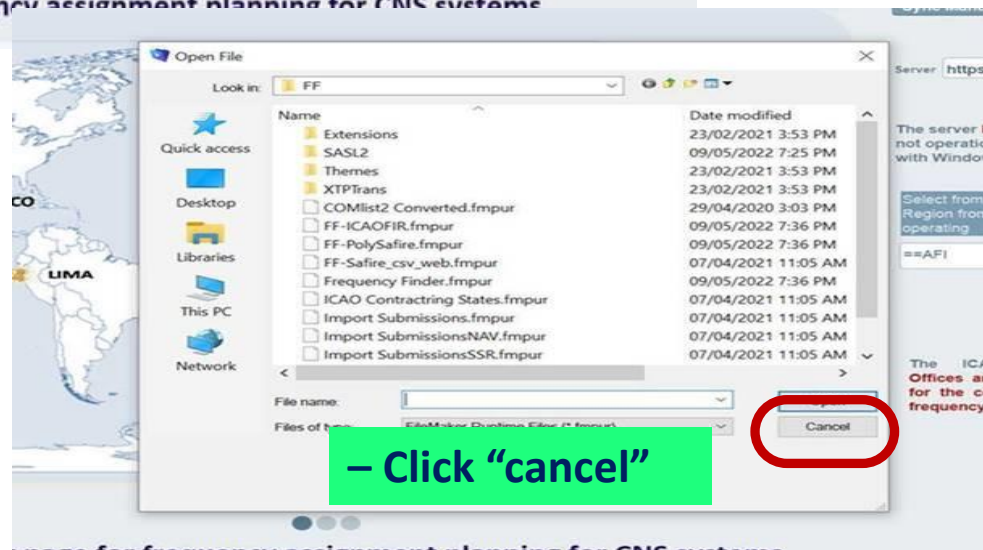
## Home page VHF COM list 3

### 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





You might get following messages below.



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



Start  **VHF COM air/ground communication systems 117.975 - 137 MHz** [User Manual](#) [Sync Manual](#) [Check Sync](#)

Version **FF\_2023.01** User Application **Runtime**  Connection status **Time Zone -5**

Server  [Download](#)

**Go to COM list 3:**

**AFI**

**APAC** Active Region

**CAR**

**EUR**

**MID**

**SAM**

**GLOBAL**

**Synchronization**

[Check Sync](#)

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

Recent uploads to Global COM

Summary COM:

20/12/2022 5:13:25 AM

COM SAM synchronized 16/02/2022 10:44:10 PM UTC

COM EUR/NAT synchronized 08/06/2022 1:11:49 PM UTC

COM EUR/SAFIRE synchronized 08/06/2022 1:11:49 PM UTC

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

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

**Click Download**

[Cancel](#) [Download](#)

**LOCAL BACK UP**

[Recover from local back-up](#)  
dd/mm/yyyy  
**16-12-2022 10:07:21 PM**

**<2B> Update COM list 3**

The global COM list 3 was modified.

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

## *Exercises- Integrity Check*



ICAO

# RECONNECTING THE WORLD

## Start page and VHF Home page

17

①

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

==APAC Active Region Connected Not Connected. You can continue working OFF-LINE VIEW ROUTES -4

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

Download

Go to COM list 3:

AFI  
APAC Active Region  
CAR  
EUR  
MID  
SAM  
GLOBAL

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  
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 downloads from Global COM list 3 and Global table of polygons

<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



## Start page and VHF Home page

VHF COM air/ground communication systems 117.975 - 137 MHz

User Manual  
Sync Manual  
Check Sync

Version  
FF\_2023.01

User

Application  
State

==APAC  
Active Region

Connection status  
Connected

Time Zone  
-5

Server 

Download

Go to COM list 3:

AFI  
APAC  
CAR  
EUR  
MID  
SAM  
GLOBAL

Active Region

Check Sync

Download COM 28-12-2022 4:28:52 PM  
Sync status COM COM list 3 synchronized  
Recent downloads from Global COM list 3 and Global table of polygons  
Download ICAOFIR 05/07/2018 1:32:24  
Download Poly Safire 13/12/2019 2:33:26 AM  
Sync status Poly Table of Polygons synchronized

Recent uploads to Global COM  
Summary COM:  
20/12/2022 5:13:25 AM

COM AFI synchronized 01/12/2022 11:36:31 AM UTC  
COM APAC synchronized 20/12/2022 5:13:25 AM UTC  
COM CAR synchronized 08/11/2021 7:09:12 PM UTC  
COM EUR synchronized 08/06/2022 1:11:49 PM UTC  
COM MID synchronized 02/11/2022 8:35:33 AM UTC  
COM SAM synchronized 16/02/2022 10:44:10 PM UTC  
COM EUR/NAT synchronized 08/06/2022 1:11:49 PM UTC  
COM EUR/SAFIRE synchronized 08/06/2022 1:11:49 PM UTC  
Polygons Safire synchronized 13/12/2019 2:17:08 AM UTC  
All Polygons Safire reloaded: 13/12/2019 2:17:08 AM UTC

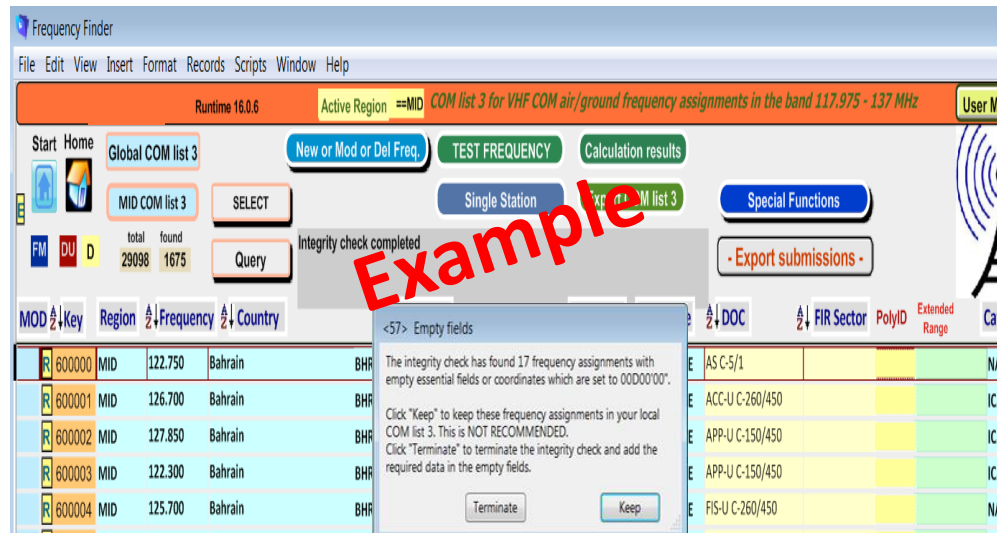
LOCAL BACK UP

R Recover from local back-up  
dd/mm/yyyy  
16-12-2022 10:07:21 PM

① Click "APAC"

② "Integrity Check" will start"  
– See Next slide

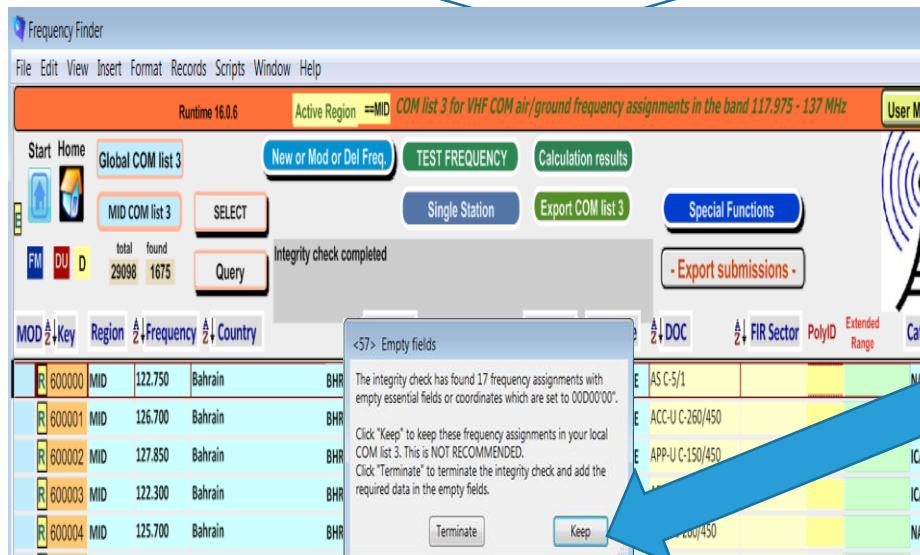
# Integrity Check



## 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*



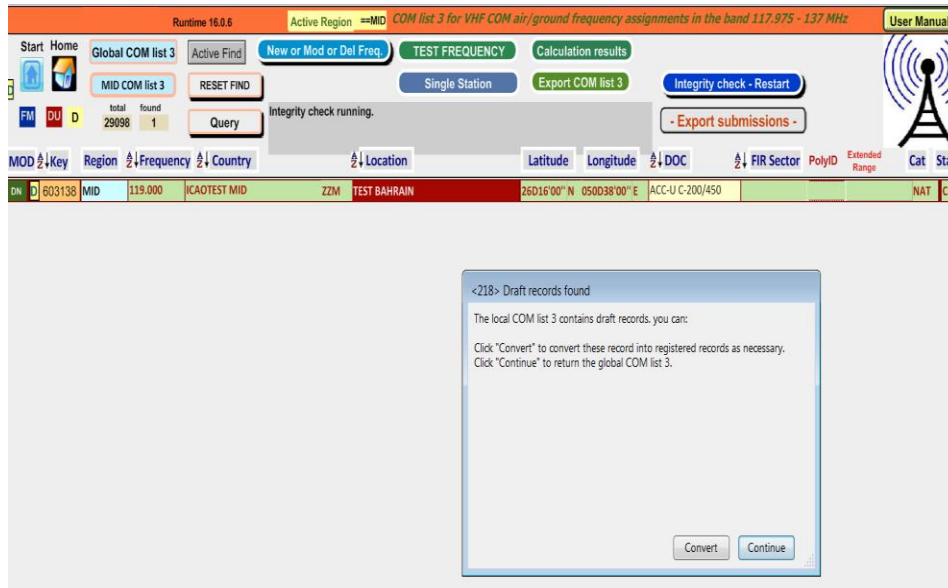
## Integrity Check – Outside the range

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



## 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!**

Now you are in the COM List 3

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC
R	600000	MID	122.750	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	AS C-5/1
R	600001	MID	126.700	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	ACC-U C-260/450
R	600002	MID	127.850	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	APP-U C-150/450
R	600003	MID	122.300	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	APP-U C-150/450
R	600004	MID	125.700	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	FIS-U C-260/450
R	600005	MID	122.450	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	AS C-5/1
R	600006	MID	127.200	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	ATIS B-260/450
R	600007	MID	121.900	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	AS C-5/1
R	600008	MID	121.850	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	AS C-5/1
R	600009	MID	119.100	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	TWR C-25/40
R	600010	MID	118.500	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	TWR C-25/40
R	600011	MID	128.800	Bahrain	BHR	BAHRAIN	26D16'00" N 050D38'00" E	VOLMET B-260/450

## *Exercises- Query*

**Integrity check is completed!**

Now you are in  
**the Regional  
COM List 3**

Click **“Query”**

## Query

Frequency Finder

File Edit View Insert Format Records Scripts Window Help

FF\_2023.01 Runtime Active Region ==MID COM list 3 for VHF COM air/ground frequency assignments in the band 117.975 - 137 MHz User Manual Sync Man

Start Home Delete Record NEW/MOD Frequency TEST frequency Calculation results

Global COM list 3 SELECT MAPPING Export COM list 3

30724 total 1759 found

Click **“Query”**

Special Functions - Export submissions -

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC	FIR Sector	PolyID	Extended Range	F	Cat	Stat	Remarks
R	601511	MID	127.575	Bahrain	BHR BAHRAIN	26D17'00" N	050D38'00" E	ACC-L C-194/250				ICAO	M		VHF extension to SI
R	601512	MID	128.775	Bahrain	BHR BAHRAIN	26D17'00" N	050D38'00" E	ACC-L C-194/250				ICAO	M		VHF extension to SI
R	602355	MID	129.425	Bahrain	BHR BAHRAIN	26D17'00" N	050D38'00" E	ACC-L C-194/250				ICAO			TEST; added by RW
R	602194	MID	120.550	Bahrain	BHR BAHRAIN	26D17'00" N	050D38'00" E	ACC-U C-260/450				ICAO	N		instead of 120.725
R	602163	MID	120.725	Bahrain	BHR BAHRAIN	26D17'00" N	050D38'00" E	ACC-U C-260/450				ICAO	X		Fi; Also ACC-L
R	602175	MID	120.925	Bahrain	BHR BAHRAIN	26D17'00" N	050D38'00" E	ACC-U C-260/450				ICAO	N		31/1/07 replace 120
R	602171	MID	125.950	Bahrain	BHR BAHRAIN	26D17'00" N	050D38'00" E	ACC-U C-260/450				ICAO	N		27/11
R	602172	MID	125.975	Bahrain	BHR BAHRAIN	26D17'00" N	050D38'00" E	ACC-U C-260/450				ICAO	N		27/11
R	602223	MID	126.125	Bahrain	BHR BAHRAIN	26D17'00" N	050D38'00" E	ACC-U C-260/450				ICAO	N		Surveillance radar
R	602224	MID	126.175	Bahrain	BHR BAHRAIN	26D17'00" N	050D38'00" E	ACC-U C-260/450				ICAO	N		Surveillance radar

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

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  Frequency  No Frequency selected

Country  Service  No Service selected

Location  FIR Sector  No FIR name selected

Ext. Range  No ER selected

Find

Last Query - parameters

==APAC

==Pakistan

[Modify/reload] last find

Click here to use the parameters of your most recent query; you can modify these parameters in the box "Query Database"

New Query

To delete parameters for the query click button New Query

- Select criteria for the query from the fields in the blue box
- Select geographic parameters (Region, Country and Location) first, if required
- 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. Select only **Frequency OR Service OR FIR Sector OR Extended Range**

- 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

Then you will see the outcome of your Query

# Query

## Query – Select Frequency, Service or FIR Sector

Selection of Frequency, Service or FIR Sector is mutually exclusive.  
Only one (1) parameter can be selected.

Button **Find** returns the COM list 3 with the found frequencies, Services or FIR Sectors for the selected:

Region, If no Country/Location was selected

Country, if no Location was selected

Location, if a Location was selected

**Button New Query** – Enter or re-enter query parameters

**Button Modify/Redo last find**: Enters the query parameters for the most recent query

**Button Regional COM list 3** – Returns the COM list 3 for the Active Region

# *Exercises- Query*

## **Exercise 1** - Query database

– New Zealand– DUNEDIN TWR – 120.700

## **Exercise 2** - Re-do and modify query

–New Zealand– DUNEDIN – 120.700

## **Exercise 3** - Go back to APAC COM List 3 and return the results of the last Query

## **Exercise 4** - Find all frequency assignments for the service TWR in your country.

## **Exercise 5** - Select frequencies (select several frequencies)

– Select New Zealand - ARDMORE- 118.100

- ARDMORE- 121.000

- AUCKLAND- 124.300



## Exercise 5 - - Select frequencies (select several frequencies)

- Select New Zealand - ARDMORE- 118.100
- ARDMORE- 121.000
- AUCKLAND- 124.300

25

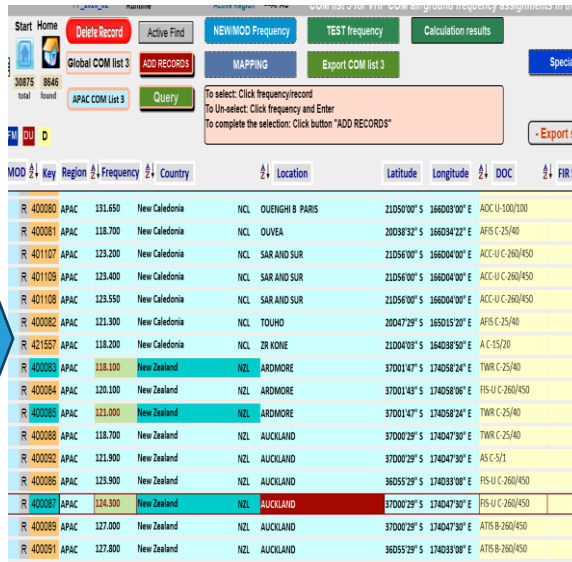


MOD	Key	Region	Frequency	Country	Location
R	400080	APAC	131.650	New Caledonia	NCL OUENGHI B PARIS
R	400081	APAC	118.700	New Caledonia	NCL OUVEA
R	401107	APAC	123.200	New Caledonia	NCL SAR AND SUR
R	401109	APAC	123.400	New Caledonia	NCL SAR AND SUR
R	401108	APAC	123.550	New Caledonia	NCL SAR AND SUR
R	400082	APAC	121.300	New Caledonia	NCL TOUHO
R	421557	APAC	118.200	New Caledonia	NCL ZR KONE
R	400083	APAC	118.100	New Zealand	NZL ARDMORE
R	400084	APAC	120.100	New Zealand	NZL ARDMORE
R	400085	APAC	121.000	New Zealand	NZL ARDMORE
R	400088	APAC	118.700	New Zealand	NZL AUCKLAND

Select the first one

Click

SELECT

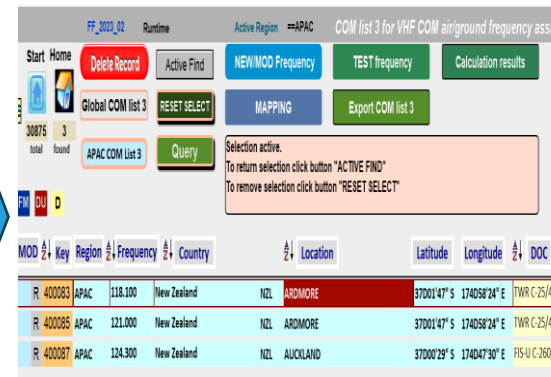


MOD	Key	Region	Frequency	Country	Location
R	400080	APAC	131.650	New Caledonia	NCL OUENGHI B PARIS
R	400081	APAC	118.700	New Caledonia	NCL OUVEA
R	401107	APAC	123.200	New Caledonia	NCL SAR AND SUR
R	401109	APAC	123.400	New Caledonia	NCL SAR AND SUR
R	401108	APAC	123.550	New Caledonia	NCL SAR AND SUR
R	400082	APAC	121.300	New Caledonia	NCL TOUHO
R	421557	APAC	118.200	New Caledonia	NCL ZR KONE
R	400083	APAC	118.100	New Zealand	NZL ARDMORE
R	400084	APAC	120.100	New Zealand	NZL ARDMORE
R	400085	APAC	121.000	New Zealand	NZL ARDMORE
R	400088	APAC	118.700	New Zealand	NZL AUCKLAND
R	400089	APAC	121.900	New Zealand	NZL AUCKLAND
R	400086	APAC	123.900	New Zealand	NZL AUCKLAND
R	400087	APAC	124.300	New Zealand	NZL AUCKLAND
R	400091	APAC	127.800	New Zealand	NZL AUCKLAND

Select the other  
two frequencies

Click

ADD RECORDS

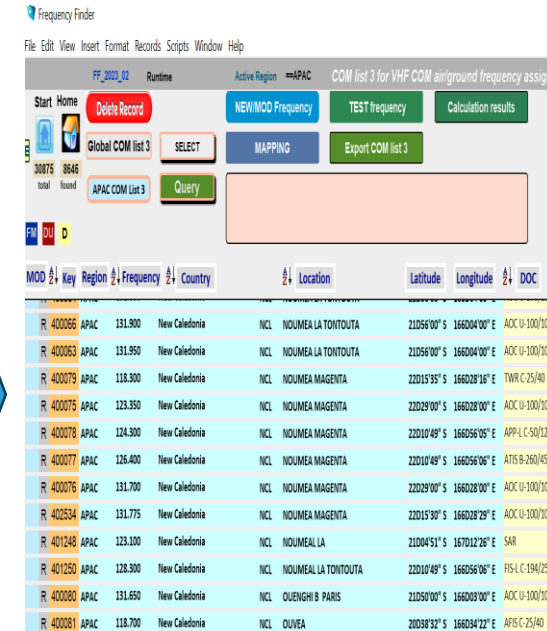


MOD	Key	Region	Frequency	Country	Location
R	400083	APAC	118.100	New Zealand	NZL ARDMORE
R	400085	APAC	121.000	New Zealand	NZL ARDMORE
R	400087	APAC	124.300	New Zealand	NZL AUCKLAND

Now you selected  
those three  
correctly

Click

RESET SELECT



MOD	Key	Region	Frequency	Country	Location
R	400086	APAC	131.900	New Caledonia	NCL NOUMEA LA TONTOUTA
R	400063	APAC	131.950	New Caledonia	NCL NOUMEA LA TONTOUTA
R	400079	APAC	118.300	New Caledonia	NCL NOUMEA MAGENTA
R	400075	APAC	123.350	New Caledonia	NCL NOUMEA MAGENTA
R	400078	APAC	126.400	New Caledonia	NCL NOUMEA MAGENTA
R	400077	APAC	126.400	New Caledonia	NCL NOUMEA MAGENTA
R	400076	APAC	131.700	New Caledonia	NCL NOUMEA MAGENTA
R	402534	APAC	131.775	New Caledonia	NCL NOUMEA MAGENTA
R	401248	APAC	123.100	New Caledonia	NCL NOUMEA LA
R	401250	APAC	128.300	New Caledonia	NCL NOUMEA LA TONTOUTA
R	400080	APAC	131.650	New Caledonia	NCL OUENGHI B PARIS
R	400081	APAC	118.700	New Caledonia	NCL OUVEA

Go back to  
APAC COM  
List 3

## *Exercises- Test frequency*

# Exercises- Test frequency

1. Perform compatibility test – single frequency
  - Query: Bhutan, BUMTHANG, Frequency 122.550
  - Click test frequency and single frequency
2. Perform compatibility test - found frequencies
  - Select: French Polynesia– APATAKI 122.000 and BORA BORA 118.900
  - Click Add Records
  - Then click Test frequencies and found frequencies
3. Perform compatibility test - found frequencies
  - Query: Samoa
  - Then click Test frequencies and found frequencies
4. Perform compatibility tests in your country.  
For example, find all frequency assignments for the service TWR in your country and perform compatibility tests.

# *Exercises*

## *Test Frequency & Understand the result*

# Exercises

## Test Frequency & Understand the result

29

1. Perform compatibility test – single frequency
  - Query: Papua New Guinea, PORT MORESBY 123.400 MHz
  - Click test frequency and single frequency
2. Perform compatibility test - found frequencies
  - Select: French Polynesia– APATAKI 122.000 and BORA BORA 118.900
  - Click Add Records
  - Then click Test frequencies and found frequencies

# Test Frequency

## – Exercise 1: Papua New Guinea, PORT MORESBY 123.400 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 ==CAR Frequency 122.900  
Country ==Nicaragua Service No Service selected  
Location No Location selected FIR Sector No FIR name selected  
Ext. Range No ER selected

Find

Last Query - parameters  
==CAR  
==Nicaragua  
122.900

New Query

To delete parameters for the query click button New Query

[Modify/redon] 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  
3. Select Frequency or Service or FIR Sector or Extended Range, if required  
Note: combinations of frequency, service and sector and Extended Range are

- ① Click **“Query”**
- ② Select State: Papua New Guinea  
Location: PORT MORESBY  
Frequency 123.400
- ③ Click **“Find”**

FF\_2023\_02 Runtime Active Region ==APAC COM list 3 for VHF COM air/ground frequency assignments in the band 117.975 - 137 MHz

Start Home Delete Record Active Find NEW/MOD Frequency TEST frequency Calculation results

Global COM list 3 RESET QUERY MAPPING Single Frequency Special Functions

APAC COM List 3 Query

Query active.  
To return query click button "Cancel"  
To cancel query: click button "Cancel"

Found Freq Cancel

- Export submissions -

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC	FIR Sector	PolyID	Extended Range	F	Cat
R	400270	APAC	123.400	Papua New Guinea	PNG	PORT MORESBY	09D27'00" S	147D13'00" E	ACC-U C-260/450				ICAO

Frequency Finder found 1 entry with the 123.400 MHz in PORT MORESBY of Papua New Guinea

Select Key 400270 (Papua New Guinea)

- ④ Click **“Test Frequency”**

- ⑤ Select **“Single frequency”**

# Test Frequency

## – Exercise 1: Papua New Guinea, PORT MORESBY 123.400 MHz

Start Home Delete Record Active Find NEW/MOD Frequency TEST frequency Calculation results

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

30875 total 1 found APAC COM List 3 Query

Query active.  
To return query click button  
To cancel query: click button

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.

No Map Cancel Map

MOD Key Region Frequency Country Loc

R 400270 APAC 123.400 Papua New Guinea PNG PORT MORESBY

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

COM Data Base (COM LIST 3) Summary Calculations Active Region APAC

Regional COM list Summary Calculations Delete all records Co-frequency details Adj. frequency details

Re-do calculations

Date	Key	Freq	Region	Country	Location	Service	Margin	Result	Margin	Result	Adj. freq.
08_Oct_2023 3:09:07	400270	R 123.400	APAC	Papua New Guinea	PORT MORESBY	ACC-U	-261	Not compatible	***	Compatible	
08_Oct_2023 2:57:22	400458	R 121.900	APAC	Samoa	APIA FALEOLO	AS	298	Compatible	***	Compatible	
08_Oct_2023 2:57:19	400459	R 118.500	APAC	Samoa	APIA FALEOLO	APP-L	175	Compatible	***	Compatible	
08_Oct_2023 2:57:16	400457	R 118.100	APAC	Samoa	APIA FALEOLO	APP-L	-55	Not compatible	***	Compatible	
08_Oct_2023 2:56:40	404488	R 118.100	APAC	Cook Islands	AVARUA RAROTONGA	TWR	260	Compatible	***	Compatible	
08_Oct_2023 2:54:14	404511	R 118.900	APAC	French Polynesia	BORA BORA	TWR	***	Compatible	***	Compatible	
08_Oct_2023 2:54:12	401418	R 122.000	APAC	French Polynesia	APATAKI	TWR	***	Compatible	***	Compatible	

⑦ Summary Calculation is displayed

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



# Test Frequency

## – Exercise 1: Papua New Guinea, PORT MORESBY 123.400 MHz

*Result indicated :*

*400270 (Papua New Guinea) is **Not compatible** with 417628*

2 / 2 records

Regional COM list **Show all records**

Test for the frequency ...123.400MHz

Go to adj. frequency calc. Go to Summary Plot interference - All

1	Key	R 400270	Frequency	123.400	Range	260	Height	45000	Radio Horizon	261	Sectorname		Latitude	09D27'00" S	Service	ACC-U
	Region	APAC	Country	Papua New Guinea	Location	PORT MORESBY							Longitude	147D13'00" E	DOC	ACC-U C-260
Not compatible with record #2																
Margin -261 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 417628	Frequency	123.400	Range	260	Height	45000	Radio Horizon	261	Sectorname		Latitude	12D03'45" S	Service	ACC-U
	Region	APAC	Country	Australia	Location	Maningrida							Longitude	134D13'54" 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 781 NM Required distance 1042 NM Margin -261 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 between unprotected services are only shown for information.																

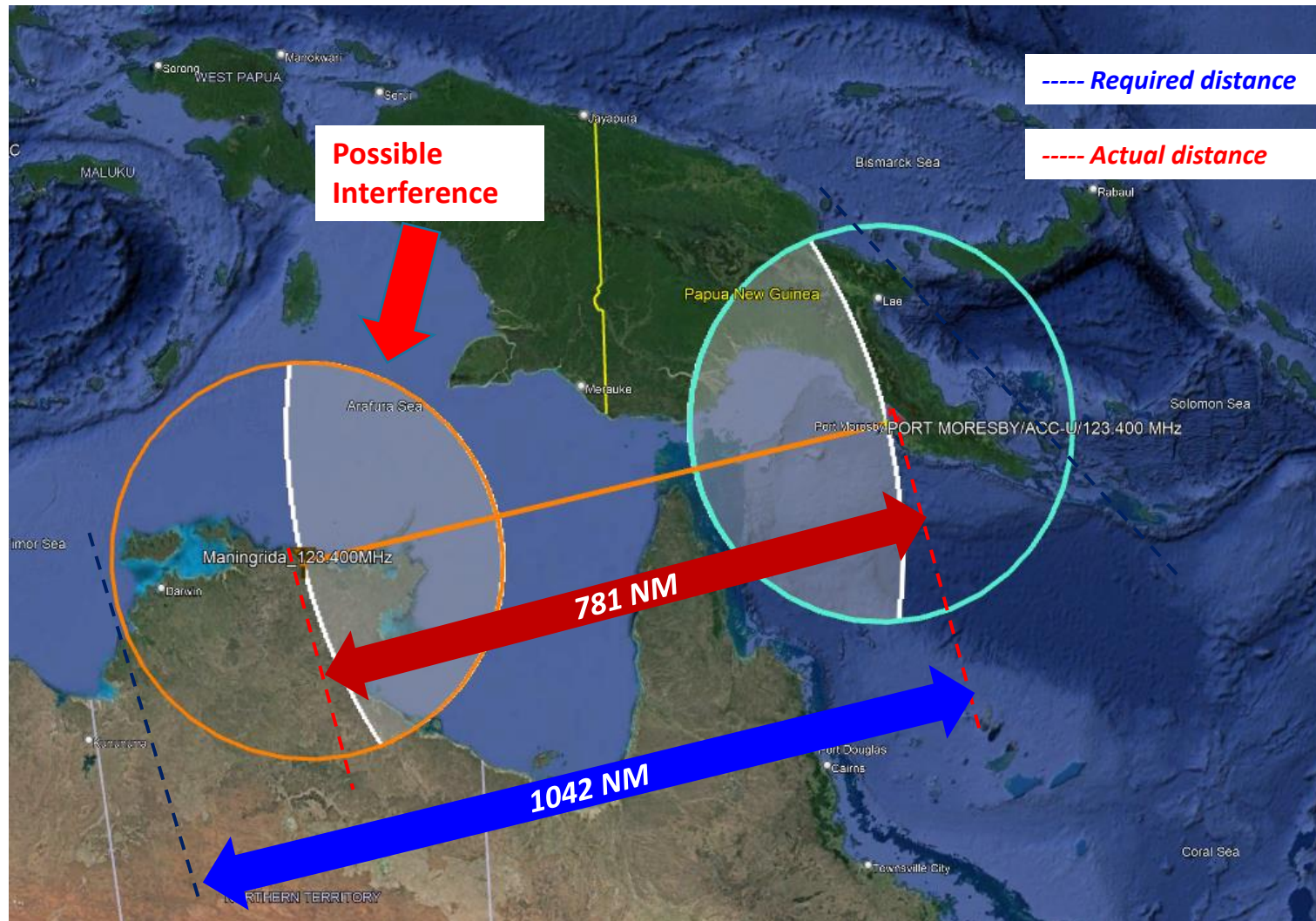


Click on plot interference (- all)  
if required

# Compatibility test result (Exercise 1)

The result indicated: *400270* is **Not compatible** with *417628*

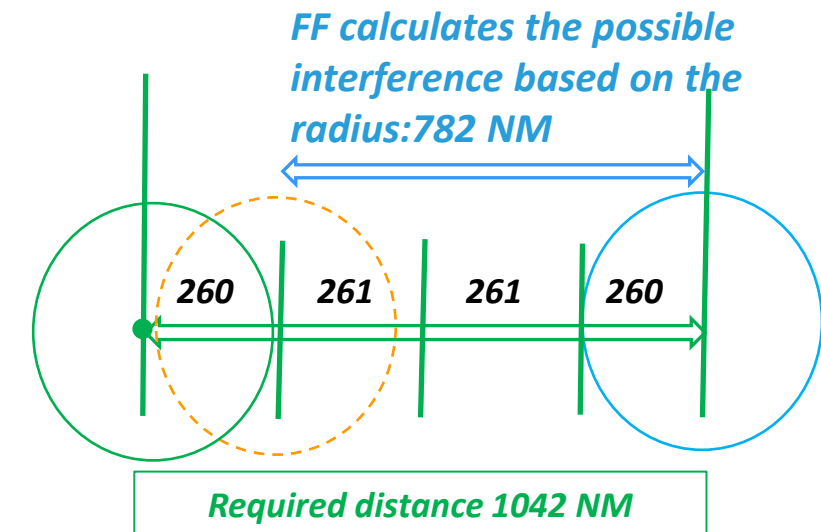
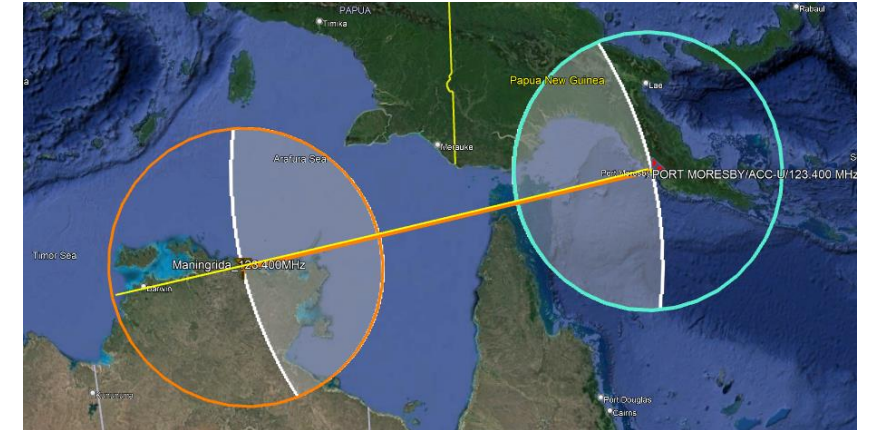
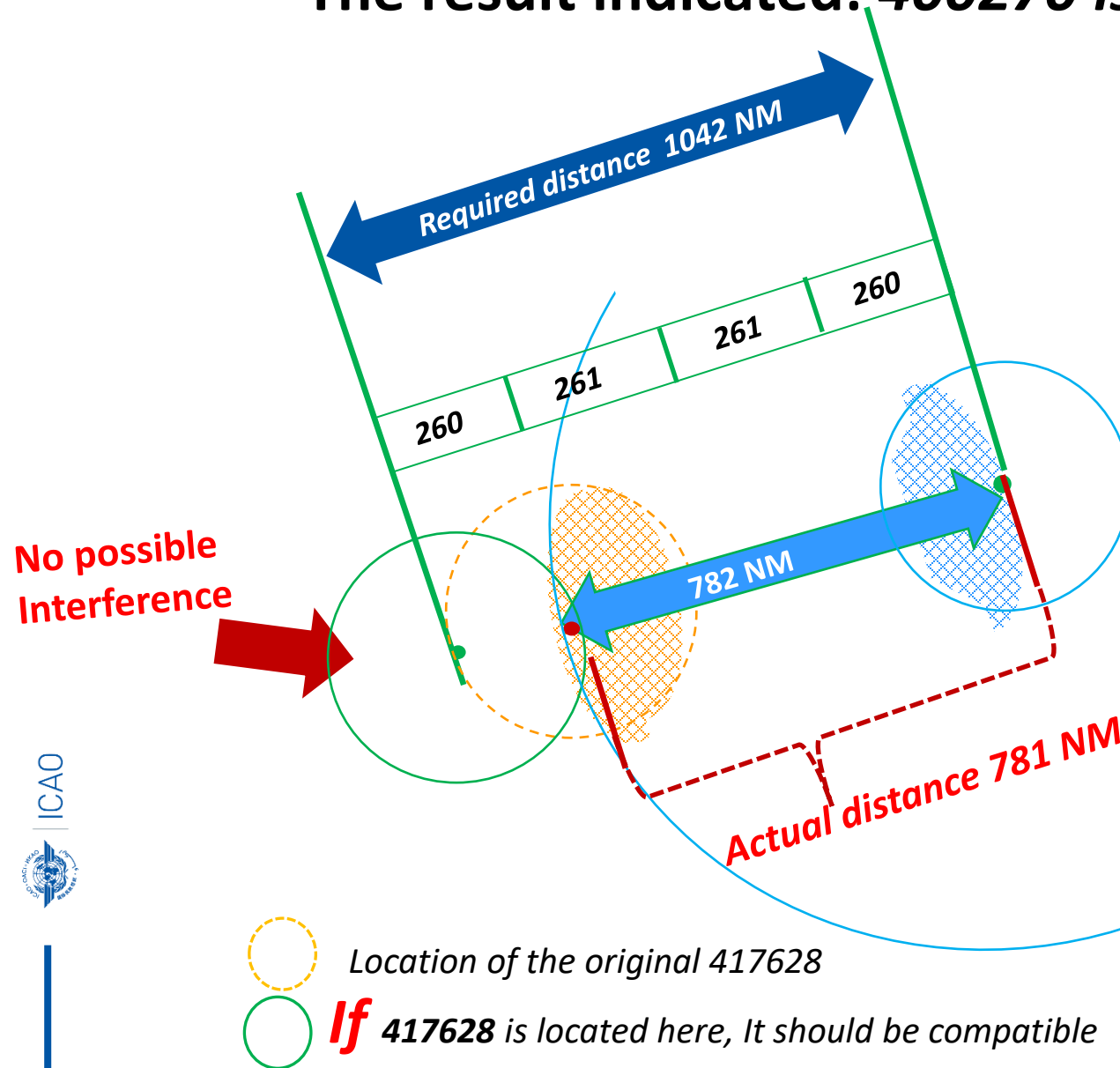
33



# Compatibility test result (Exercise 1)

34

The result indicated: 400270 is **Not compatible** with 417628



# Test Frequency

## – Exercise 2: Japan, UTSUNOMIYA, 122.150 MHz

QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY

Region ==APAC Frequency 122.150

Country ==Japan R Service No Service selected

Location ==UTSUNOMIYA R FIR Sector No FIR name selected

Ext. Range No ER selected

Query Database

Find

- ① Click **“Query”**
- ② Select State: **Japan**,  
Location: **UTSUNOMIYA**  
Frequency: **122.150 Mhz**
- ③ Click **“Find”**

Start Home Delete Record Active Find NEW/MOD Frequency TEST frequency Calculation results

Global COM list 3 RESET QUERY MAPPING Export COM list 3

APAC COM List 3 Query

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

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC
R	419471	APAC	122.150	Japan	UTSUNOMIYA	36D29'00" N	139D52'00" E	APP-I C-75/250

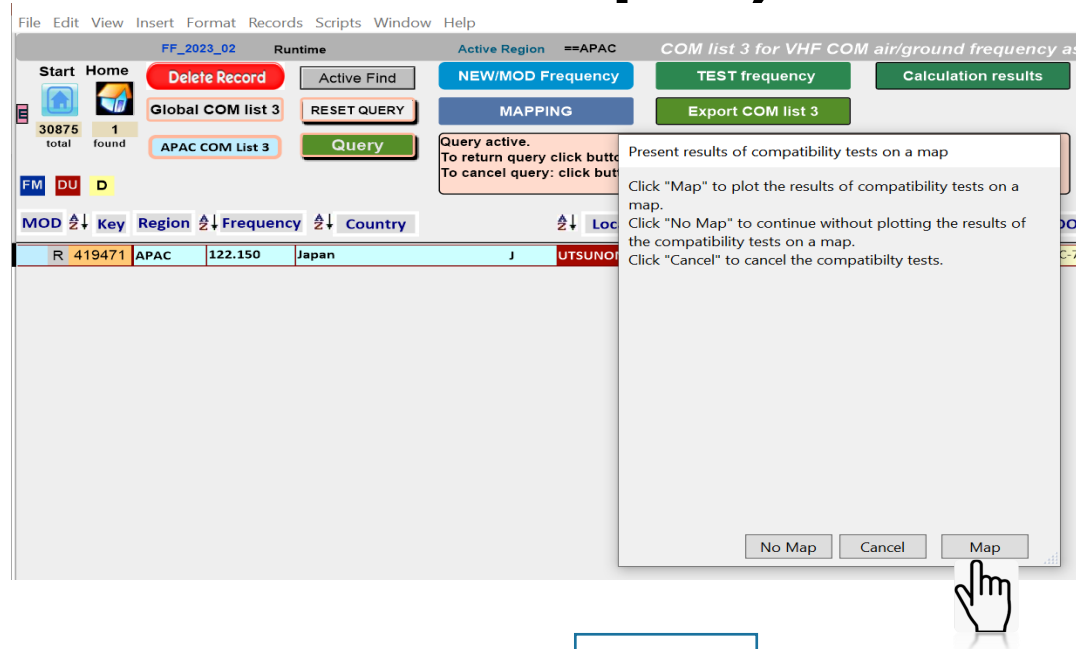
Frequency Finder found a 122.150,  
UTSUNOMIYA, Japan  
(Key codes **419471** )

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



# Test Frequency

## – Exercise 2: Japan, UTSUNOMIYA, 122.150 MHz



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

The screenshot shows the 'Summary Calculations' window. The 'Co-frequency details' button is highlighted. The table below shows the results of the tests.

Date	Key	D	Frequency	Region	Country	Location	Service	Margin	Result	Margin	Result	Adj. freq.
08_Oct_2023 12:20:41	419471	R	122.150	APAC	Japan	UTSUNOMIYA	APP-I	-136	Not compatible	***	Compatible	
08_Oct_2023 12:11:29	419471	R	122.150	APAC	Japan	UTSUNOMIYA	APP-I	-136	Not compatible	***	Compatible	
08_Oct_2023 12:14:44	419471	R	122.150	APAC	Japan	UTSUNOMIYA	APP-I	-136	Not compatible	***	Compatible	

⑦ Summary Calculation is displayed

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

# Test Frequency

## – Exercise 2: Japan, UTSUNOMIYA, 122.150 MHz

*Result indicated : 419471 is Not compatible with 418863*

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

3 / 3 records

Regional COM list Show all records

Test for the frequency ...122.150MHz

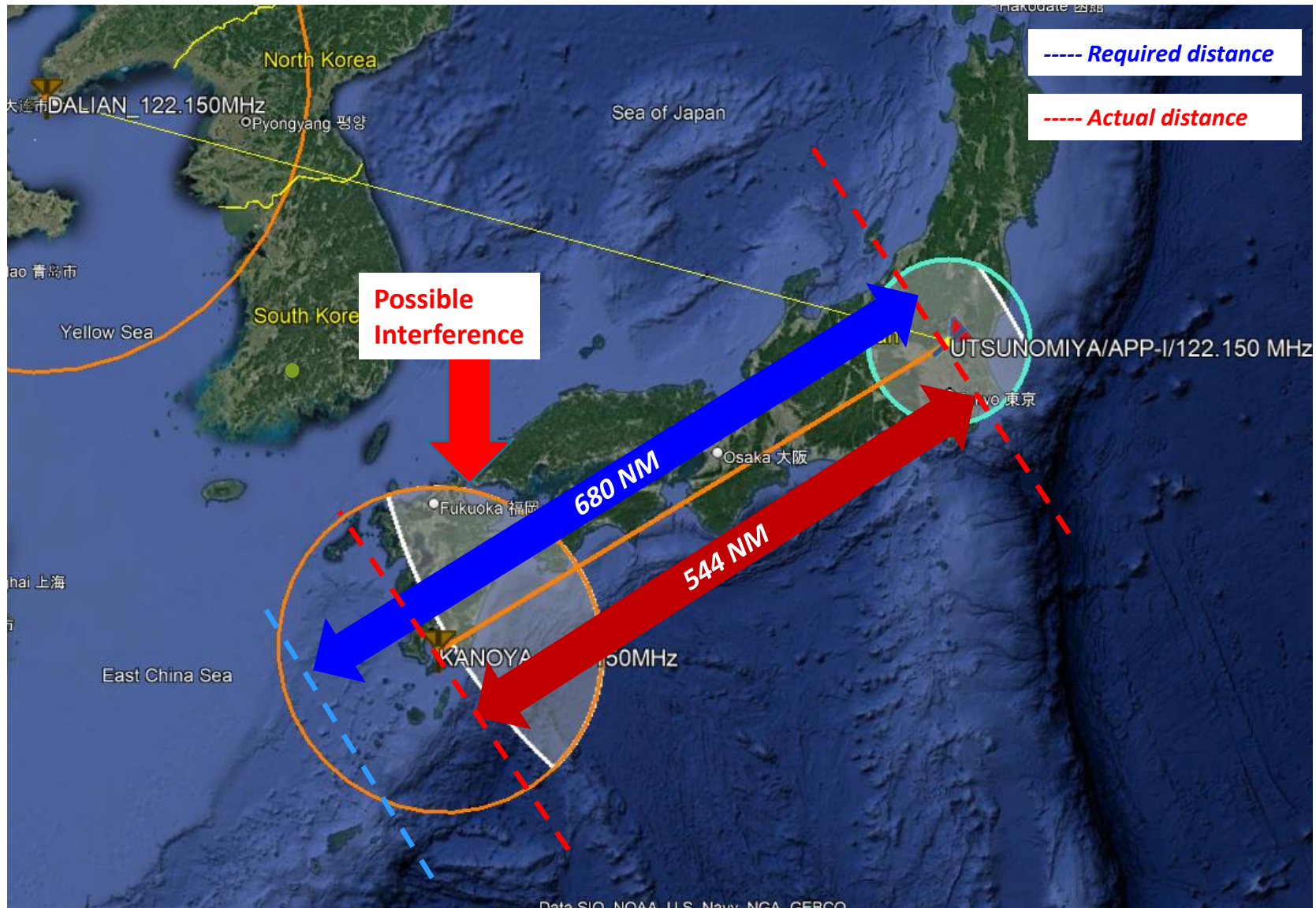
Go to adj. frequency calc. Go to Summary Plot interference - All

Key	R	Frequency	Range	Height	Radio Horizon	Sectorname	Latitude	Longitude	Service	DOC	Ext. range
1	R 419471	122.150	75	25000	194		36D29'00" N	139D52'00" E	APP-I	APP-I C-75/250	
Region	APAC				Location	UTSUNOMIYA					
Country	Japan										
Not compatible with record #2											
Margin -136 NM Not compatible											
APP Intermediate 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.											
2	R 418863	122.150	150	45000	261		31D22'00" N	130D50'00" E	APP-U	APP-U C-150/450	
Region	APAC				Location	KANOYA					
Country	Japan										
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	544 NM	Required distance	680 NM	Margin -136 NM		Not compatible		APP 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 between unprotected services are only shown for information.											
3	R 401200	122.150	260	45000	261		38D57'00" N	121D32'00" E	ACC-U	ACC-U C-260/450	
Region	APAC				Location	DALIAN					
Country	China										
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	790 NM	Margin 91 NM		Compatible		ACC Upper Circular		Ext. range	
Plot interference											

# Compatibility test result (Exercise 2)

## 419471 is Not compatible with 418863

38

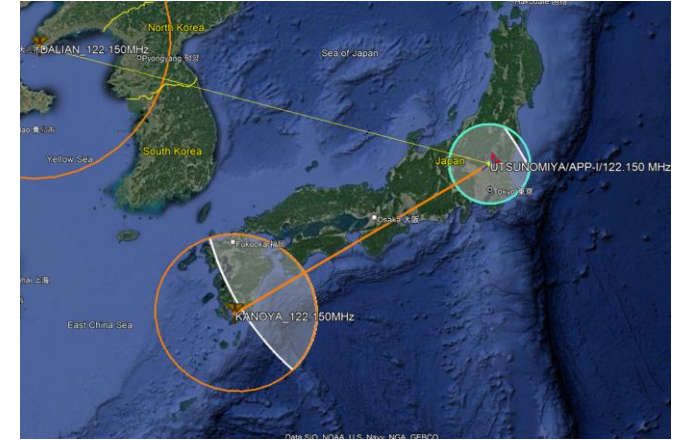
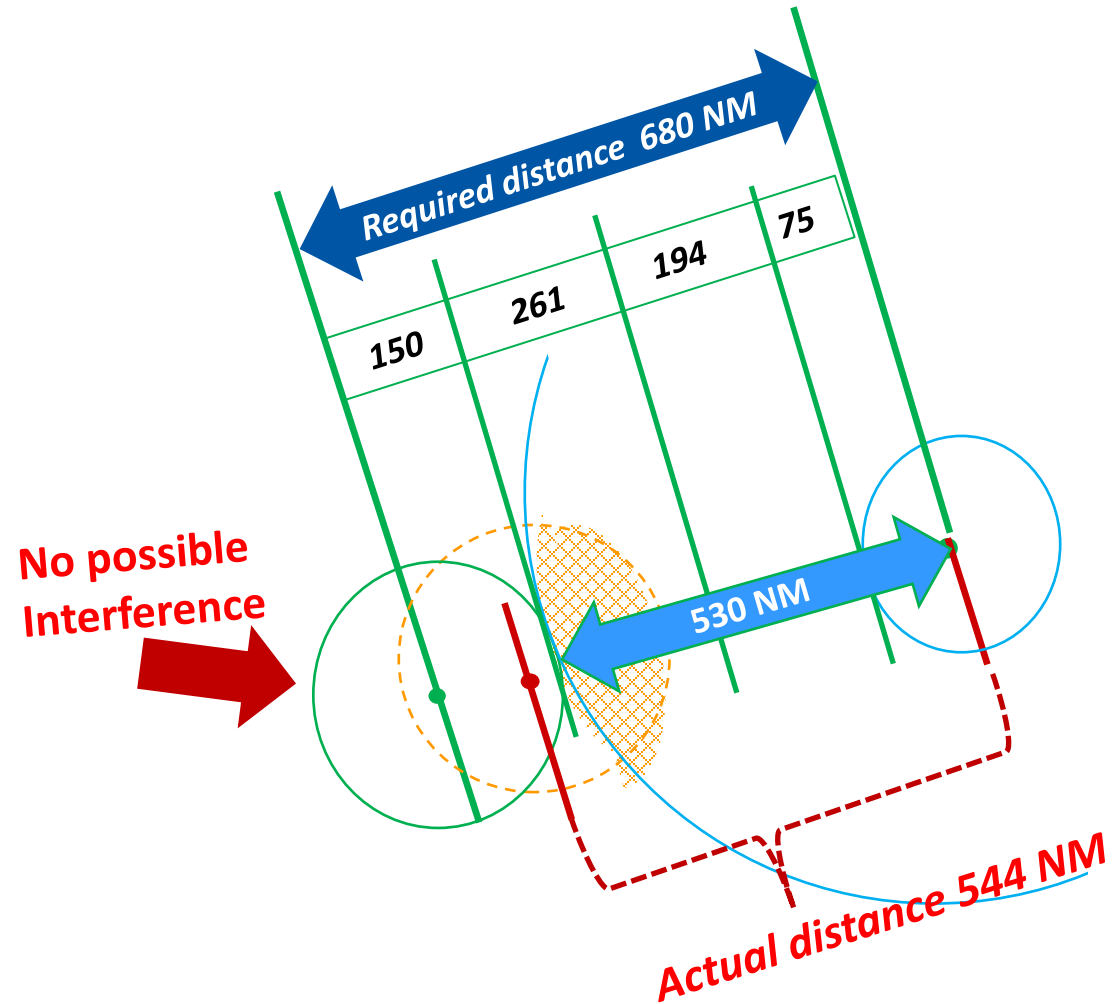




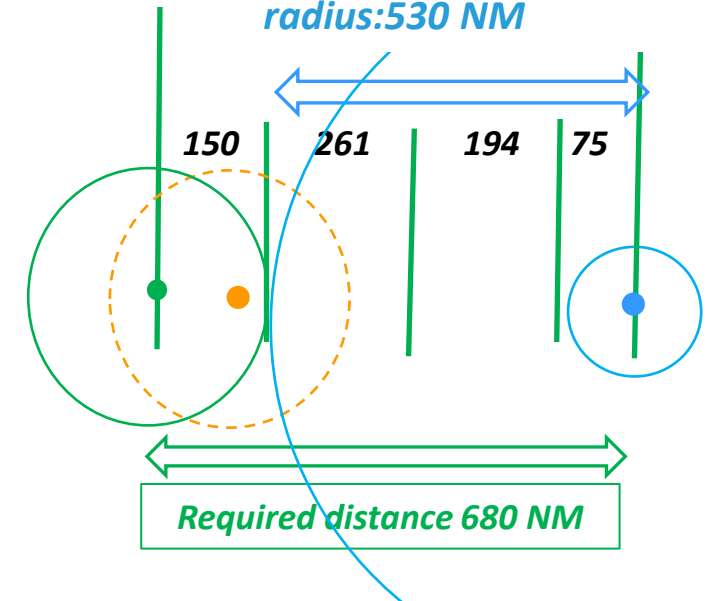
# Compatibility test result (Exercise 2)

## 419471 is Not compatible with 418863

39



*FF calculates the possible interference based on the radius: 530 NM*



- Location of the original 418863
- If** 418863 is located here, It should be compatible

# –Test Frequency

## – Exercise 3: Cambodia, SIEM REAP, 118.500 MHz

QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY

Region ==APAC Frequency 118.500

Country ==Cambodia R Service No Service selected

Location ==SIEM REAP R FIR Sector No FIR name selected

Ext. Range No ER selected

Find

Query Database

- ① Click **“Query”**
- ② Select State: **Cambodia**,  
Location: **SIEM REAP**  
Frequency: **118.500 Mhz**
- ③ Click **“Find”**

Single Frequency  
Found Frequencies  
Cancel

Start Home Delete Record Active Find NEW/MOD Frequency TEST frequency Calculation results

Global COM list 3 RESET QUERY MAPPING Export COM list 3

30875 total 1 found APAC COM List 3 Query

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

MOD Key Region Frequency Country Location Latitude Longitude DOC

R	401012	APAC	118.500	Cambodia	KMR	SIEM REAP	13D24'25" N	103D50'00" E	TWR C-25/40
---	--------	------	---------	----------	-----	-----------	-------------	--------------	-------------

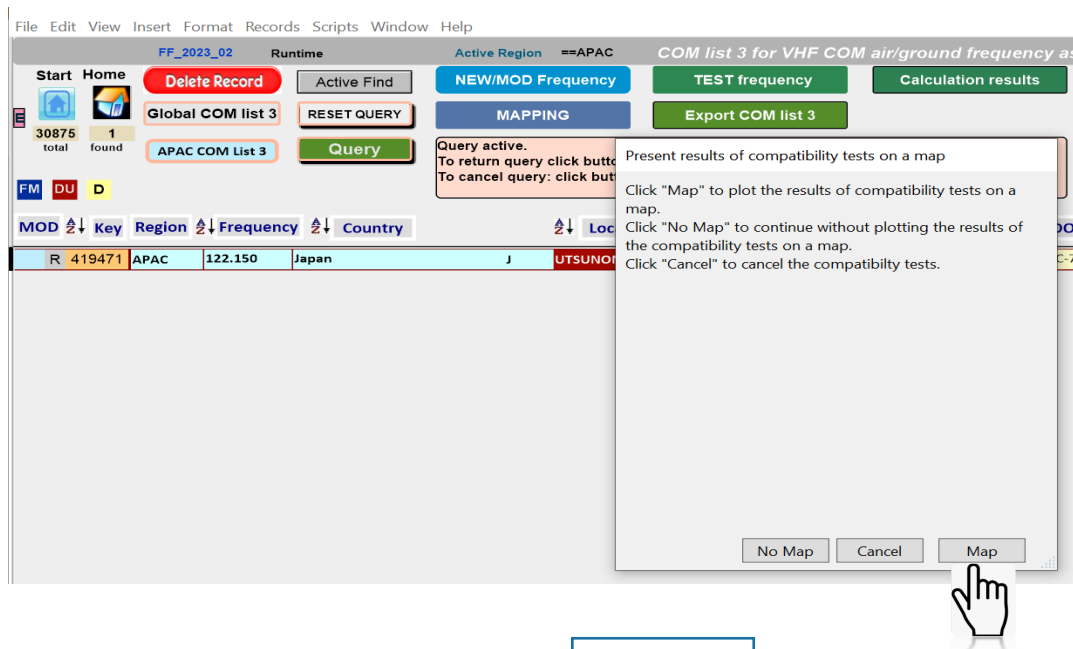
Frequency Finder found a 118.500,  
SIEM REAP, Cambodia  
(Key codes **401012** )

Click **“Test Frequency”**

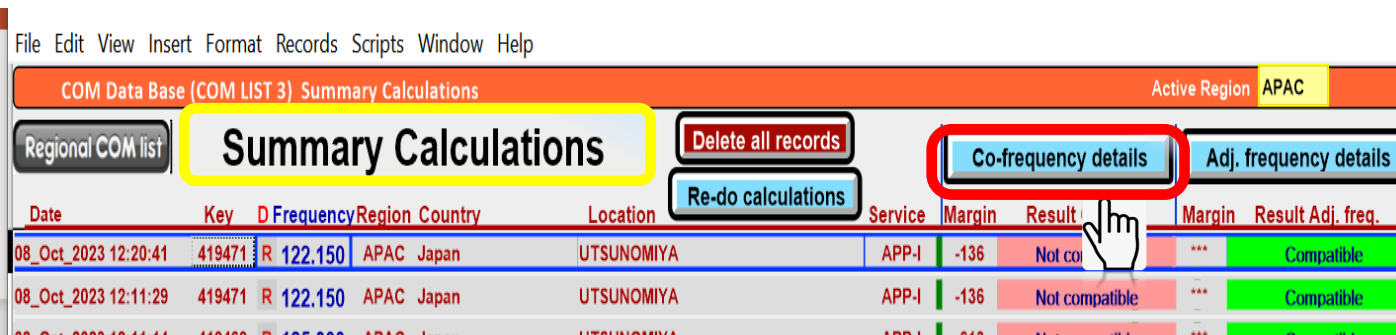
- ⑤ Select **“Single frequency”**

# –Test Frequency

## – Exercise 3: Cambodia, SIEM REAP, 118.500 MHz



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



⑦ Summary Calculation is displayed

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

# Test Frequency

## – Exercise 3: Cambodia, SIEM REAP, 118.500 MHz

42

*Result indicated : **401012** is Not compatible with **405531** ,and  
with **405532***

13 / 27 records

Regional COM list Show all records

Test for the frequency ...118.500MHz

Go to adj. frequency calc.

1	Key	R 401012	Frequency	118.500	Range	25	Height	4000	Radio Horizon	78	Sectorname		
	Region	APAC			Country	Cambodia			Location	SIEM REAP			
Not compatible with record #2, #3										Margin	-52 NM	Not compatible	Tower Circular

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 405531	Frequency	118.500	Range	25	Height	4000	Radio Horizon	78	Sectorname						
	Region	APAC			Country	Lao People's Democratic Republic			Location	PAKSE PAKSE							
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	154 NM	Required distance	206 NM	Margin	-52 NM	Not compatible	Tower Circular

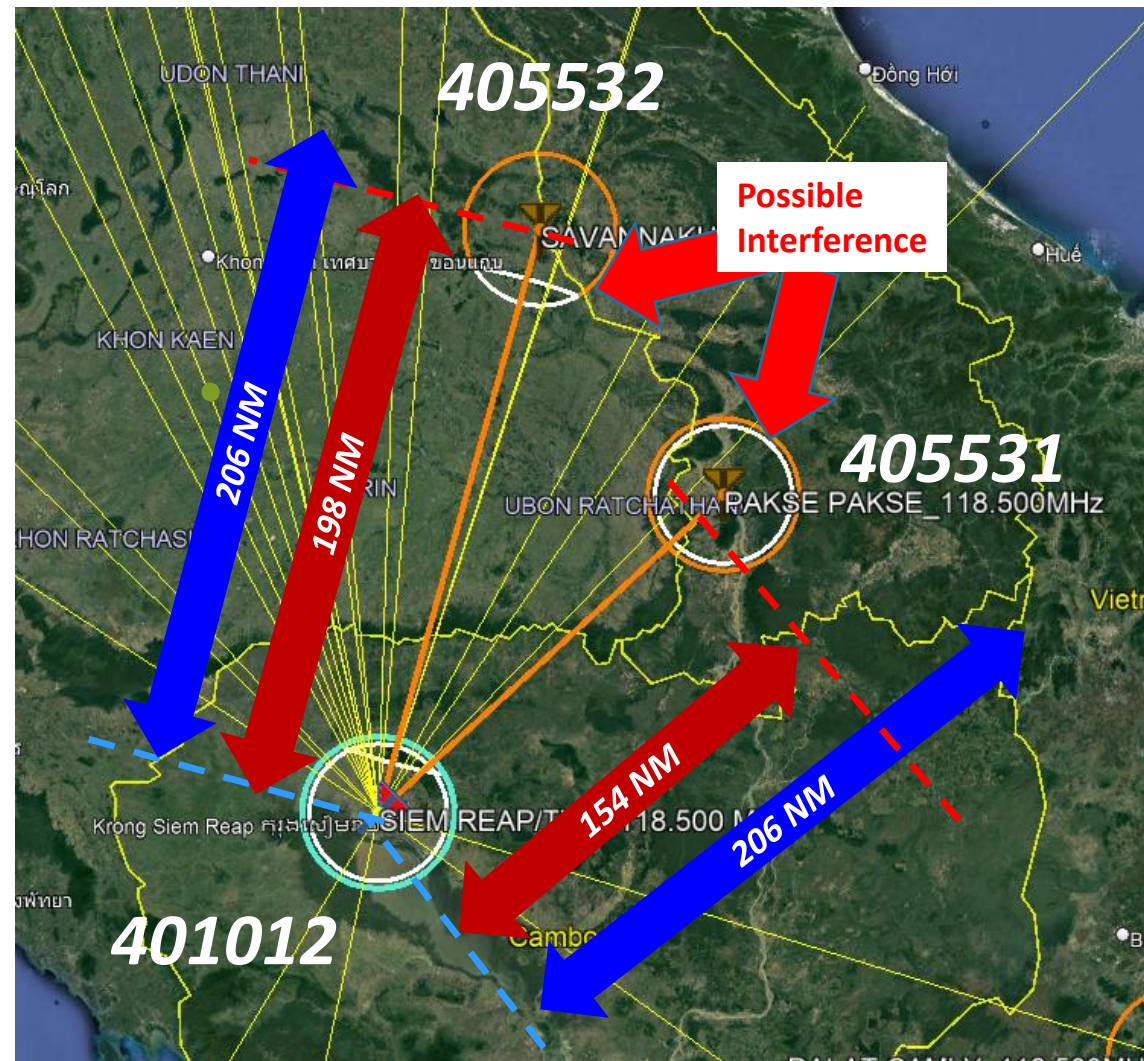
3	Key	R 405532	Frequency	118.500	Range	25	Height	4000	Radio Horizon	78	Sectorname						
	Region	APAC			Country	Lao People's Democratic Republic			Location	SAVANNAKHET							
The distance is measured between the location of the station in record 1 and the location of the station in the current record										Actual distance	198 NM	Required distance	206 NM	Margin	-8 NM	Not compatible	Tower Circular



## – Exercise 3: Cambodia, SIEM REAP, 118.500 MHz

43

*Result indicated : **401012** is Not compatible with **405531**  
**405532***



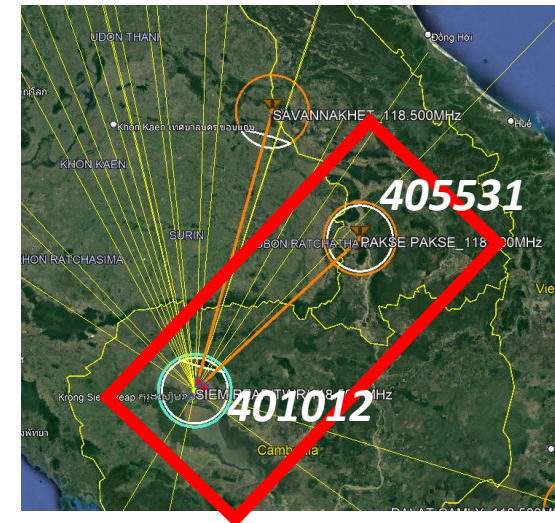
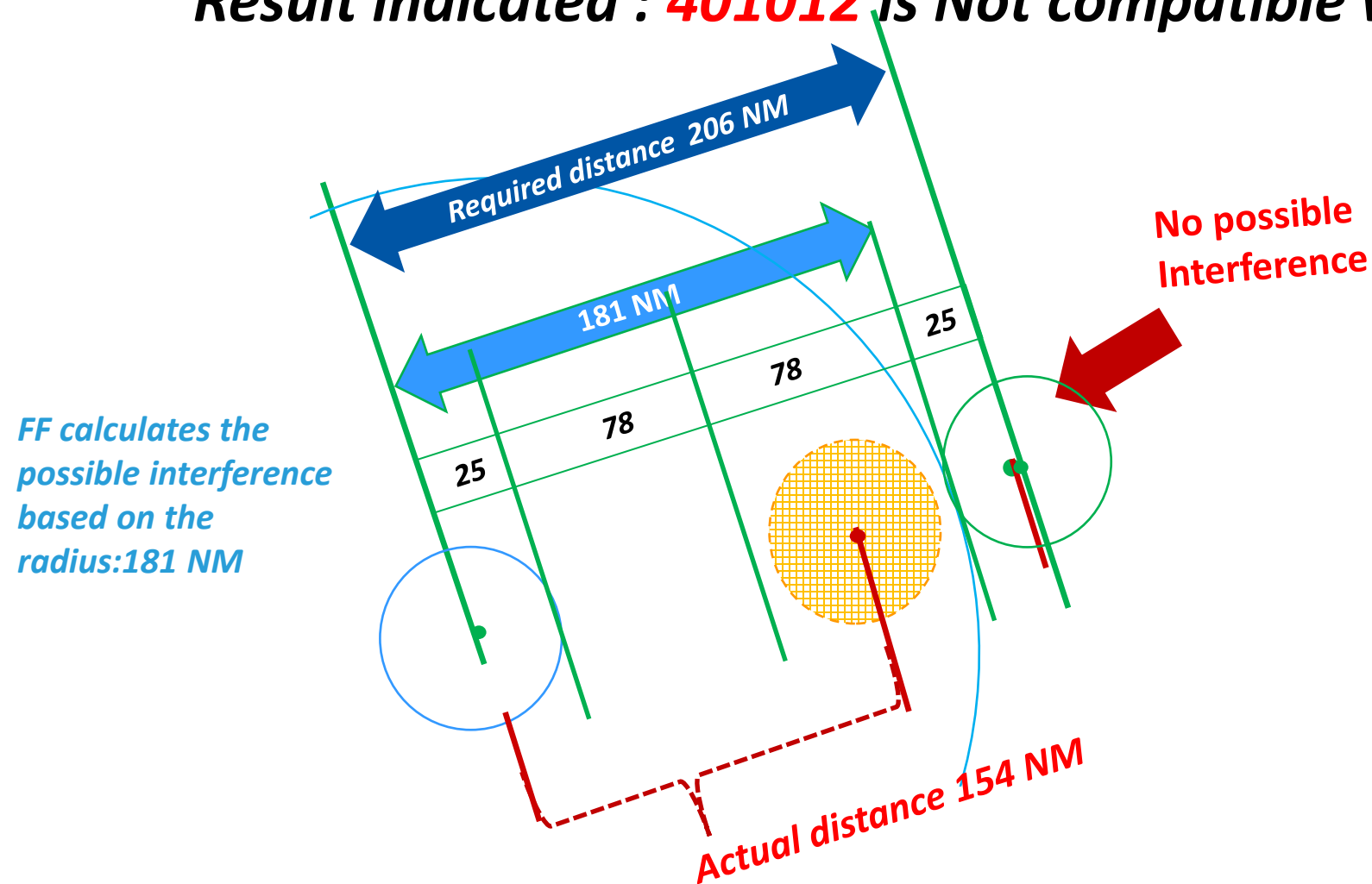
----- Required distance

----- Actual distance

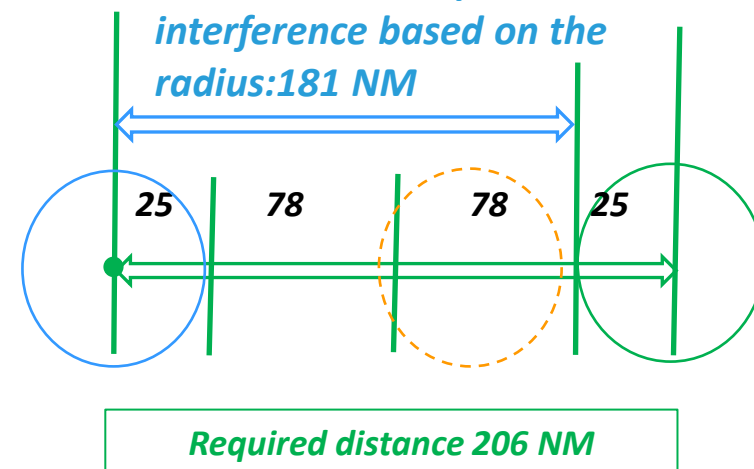
# – Exercise 3: Cambodia, SIEM REAP, 118.500 MHz

44

Result indicated : **401012** is Not compatible with **405531**



FF calculates the possible interference based on the radius: 181 NM



Location of the original 405531

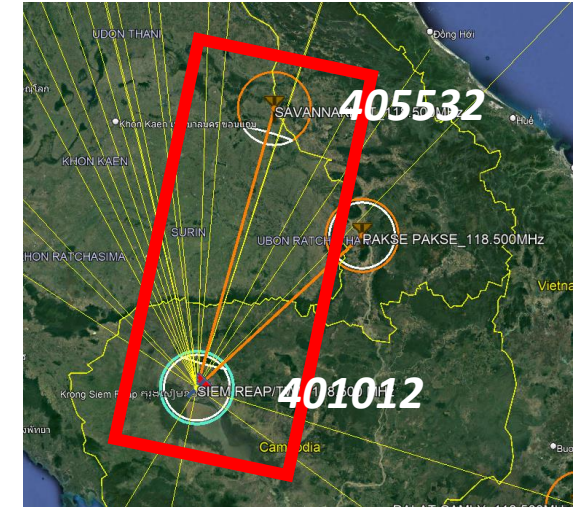
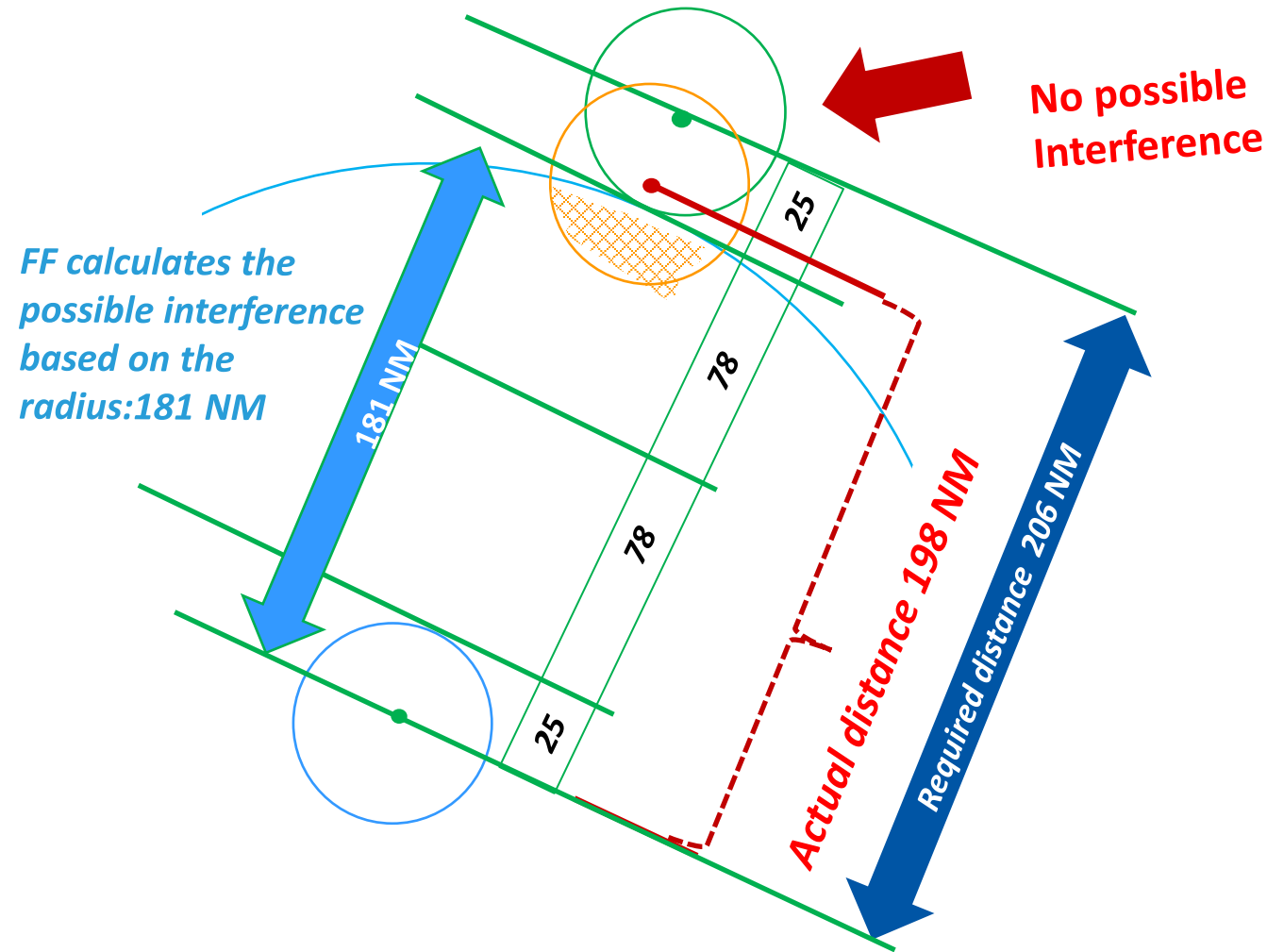


**If** 405531 is located here, It should be compatible

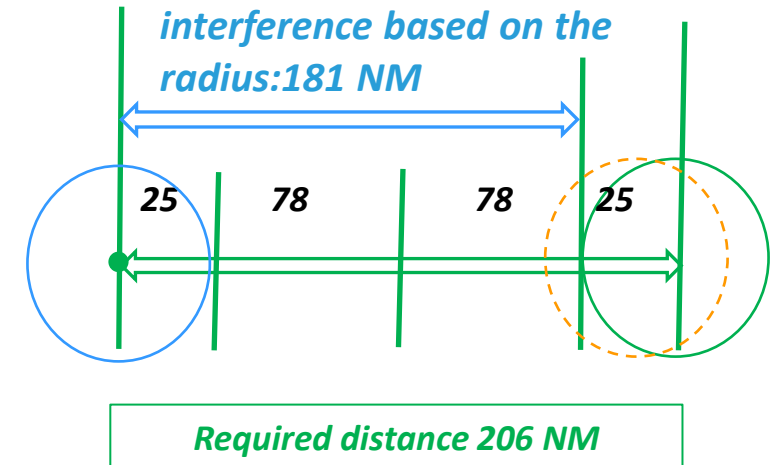
# – Exercise 3: Cambodia, SIEM REAP, 118.500 MHz

45

*Result indicated : **401012** is Not compatible with **405532***



*FF calculates the possible interference based on the radius:181 NM*



Location of the original 405532



**If** 405532 is located here, It should be compatible



## *Exercises- Test Frequency & Understand the result*

### **Exercise 4. Perform compatibility test – single frequency - ATIS**

- Query: State: Philippines, DAVAO, ATIS
- Select key “401639”
- Click test frequency and single frequency

# Test Frequency

## – Exercise 4: Philippines, DAVAO, ATIS

Query Database

Region ==APAC

Country ==Philippines R

Location ==DAVAO R

Frequency No Frequency selected

Service ATIS

FIR Sector No FIR name selected

Ext. Range No ER selected

Find

- ① Click **“Query”**
- ② Select State: **Philippines**,  
Location: **DAVAO**  
Service: **ATIS**
- ③ Click **“Find”**



Frequency Finder found one  
user case of 128.600 MHz in  
Jamaica

- ④ Select Key **“401639”**
- ⑤ Click **“Test Frequency”**



- ⑥ Select **“Single frequency”**

FF\_2023\_02 Runtime Active Region ==APAC COM list 3 for VHF COM air/ground frequency assign

Start Home Delete Record Active Find NEW/MOD Frequency TEST frequency Calculation results

Global COM list 3 RESET QUERY MAPPING Export st 3

30875 total 1 found

APAC COM List 3 Query

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

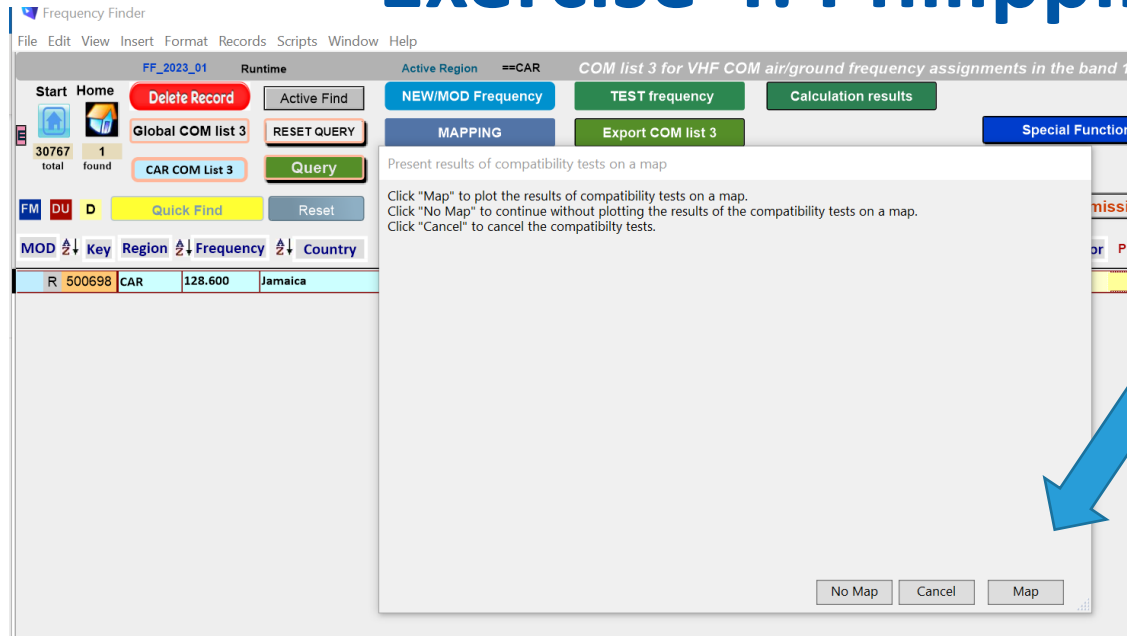
FM DU D

MOD Key Region Frequency Country Location Latitude Longitude DOC

R	401639	APAC	127.000	Philippines	PHL	DAVAO	07D08'00" N	120D16'00" E	ATIS B-260/450
---	--------	------	---------	-------------	-----	-------	-------------	--------------	----------------

# Test Frequency

## – Exercise 4: Philippines, DAVAO, ATIS



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

⑧ Summary Calculation is displayed

File Edit View Insert Format Records Scripts Window Help

COM Data Base (COM LIST 3) Summary Calculations Active Region APAC

Regional COM list Summary Calculations Delete all records Co-frequency details Adj. frequency details

Re-do calculations

Date	Key	D	Frequency	Region	Country	Location	Service	Margin	Result	Co. freq.	Margin	Result	Adj. freq.
08_Oct_2023 5:35:00	401639	R	127.000	APAC	Philippines	DAVAO	ATIS	-120	Not compatible	***	Compatible		
08_Oct_2023 5:12:24	401639	R	127.000	APAC	Philippines	DAVAO	ATIS	-125	Not compatible	***	Compatible		

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

# Test Frequency

## – Exercise 4: Philippines, DAVAO, ATIS

File Edit View Insert Format Records Scripts Window Help

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

### COM CO-frequency calculation details

ST

2 / 5 records

Regional COM list

Show all records

Test for the frequency ...127.000MHz

Go to adj. frequency calc.

Go to Summary

Plot interference - All

1	Key	R 401639	Frequency	127.000	Range	260	Height	45000	Radio Horizon	261	Sectorname		Latitude	07D08'00"	N	Service	ATIS
	Region	APAC	Country	Philippines	Location	DAVAO							Longitude	120D16'00"	E	DOC	ATIS B-260/450
Not compatible with record #2										Margin	-125 NM	Not compatible	Automatic Terminal Information Service Circular; Broadcast		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 405468	Frequency	127.000	Range	260	Height	45000	Radio Horizon	261	Sectorname		Latitude	04D21'00"	N	Service	ATIS
	Region	APAC	Country	Malaysia	Location	MIRI							Longitude	113D59'00"	E	DOC	ATIS B-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	411 NM	Required distance	536 NM	Margin	-125 NM	Not 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 :**

**401639 is Not compatible with 405468**

## 50

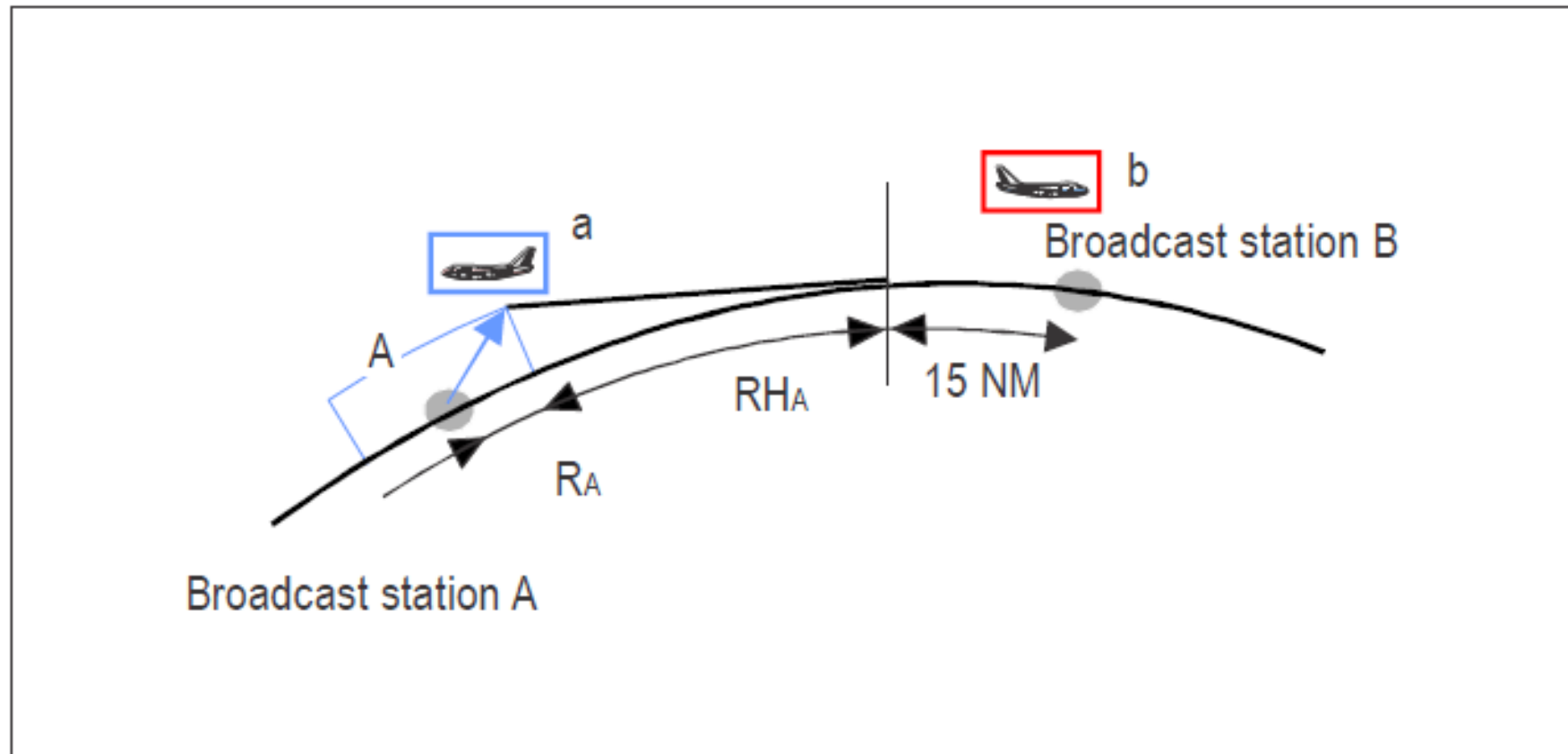
[illegible]



# Test Frequency

## – Exercise 4: Philippines, DAVAO, ATIS

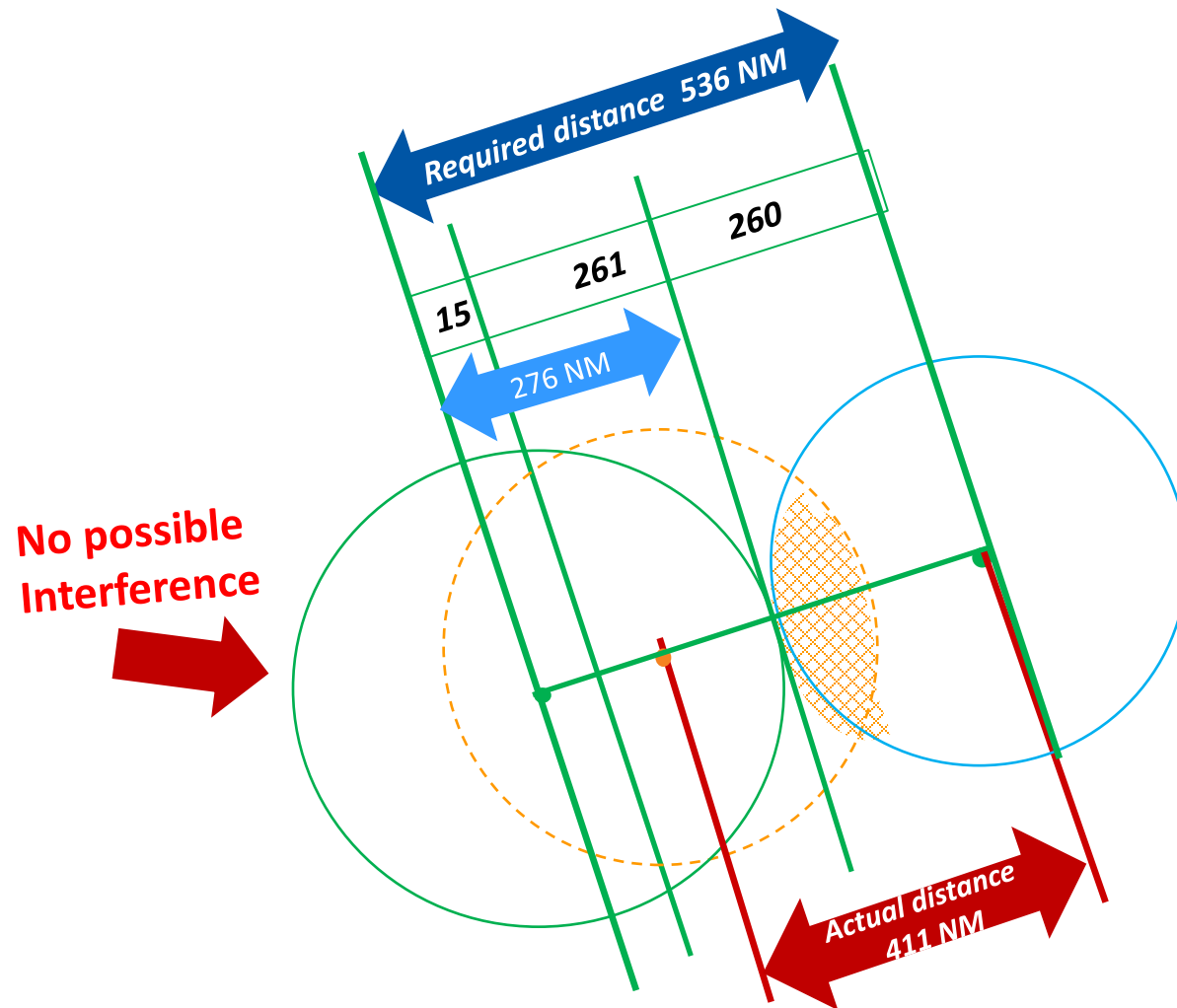
***401639 is Not compatible with 405468***  
(*Broadcast Station A is Not compatible with Broadcast Station B*)





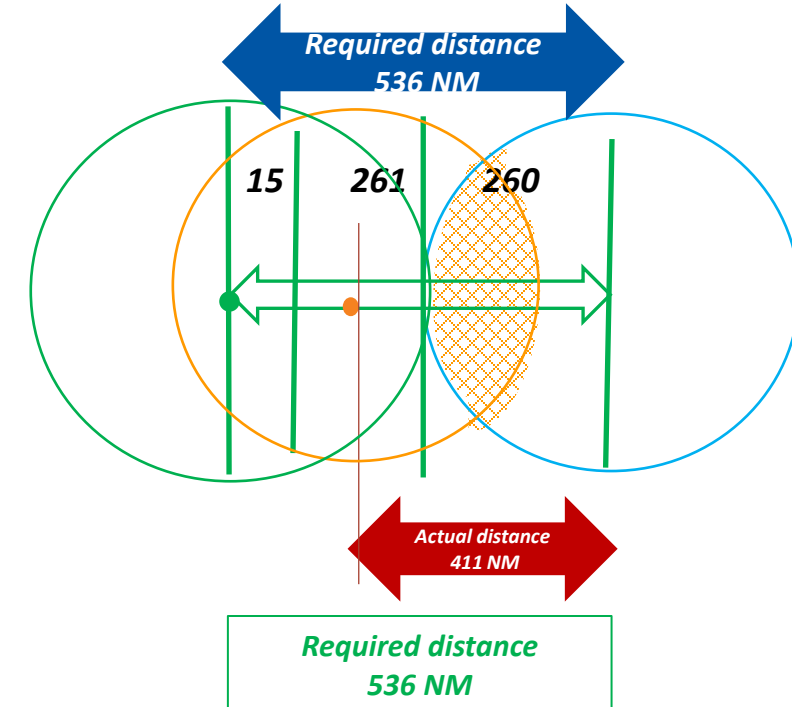
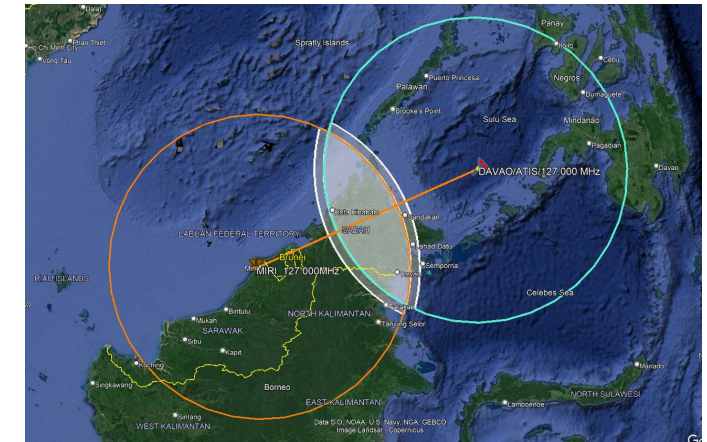
# Exercise 4: Philippines, DAVAO, ATIS

**401639** is Not compatible with **405468**

52



-  Location of the original 405468
-  **If 405468** is located here, It should be compatible





## *Exercises- Test Frequency & Understand the result*

### **Exercise 5. 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.

# Demonstrations

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Click **“Start”**

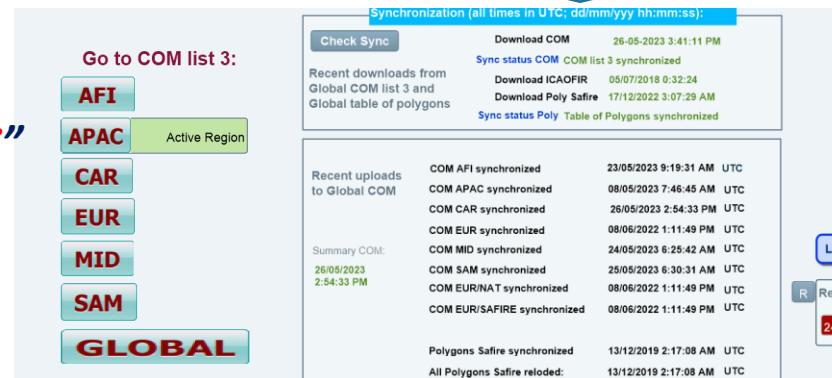


Click **“VHF COM”**



Select **“APAC”**

Click **“APAC”**



# *Demonstrations*

## *Add, Modify or Delete Frequency*

### **Demonstration 1- Add:**

Based on a frequency assignment (for example, select: Viet Nam, HO CHI MINH, 133.050), then add ACC-U frequency to *ICAOTEST APAC*

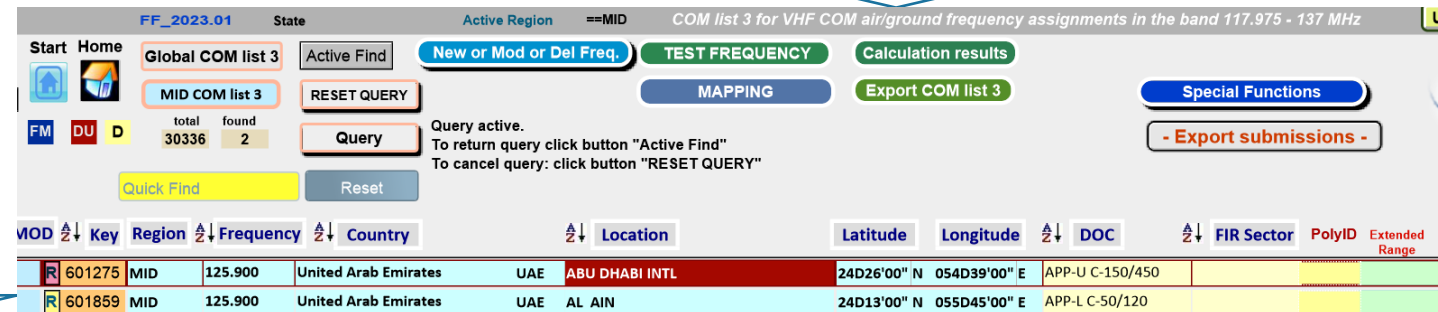
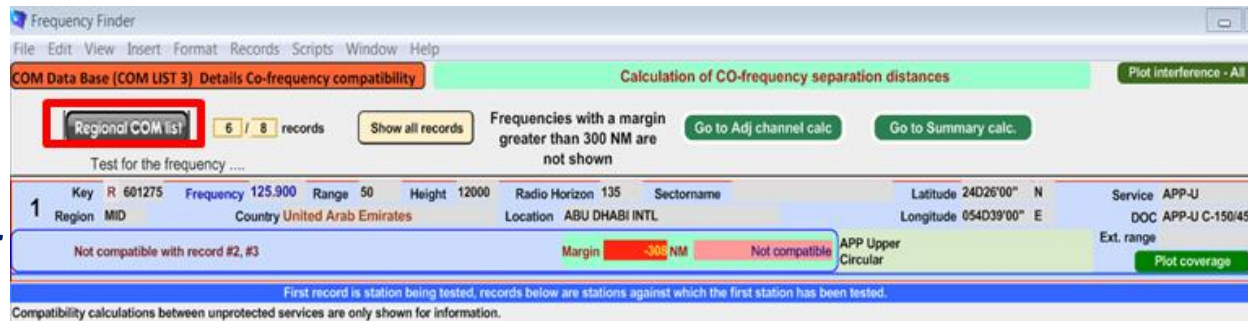
# Add, Mod or Delete Frequency

56

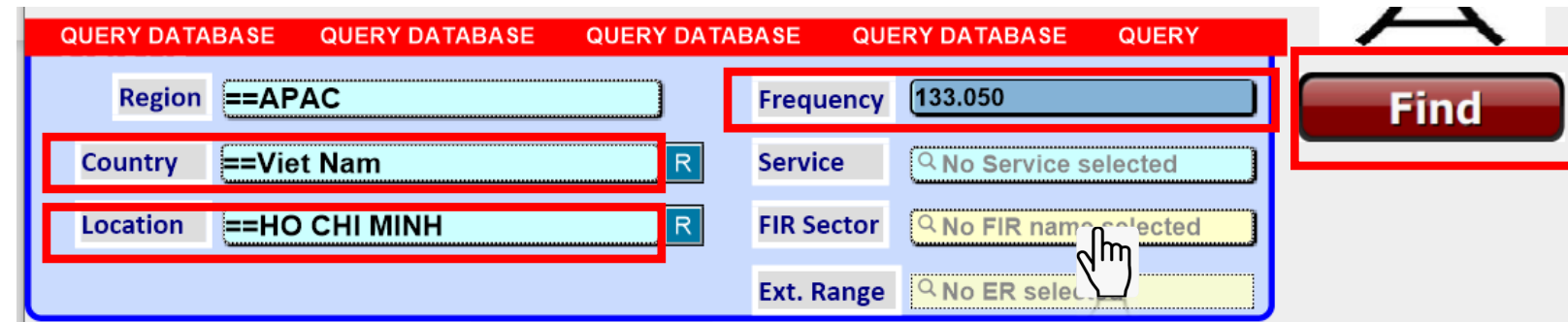
Go back to Regional COM List 3

Click **“Query”**

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



In this demonstration,  
Country: **Viet Nam**  
Location: **HO CHI MINH**  
Frequency: **133.050**



# Add Frequency

57

Your Query outcome is displayed

Selected **"401617"** in this demonstration

Click **"New or Mod,"**

Select **"Add Frequency"**

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC
R	401617	APAC	133.050	Viet Nam	VTN	HO CHI MINH	10D49'00" N 106D39'00" E	ACC-U C-260/450

Add information required

In this demonstration

Change:

Country: **ICAOTEST APAC**

Add:

Location: **TEST 1**

Frequency: **133.050**

Service: **ACC-U**

Remark: **TEST APAC Workshop 2023**

Then Click **"TEST"**

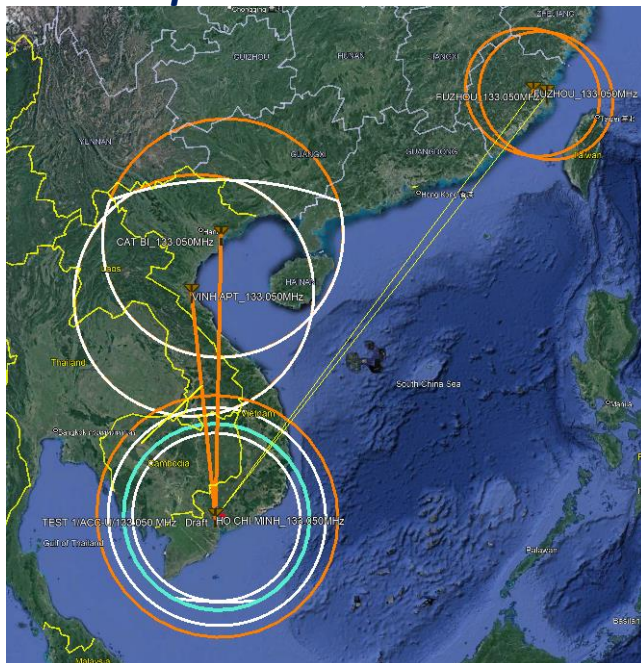
# Add Frequency cont.

58

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



**Station**

**MOD DN** New assignment

**Region** APAC **Key** D 422390 **Cat** NAT **Channel spacing** 25 kHz / 8.33 kHz

**Country** ICAOTEST APAC **Ctry** ZZZ

**Location** TEST 1

**Latitude** 10 D 49 ' 00 " N **Longitude** 106 D 39 ' 00 " E

**Service** ACC-U **Frequency** 133.050

**DOC** ACC-U C-200/450 **Range (NM)** 200 **Height (feet)** 45000

**FIR SECTORNAME** No area service set or selected **PolyID** Enter Poly ID

**Remarks** APAC Workshop Oct 2023

**TEST** The selected frequency is NOT compatible. **Test completed**

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

Margin in NM

Date/time	Key	D	Frequency	Region	Country	Location	Service	Margin	Result co-ch	Margin Result ad
09/10/2023 11:03:52	422390	D	133.050	APAC	ICAOTEST APAC	TEST 1	ACC-U -982	Not compatible ***	Compatible	

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

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



# Add Frequency cont.

59

*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 'Search range 118...136.975 MHz', 'Set frequency range' with 'START 118.000 MHz' and 'END 136.975 MHz', and 'Select from Regional Frequency Allotment Plan' with 'APAC ACC-L, ACC-U' selected. A blue arrow points from the text 'Note.- it is always better to select it from the regional allotment plan!!' to the 'APAC ACC-L, ACC-U' selection. Another blue arrow points from the text 'Set Maximum # of frequencies' to the 'Max. # of frequencies' field, which is set to '10'. A red box highlights the 'START SEARCH' button, which is being clicked by a hand icon. To the right of the button is a list of frequencies from FF1 to FF10. Below the button is a green bar labeled 'Selected frequency' and 'Allo'.

*In this example, select **ACC-L,ACC- U** and **10** frequencies*

**Then “Start Search”**



# Add Frequency cont.

10 Frequency were found and select a frequency.

Find Frequency

Search range  
118...136.975 MHz

Set frequency range  
START 118.000 MHz  
END 136.975 MHz

Select from Regional Frequency Allotment Plan  
APAC ACC-L, ACC-U

Reset

Max. # of frequencies 10

START SEARCH

Searching  
Search completed  
132.675

	Frequencies found	Margin co-freq	Margin adj-freq
FF1	119.375	***	580
FF2	120.775	***	506
FF3	132.275	***	382
FF4	132.325	***	580
FF5	132.375	55	105
FF6	132.425	***	105
FF7	132.475	***	382
FF8	132.575	***	499
FF9	132.625	***	499
FF10	132.675	***	***

# FOUND frequencies 10

Margin in NM

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

In this demonstration:  
Click "132.375".

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

Station

MOD DN New assignment

Region APAC Key D 422390 Cat NAT Channel spacing 25 kHz

Country ICAOTEST APAC Ctry ZZZ

Location TEST 1 8.33 kHz

Latitude 10 D 49 ' 00 " N

Longitude 106 D 39 ' 00 " E

Service ACC-U

DOC ACC-U C-200/450

Range (NM) 200 Height (feet) 45000

FIR SECTORNAME No area service set or selected PolyID Enter Poly ID

Remarks APAC Workshop Oct 2023

TEST The selected frequency is compatible. Test completed

Find Frequency

Search range  
118...136.975 MHz

Set frequency range  
START 118.000 MHz  
END 136.975 MHz

Select from Regional Frequency Allotment Plan  
APAC ACC-L, ACC-U

Reset

Max. # of frequencies 10

START SEARCH

Searching  
Search completed  
132.675

	Frequencies found	Margin co-freq	Margin adj-freq
FF1	119.375	***	580
FF2	120.775	***	506
FF3	132.275	***	382
FF4	132.325	***	580
FF5	132.375	55	105
FF6	132.425	494	105
FF7	132.475	***	382
FF8	132.575	***	499
FF9	132.625	***	499
FF10	132.675	***	***

# FOUND frequencies 10

Margin in NM

Selected frequency 132.375 Allotted to ACC-L, ACC-U

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

# 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 window a draft frequency assignment

Station

Insert from menu or type name

Region Country Location Latitude Longitude Service Stat

Key D 603200 Cat ICAO

Frequency

DOC

APP-L C-50/120

Drop down disabled

50

12000

MOD Range (NM)

MOD Height (feet)

ER family

Example: ER-BOT-01

PolyID

Frequency Allotment

MID Select from P

Max. # of frequency

Cancel

Save as REGISTERED frequency

Save as DRAFT frequency

Delete draft frequency

View Summary

Go to Regional COM list

Required fields

FIR SECTORNAME

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	Compatibility	Margin	Compatibility
16/05/2022 15:04:06	603200	D	118.025				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 displayed.

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

# Export Submissions

*The registered frequency needs to report to Regional officer*

62

30876 total 1 found

APAC COL, List 3

Query

FM DU D

MOD Key Region Frequency Country Location Latitude Longitude DOC FIR Sector PolyID Ext Ra

! N ? APAC 132.375 ICAOTEST APAC ZZZ TEST 1 10D49'00" N 106D39'00" E ACC-U C

1 - Export submissions -

<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.

2

Cancel Open

**Click “Export submission” to report New, Mod or Del frequency to regional officer**

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

« frequ... » SaveSubmissions Search SaveSubmissions

PDF Volume II

VHFCOM ZZZ 09-10-2023 114043 AM.xlsx

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

! SN R ?	APAC	132.375	ICAOTEST APAC	ZZZ	TEST 1	10D49'00" N	106D39'00" E	ACC-U C-200/450
----------	------	---------	---------------	-----	--------	-------------	--------------	-----------------

## *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 APAC Workshop 2023**)
- 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 Empty Essential Field data (key 422389 – integrity check outcome), modify the data and find an appropriate frequency.

- 1) Query a frequency (State: **ICAOTEST APAC**, Frequency 118.925)
- 2) Modify its data, change
  - Location : change to ICAO TEST 2
  - latitude /longitude: to 21D25'00"S/165D30'00"E),
- 3) Test the modified data, and
- 4) If the result indicates not compatible, find an appropriate frequency for this site.

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

65

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

Click **“Query”**

In this demonstration select,  
Country: **ICAOTEST APAC**  
Service: **ACC-U**

QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY

Region ==APAC Frequency No Frequency selected

Country ==ICAOTEST APAC Service ACC-U

Location ==Waalwijk FIR Sector No FIR name selected

Ext. Range No ER selected

Find

Click **“Find”**

Your Query outcome  
(the data with key 422389)  
is displayed in this demonstration.

Click **“New or Mod”**  
Select **“MODIFY Frequency”**

File Edit View Insert Format Records Scripts Tools Window Help

Regional Office FF\_2023.01 Full Active Region ==MID COM list 3 for VHF COM air/ground frequency assignment

Start Home Delete Record Active Find NEW/MOD Frequency TEST frequency Calculation results

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

SAM COM List 3 Query

Query active. To return query click ve Find" To cancel query: clic SET QUERY"

Quick Find Reset

MOD Key Region Frequency Country Location Latitude Longitude DOC

30739 total	1 found	FM DU D	422389	APAC	ICAOTEST APAC	Waalwijk	00D00,00,, N	00D00,00,, E	ACC-U C-300\420
-------------	---------	---------	--------	------	---------------	----------	--------------	--------------	-----------------



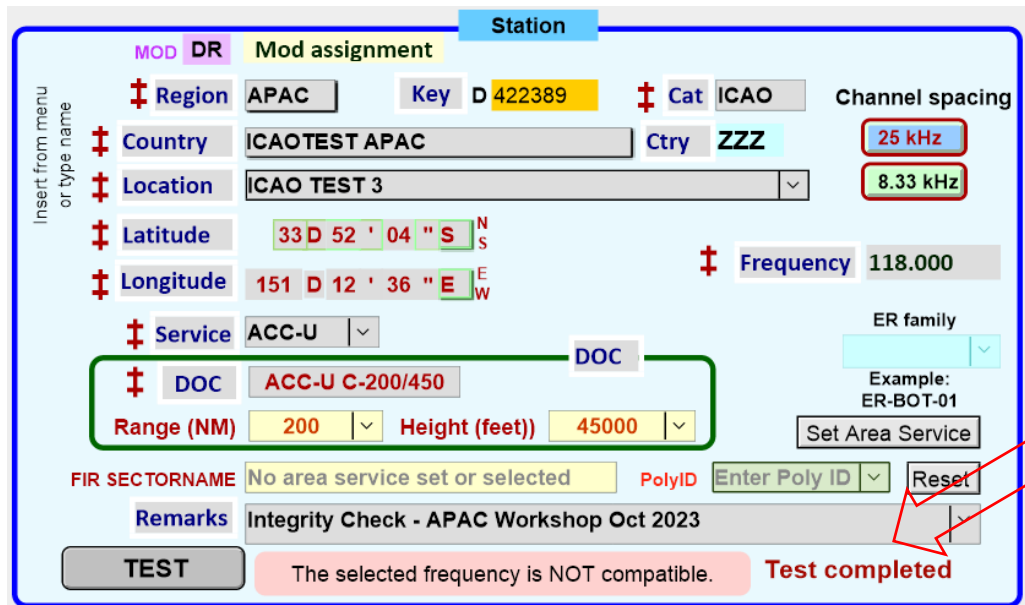
# Add, Mod or Delete Frequency (Demonstration 2: Mod)

66

In this demonstration, **change**

- Location to ICAO TEST 3
- latitude/longitude to **33D52'04"S/151D12'36"E**
- Frequency to **118.000 MHz**

Then Click **"TEST"**



MOD DR Mod assignment

Station

Insert from menu or type name

Region APAC Key D 422389 Cat ICAO Channel spacing 25 kHz

Country ICAOTEST APAC Ctry ZZZ

Location ICAO TEST 3

Latitude 33 D 52 ' 04 " S N S

Longitude 151 D 12 ' 36 " E E W

Frequency 118.000

Service ACC-U

DOC ACC-U C-200/450

Range (NM) 200 Height (feet) 45000

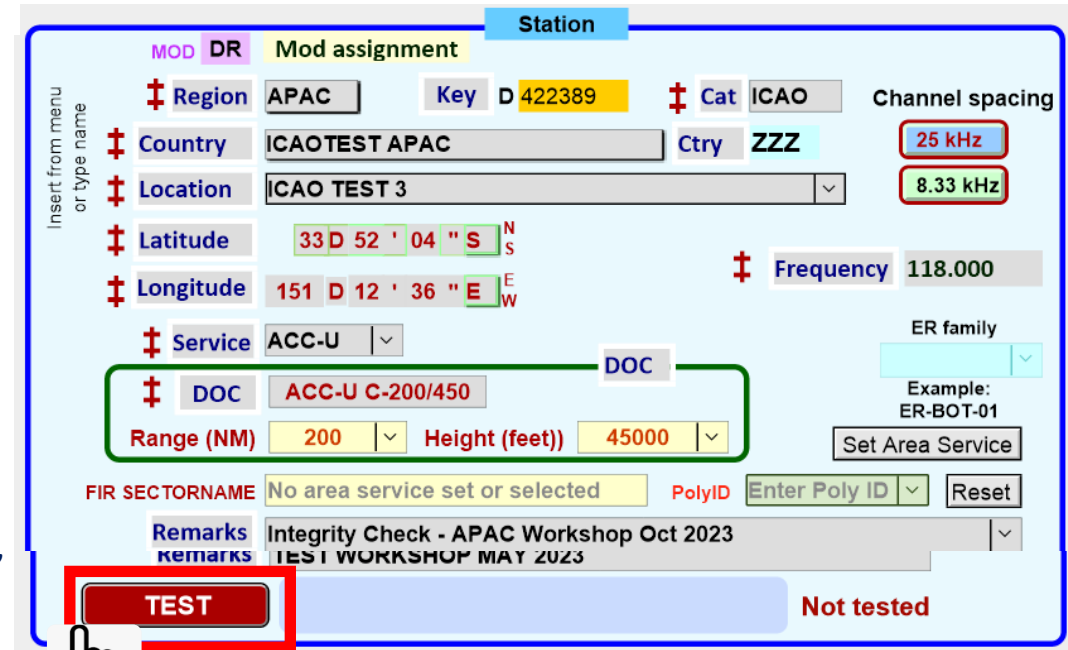
ER family

Example: ER-BOT-01

FIR SECTORNAME No area service set or selected PolyID Enter Poly ID Reset

Remarks Integrity Check - APAC Workshop Oct 2023

TEST The selected frequency is NOT compatible. Test completed



MOD DR Mod assignment

Station

Insert from menu or type name

Region APAC Key D 422389 Cat ICAO Channel spacing 25 kHz

Country ICAOTEST APAC Ctry ZZZ

Location ICAO TEST 3

Latitude 33 D 52 ' 04 " S N S

Longitude 151 D 12 ' 36 " E E W

Frequency 118.000

Service ACC-U

DOC ACC-U C-200/450

Range (NM) 200 Height (feet) 45000

ER family

Example: ER-BOT-01

FIR SECTORNAME No area service set or selected PolyID Enter Poly ID Reset

Remarks Integrity Check - APAC Workshop Oct 2023

TEST Not tested

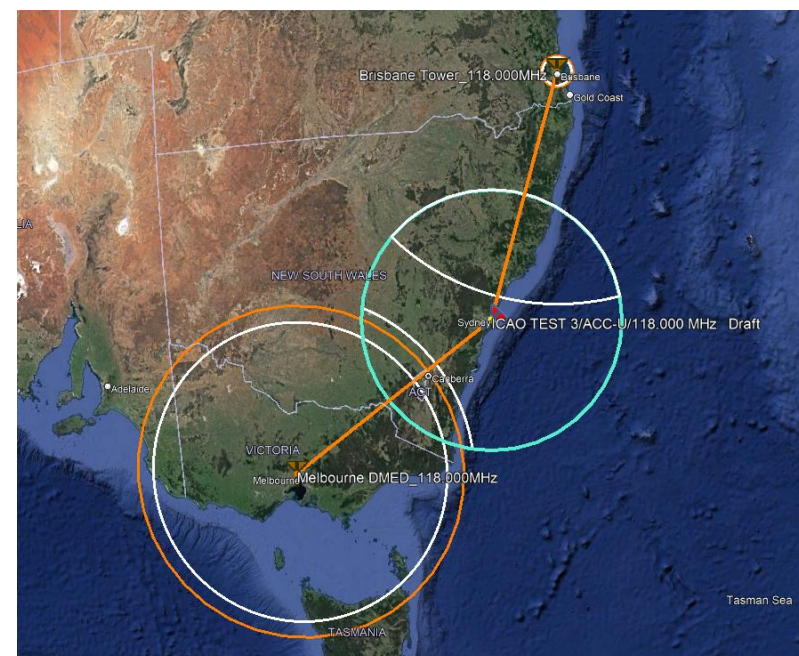
Test result is displayed.  
In this demonstration, it said that :  
The selected frequency **is Not compatible**

*if you want to see the outcome on the Map, click “Plot interference-All”*

Date/time	Key	D	Frequency	Region	Country	Location	Service	Margin	Result co-ch	Margin Result a
09/10/2023 11:58:26	422389	D	118.000	APAC	ICAOTEST APAC	ICAO TEST 3	ACC-U	-598	Not compatible ***	Compatible

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

[Print co-frequency](#)
[Plot interference - All](#)
[Print adj-frequency](#)
[Plot interference - All](#)



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

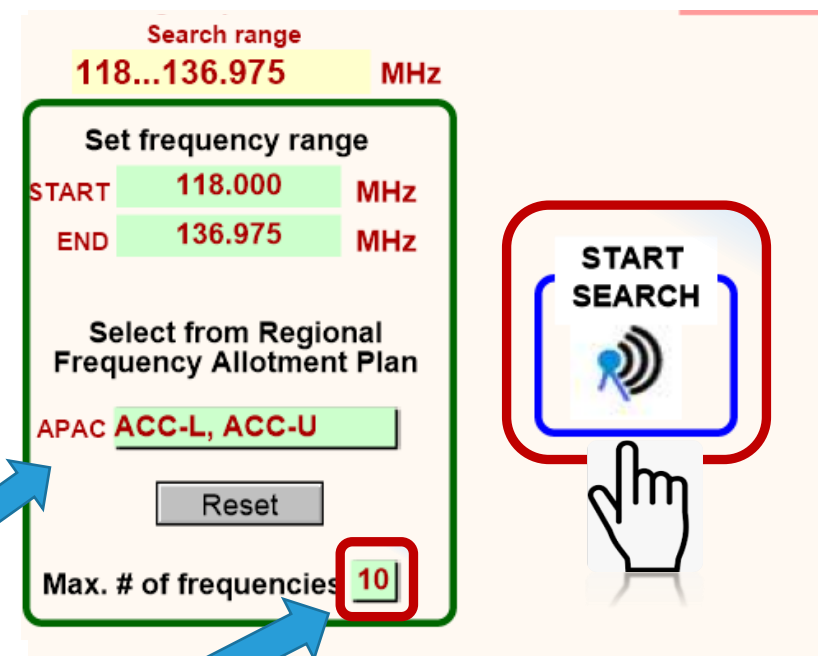
*This selected frequency was **Not** compatible, so now you **need to find an appropriate one!***

*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 a search interface with the following elements:

- Search range:** 118...136.975 MHz (highlighted in yellow)
- Set frequency range:**
  - START: 118.000 MHz (green box)
  - END: 136.975 MHz (green box)
- Select from Regional Frequency Allotment Plan:**
  - APAC ACC-L, ACC-U (green box)
  - Reset button
- Max. # of frequencies:** 10 (the number 10 is in a red box, with a blue arrow pointing to it from below)
- START SEARCH:** A button with a hand icon pointing to it (circled in red, with a blue arrow pointing to it from below)

Two blue arrows point from the text instructions to the interface: one from 'Define Search Range' to the 'Set frequency range' section, and another from 'Set Maximum # of frequencies' to the '10' in the 'Max. # of frequencies' field.

*In this example, select **ACC-L, ACC-U** and **10** frequencies  
Then “**Start Search**”*

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

69

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

**10 Frequency were found and select a frequency.**

**MOD DR Mod assignment**

Region APAC Key D 422389 Cat ICAO Channel spacing 25 kHz

Country ICAOTEST APAC Ctry ZZZ

Location ICAO TEST 3

Latitude 33 D 52 ' 04 " S Longitude 151 D 12 ' 36 " E

Service ACC-U Frequency 123.700

DOC ACC-U C-200/450 Range (NM) 200 Height (feet) 45000

FIR SECTORNAME No area service set or selected PolyID Enter Poly ID

Remarks Integrity Check - APAC Workshop Oct 2023

TEST Test completed

**Find Frequency**

Search range 118...136.975 MHz

Set frequency range START 118.000 MHz END 136.975 MHz

Select from Regional Frequency Allotment Plan APAC ACC-L, ACC-U

Reset

Max. # of frequencies 10

START SEARCH

Searching Search completed

123.700

Frequencies found	Margin co-freq	Margin adj-freq
FF1 118.925	***	175
FF2 118.975	***	98
FF3 119.325	***	***
FF4 119.350	***	***
FF5 119.375	***	158
FF6 120.575	***	99
FF7 120.725	***	177
FF8 120.925	***	2
FF9 120.975	***	5
FF10 123.700	133	***

# FOUND frequencies 10

Selected frequency 123.700 Allotted to

*In this demonstration: Click "123.700".*

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

**Station**

MOD DR Mod assignment

Region APAC Key D 422389 Cat ICAO Channel spacing 25 kHz

Country ICAOTEST APAC Ctry ZZZ

Location ICAO TEST 3

Latitude 33 D 52 ' 04 " S Longitude 151 D 12 ' 36 " E

Service ACC-U Frequency 123.700

DOC ACC-U C-200/450 Range (NM) 200 Height (feet) 45000

FIR SECTORNAME No area service set or selected PolyID Enter Poly ID

Remarks Integrity Check - APAC Workshop Oct 2023

TEST The selected frequency is compatible. Test completed

**Find Frequency**

Search range 118...136.975 MHz

Set frequency range START 118.000 MHz END 136.975 MHz

Select from Regional Frequency Allotment Plan APAC ACC-L, ACC-U

Reset

Max. # of frequencies 10

START SEARCH

Searching Search completed

123.700

Frequencies found	Margin co-freq	Margin adj-freq
FF1 118.925	***	175
FF2 118.975	***	98
FF3 119.325	***	***
FF4 119.350	***	***
FF5 119.375	***	158
FF6 120.575	***	99
FF7 120.725	***	177
FF8 120.925	***	2
FF9 120.975	***	5
FF10 123.700	133	***

# FOUND frequencies 10

Selected frequency 123.700 Allotted to ACC-L, ACC-U

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”.*

File Edit View Insert Format Records Scripts Window Help

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

Active Region  User\_COM

COM list 3 synchronized  
Table of Polygons synchronized

Mod assignment  
Navigation to ntW

Cancel

Find Frequency

Save as REGISTERED frequency

Save as DRAFT frequency

Delete draft frequency

View Summary calculations

Go to Regional COM list

Frequency Allotment Plan

MID TWVR

Max. # of frequencies 10

START SEARCH

Searching

Search complet

118.550

Selected frequency 118.150

Region SAM Key D 705210 Cat ICAO C

Country ICAO TEST SAM Ctry ZZS

Location ICAO SAM 2

Latitude 23 D 26 ' 00 \" S

Longitude 070 D 26 ' 00 \" W

Service ACC-I

DOC ACC-I C-155/250

Range (NM) 155 Height (feet) 25000

Example: ER-BOT-01

Set Area Service

FIR SECTORNAME No area service set or selected PolyID Enter Poly ID Reset

Remarks TEST WORKSHOP MAY 2023

TEST The selected frequency is compatible. Test completed

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

# Export Submissions

71

*The registered frequency needs to report to Regional officer*

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

**2** Click **"Open"**

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

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC	FIR Sector	PolyID	Ext
M	R	422389	APAC	123.700	ICAOTEST APAC	ZZZ	ICAO TEST 3	33D52'04" S 151D12'36" E	ACC-U C-200/450		

<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.

Cancel Open

SaveSubmissions

File Home Share View

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

« frequencyfind... » SaveSubmissions

Search SaveSubmis

Name Date modified Type

VHFCOM ZZZ 09-10-2023 114043 AM.xlsx 3:48 PM Microsoft

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC	FIR Sector	PolyID	Ext
SM	R	422389	APAC	123.700	ICAOTEST APAC	ZZZ	ICAO TEST 3	33D52'04" S 151D12'36" E	ACC-U C-200/450		



## 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 in **Exercise 1- ADD**, and find an appropriate frequency for that station.

- 1) Query a frequency (in your country) and select the frequency you created in the **Exercise 1- ADD**.
- 2) Modify the service from **TWR to ATIS**, and find an appropriate frequency for that station (In Remark, please keep the remark “**TEST APAC Workshop 2023**”)
- 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 Example)

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

Click **“Query”**

In this example select,  
Country: **ICAOTEST APAC**  
Service: **TWR**

QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY

Region ==APAC Frequency No Frequency selected

Country ==ICAOTEST APAC Service TWR

Location ==Waalwijk FIR Sector No FIR name selected

Ext. Range No ER selected

Find

Click **“Find”**

Query outcome in this example:  
(the data with key 419973) is displayed.

FF\_2022\_01 Runtime Active Region ==MID COM list 3 for VHF COM air/ground frequency assignments in

Start Home Global COM list 3 Active Find TEST FREQUENCY Calculation results

MID COM list 3 RESET QUERY ADD frequency MAPPING Export COM list 3

total found NEW frequency

30374 1 ADD frequency

Query MODIFY frequency

Reset DELETE

Quick Find CANCEL

MOD Key Region Frequency Country Location Latitude Longitude DOC

R	419973	APAC	118.375	ICAOTEST APAC	ZZZ	Waalwijk	26D00'00" N	091D00'00" E	TWR C-25/40
---	--------	------	---------	---------------	-----	----------	-------------	--------------	-------------

Click **“New or Mod or Del Freq,”**  
Select **“MODIFY Frequency”**

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

Station

MOD DR Mod assignment

Region APAC Key D 419973 Cat ICAO Channel spacing

Country ICAOTEST APAC Ctry ZZZ 25 kHz

Location Waalwijk 8.33 kHz

Latitude 26 D 00 ' 00 " N S

Longitude 091 D 00 ' 00 " E W

Service ATIS

DOC ATIS B-200/450

Range (NM) 200 Height (feet) 45000

FIR SECTORNAME No area service set or selected PolyID Enter Poly ID Reset

Remarks

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”*

Search range 118...136.975 MHz

Set frequency range

START 118.000 MHz

END 136.975 MHz

Select from Regional Frequency Allotment Plan

APAC VOLMET, ATIS

Reset

Max. # of frequencies 10

START SEARCH

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

10 Frequency were found and select a frequency.

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

*In this demonstration: Click "126.225".*

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

Station

MOD DR Mod assignment

Region APAC Key D 419973 Cat ICAO Channel spacing

Country ICAOTEST APAC Ctry ZZZ 25 kHz

Location Waalwijk 8.33 kHz

Latitude 26 D 00 ' 00 " N

Longitude 091 D 00 ' 00 " E

Service ATIS

DOC

DOC ATIS B-200/450

Range (NM) 200 Height (feet) 45000

ER family

Example: ER-BOT-01

Set Area Service

FIR SECTORNAME No area service set or selected PolyID Enter Poly ID Reset

Remarks

TEST

The selected frequency is compatible. Test completed

Find Frequency

Search range 118...136.975 MHz

Set frequency range

START 118.000 MHz

END 136.975 MHz

Select from Regional Frequency Allotment Plan

APAC VOLMET, ATIS

Reset

Max. # of frequencies

START SEARCH

Searching

Search completed

127.025

Frequencies found	Margin co-freq	Margin adj-freq
FF1 126.225	50	147
FF2 126.275	50	147
FF3 126.425	852	139
FF4 126.475	341	139
FF5 126.525	523	22
FF6 126.825	373	438
FF7 126.850	309	***
FF8 126.875	324	***
FF9 127.000	334	***
FF10 127.025	486	***

# FOUND 10 frequencies

Margin in NM

Selected frequency Allotted to

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 example)

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

APAC COM List 3

COM list 3 synchronized  
Table of Polygons synchronized

Save as draft record  
Save as registered record  
Delete draft record

VHF COM LIST 3  
NEW/MOD Frequency

Find Frequency

Search range 118...136.975 MHz

Set frequency range  
START 118.000 MHz  
END 136.975 MHz

Select from Regional Frequency Allotment Plan  
APAC VOLMET, ATIS  
Reset

Max. # of frequencies 10

START SEARCH

Searching  
Search completed

127.025

# FOUND frequencies 10

Selected frequency 126.225 Allotted to VOLMET, ATIS

For efficient frequency assignment

	Frequencies found	Margin co-freq	Margin adj-freq
FF1	126.225	50	147
FF2	126.275	576	147
FF3	126.425	852	139
FF4	126.475	341	139
FF5	126.625	523	22
FF6	126.825	373	438
FF7	126.850	309	***
FF8	126.875	324	***
FF9	127.000	334	***
FF10	127.025	486	***

Station

MOD DR Mod assignment

Region APAC Key D 419973 Cat ICAO Channel s 25 kHz 8.33 kHz

Country ICAO TEST APAC Ctry ZZZ

Location Waalwijk

Latitude 26 D 00 ' 00 " N S

Longitude 091 D 00 ' 00 " E W

Frequency 126.225

Service ATIS

DOC ATIS B-200/450

Range (NM) 200 Height (feet) 45000

FIR SECTORNAME No area service set or selected PolyID Enter Poly ID Reset

Remarks

TEST The selected frequency is compatible. Test completed

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

77

*The registered frequency needs to report to Regional officer*

FF\_2023\_01 Runtime Active Region ==SAM COM list 3 for VHF COM air/ground frequency assignments in the band 117.975 -

Start Home Delete Record Active Find NEW/MOD Frequency TEST frequency Calculation results

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

30762 total 1 found SAM COM List 3 Query

FM DU D Quick Find Reset

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC
M	F	419973	APAC	118.375	I	ZZS	ICAO SAM 3	23D26'50" S 070D22'50" W ATIS B-200/450

<110> Open Excel file

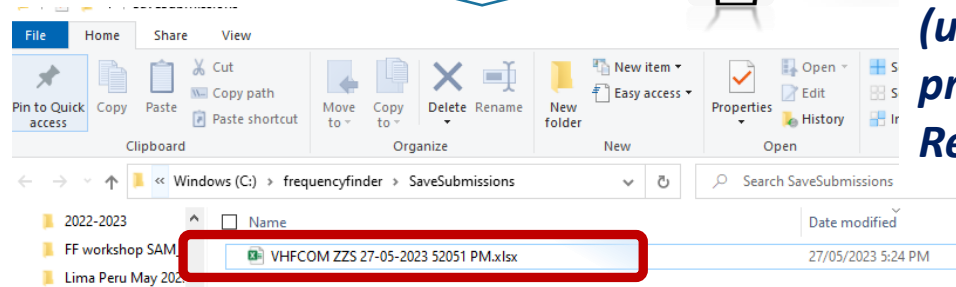
An Excel file will be created containing your submissions, which you can attach later to an email message to be sent to the Regional Office.

Cancel Open

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

Click **"Open"**

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



MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC
SM	F	419973	APAC	118.375	I	ZZZ	Waalwijk	26D00'00" N 091D00'00" E ATIS B-200/450



## ***Demonstrations***

### ***Add, Modify or Delete Frequency***

**Demonstration 3-** Delete a frequency, using ICAO APAC Key 422390.

- 1) Query a frequency (State: **ICAOTEST APAC**, Service **ACC-L**)
- 2) Delete this frequency, and
- 3) submit it to the regional officer.

.

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

79

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

Click **“Query”**

In this demonstration,  
select,

Country: **ICAO TEST SAM**

Service: **ACC-L**

QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY DATABASE QUERY

Region ==APAC

Country ==ICAOTEST APAC R

Location ==Waalwijk R

Frequency No Frequency selected

Service ACC-L

FIR Sector No FIR name selected

Ext. Range No ER selected

Find

Click **“Find”**

Your Query outcome  
(the data with key 422390)  
is displayed in this  
demonstration.

Click **“Delete Record”**

FF\_2023\_02 Runtime Active Region ==APAC COM list 3 for VHF COM air/ground frequency assign

Start Home Delete Record Active Find NEW/MOD Frequency TEST frequency Calculation results

Global COM 29412 total 1 found RESET QUERY

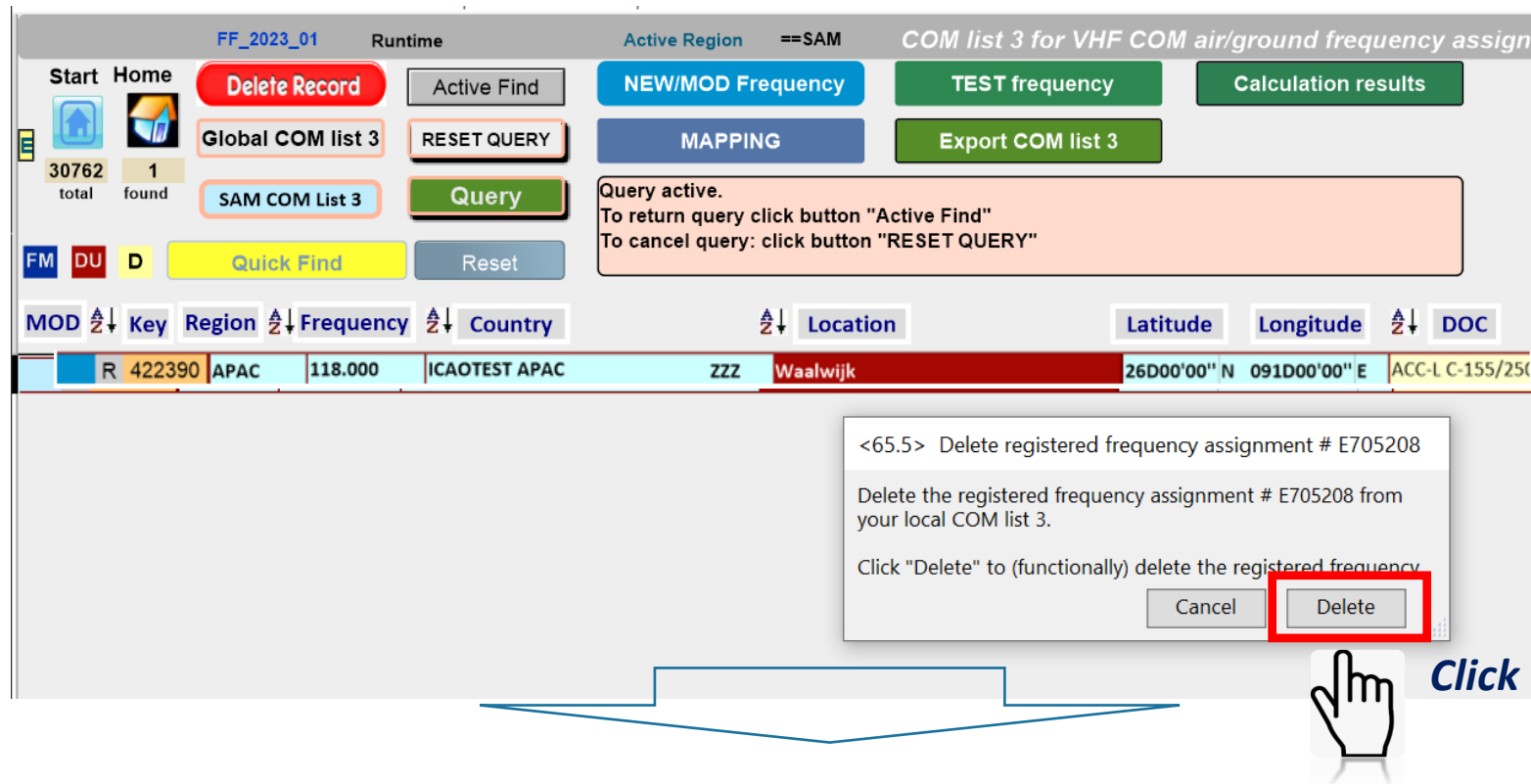
APAC COM Query

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

MOD	Key	Region	Frequency	Country	Location	Latitude	Longitude	DOC
R	422390	APAC	118.000	ICAOTEST APAC	ZZZ	Waalwijk	26D00'00"N 091D00'00"E	ACC-L C-155/250

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

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



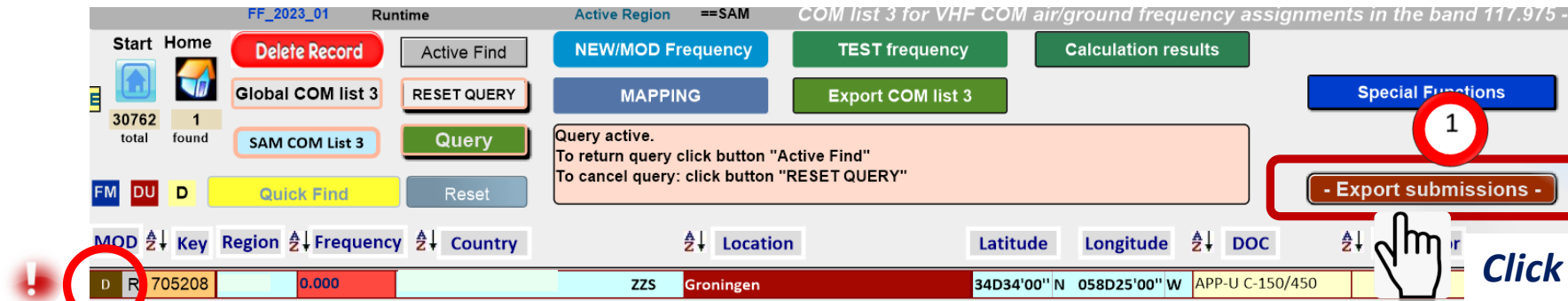
- If you are deleting a “registered frequency”, you need to submit it to the Regional officer using “export submission”.
- If you are deleting a “draft frequency”, there is no need to send it to Regional office.

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

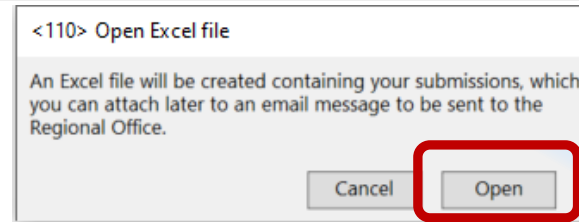
# Export Submissions

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*The registered frequency needs to report to the Regional officer*

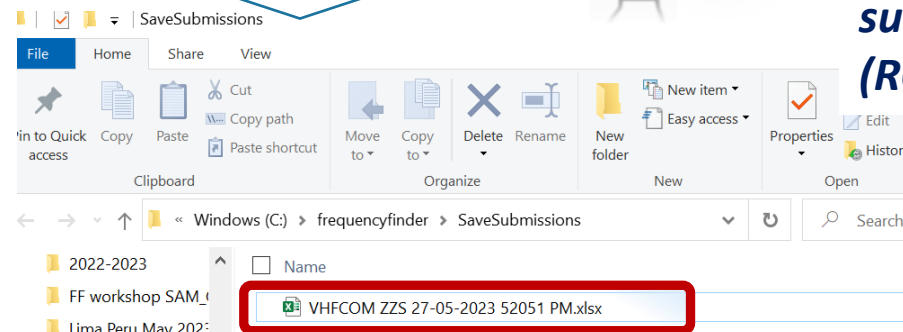


Click **"Export submission"** to report New, Mod or Del frequency to the regional officer



Click **"Open"**

Through a dialogue box, the State (user) can consult the Excel file prior to 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”.

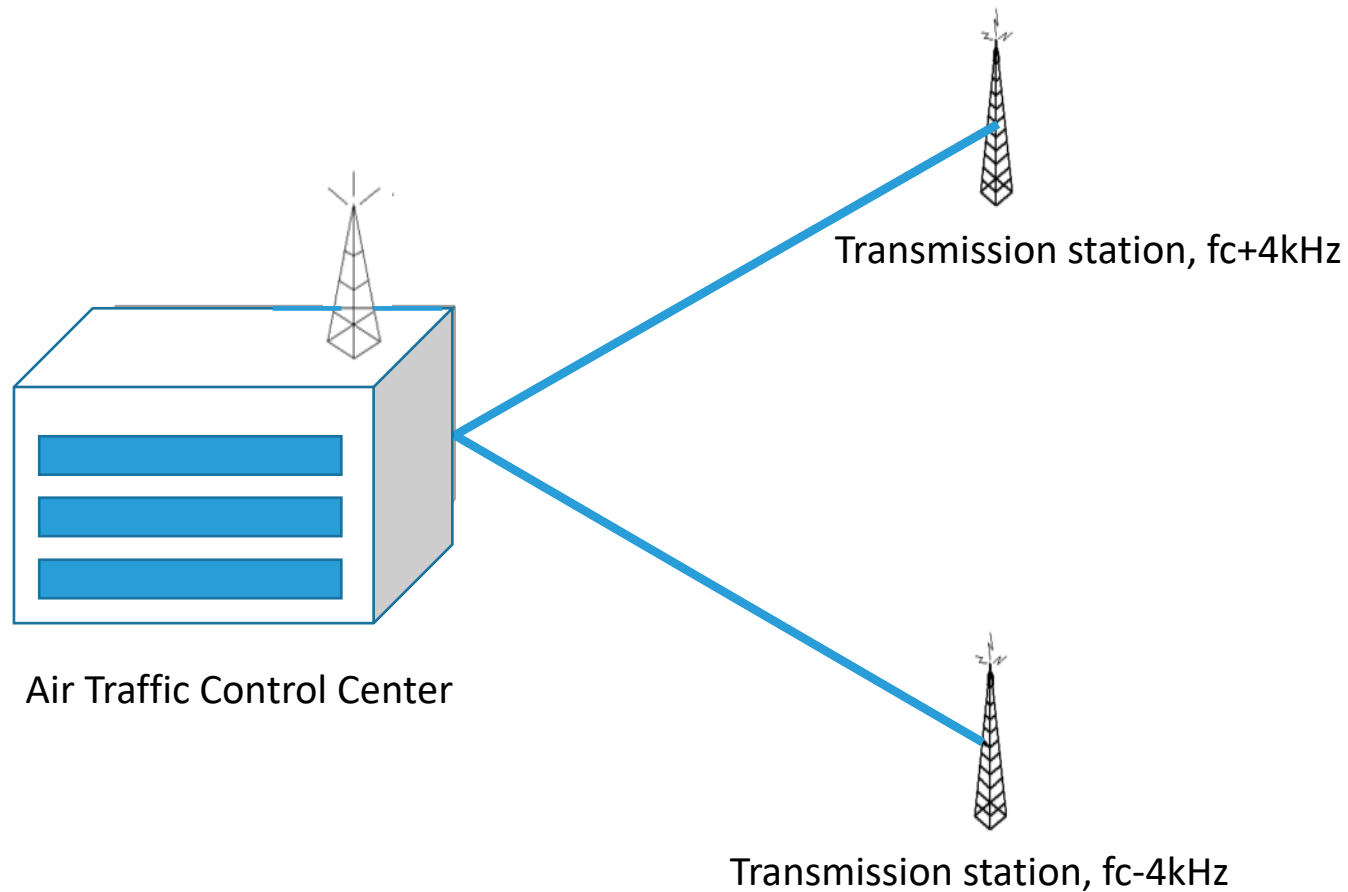
**Exercise 3- DEL:** Delete the ATIS frequency of your country you created in the **Exercise 2- MOD**.

- 1) Query a frequency (in your country) and select the frequency you created in the Exercise 2 MOD.
- 2) Click “Delete Record ”.
- 3) Click “Delete”
- 3) Submit it to the Regional officer.

## ***Applying Extended Range (ER) and Area Service***

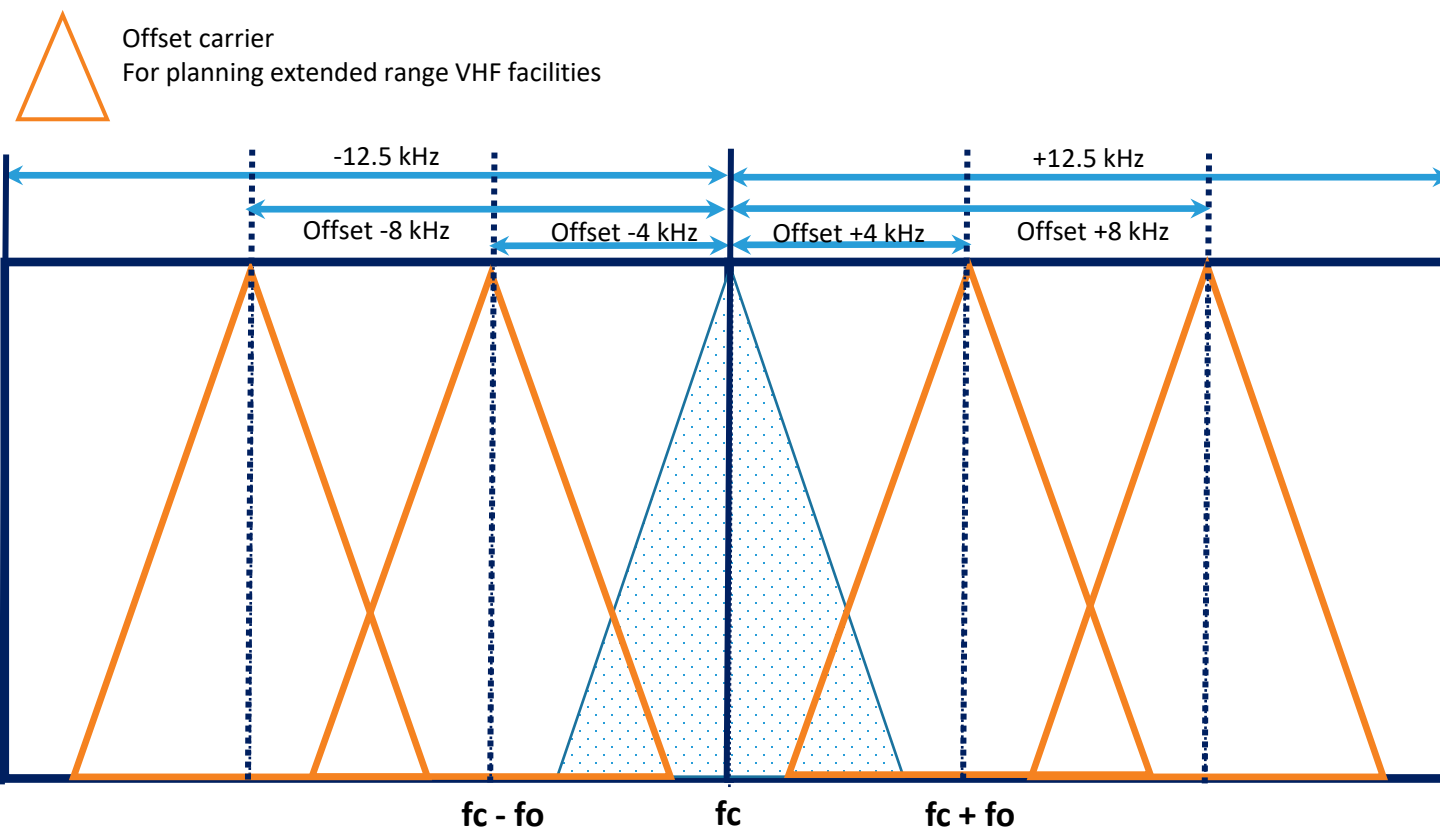


## Extended Range (ER) Facilities



- 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)***

# Adding Extended Range stations Example 1

1) **Add two frequencies** based on 401611 (Viet Nam 130.100) and 401612 (Viet Nam 130.100)

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R	401611	APAC	130.100	Viet Nam	VTN	CAT BI	20D49'18" N	106D43'30" E	ACC-U C-260/450
R	401612	APAC	130.100	Viet Nam	VTN	GIA LAM	20D59'20" N	105D51'41" E	ACC-U C-260/450

## A frequency based on 401611 (Viet Nam 130.100)

Change information (like below)

- Country : ICAOTEST APAC,
- Location : TEST 4
- Service : ACC-U
- Frequency : **125.925**
- Remark: TEST WORKSHOP 2023

At this moment, No FIR, No extended range

## A frequency based on 401612 (Viet Nam 130.100)

Change information (like below)

- Country : ICAOTEST APAC
- Location : TEST 5
- Service : ACC-U
- Frequency : **125.925**
- Remark : TEST WORKSHOP 2023

At this moment, No FIR, No extended range

## Save as draft frequencies

MOD DN New assignment Station

Insert from menu or type name

Region APAC

Country ICAOTEST APAC

Location TEST 4

Latitude 20 D 49 ' 18 " N

Longitude 106 D 43 ' 30 " E

Service ACC-U

DOC ACC-U C-200/450

Range (NM) 200

Height (feet) 45000

Key D 422404

Cat NAT

Channel spacing 25 kHz

8.33 kHz

Frequency 125.925

ER family

Example: ER-BOT-01

Set Area Service

FIR SECTORNAME No area service set or selected

PolyID Enter Poly ID

Reset

Remarks TEST

TEST

Not tested

MOD DN New assignment Station

Insert from menu or type name

Region APAC

Country ICAOTEST APAC

Location TEST 5

Latitude 20 D 59 ' 20 " N

Longitude 105 D 51 ' 41 " E

Service ACC-U

DOC ACC-U C-200/450

Range (NM) 200

Height (feet) 45000

Key D 422406

Cat NAT

Channel spacing 25 kHz

8.33 kHz

Frequency 125.925

ER family

Example: ER-BOT-01

Set Area Service

FIR SECTORNAME No area service set or selected

PolyID Enter Poly ID

Reset

Remarks TEST

TEST

Not tested

ICAO



# Adding Extended Range stations Example 1 Cont.

90

2) Then, check compatibility test.  
Outcome indicates “not compatible”

3 / 3 records

Regional COM list Show all records

Test for the frequency ...125.925MHz

Go to adj. frequency calc. Go to Summary Plot interference - All

Draft	Key	D 422406	Frequency	125.925	Range	200	Height	45000	Radio Horizon	261	Sectorname		Latitude	20D59'20" N	Service	ACC-U
1	Region	APAC	Country	ICAOTEST APAC	Location	TEST 5							Longitude	105D51'41" E	DOC	ACC-U C-200/450
Not compatible with record #2										Margin	-873 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	Key	D 422405	Frequency	125.925	Range	200	Height	45000	Radio Horizon	261	Sectorname		Latitude	20D49'18" N	Service	ACC-U			
2	Region	APAC	Country	ICAOTEST APAC	Location	TEST 4							Longitude	106D43'30" 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	49 NM	Required distance	922 NM	Margin	-873 NM	Not compatible	ACC Upper Circular	Ext. range	Plot interference



## Adding Extended Range stations Example 1 Cont.

- 3) Add extended range to those two  
ER-VNM-01 to both of added draft frequencies

The image displays two side-by-side screenshots of the ICAO station configuration interface, showing the process of adding an extended range (ER) to draft frequencies.

**Left Screenshot (Station Key D 422406):**

- MOD DN:** New assignment
- Region:** APAC
- Key:** D 422406
- Cat:** NAT
- Channel spacing:** 25 kHz (selected), 8.33 kHz (available)
- Country:** ICAOTEST APAC
- Ctry:** ZZZ
- Location:** TEST 5
- Latitude:** 20 D 59 ' 20 " N
- Longitude:** 105 D 51 ' 41 " E
- Frequency:** 125.925
- Service:** ACC-U
- DOC:** ACC-U C-200/450
- Range (NM):** 200
- Height (feet):** 45000
- ER family:** ER-VNM-01 (selected)
- FIR SECTORNAME:** No area service set or selected
- PolyID:** Enter Poly ID
- Remarks:** TEST
- TEST button:** The selected frequency is NOT compatible. Not tested

**Right Screenshot (Station Key D 422405):**

- MOD DN:** New assignment
- Region:** APAC
- Key:** D 422405
- Cat:** NAT
- Channel spacing:** 25 kHz (selected), 8.33 kHz (available)
- Country:** ICAOTEST APAC
- Ctry:** ZZZ
- Location:** TEST 4
- Latitude:** 20 D 49 ' 18 " N
- Longitude:** 106 D 43 ' 30 " E
- Frequency:** 125.925
- Service:** ACC-U
- DOC:** ACC-U C-200/450
- Range (NM):** 200
- Height (feet):** 45000
- ER family:** ER-VNM-01 (selected)
- FIR SECTORNAME:** No area service set or selected
- PolyID:** Enter Poly ID
- Remarks:** TEST
- TEST button:** Not tested

ER-VNM-01

Save as draft frequencies

# Adding Extended Range stations Example 1 Cont.

## 4) Outcome indicates “compatible” thanks to Ext Range

3 / 3 records

Regional COM list

Show all records

Test for the frequency ...125.925MHz

Go to adj. frequency calc.

Go to Summary

Plot interference - All

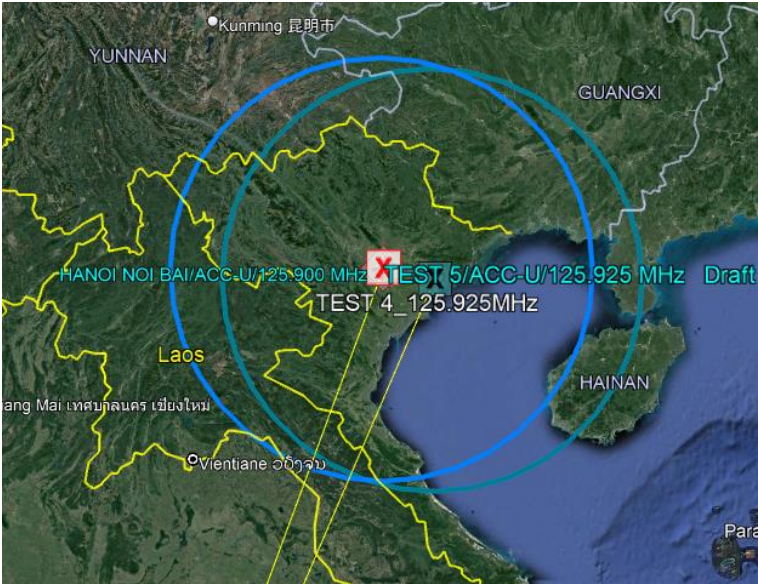
Draft 1	Key D 422406	Frequency 125.925	Range 200	Height 45000	Radio Horizon 261	Sectorname	Latitude 20D59'20" N	Service ACC-U
	Region APAC	Country ICAOTEST APAC			Location TEST 5		Longitude 105D51'41" E	DOC ACC-U C-200/450
Margin 0 NM							Compatible	ACC Upper Circular
							Ext. range ER-VNM-01	Plot 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 422405	Frequency 125.925	Range 200	Height 45000	Radio Horizon 261	Sectorname	Latitude 20D49'18" N	Service ACC-U
	Region APAC	Country ICAOTEST APAC			Location TEST 4		Longitude 106D43'30" 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 49 NM	Required distance 922 NM	Margin 0 NM	Extended Range	ACC Upper Circular
							Ext. range ER-VNM-01	Plot interference

Extended Range



*Exercise*  
*Add, Modify or Delete Frequency*

***Exercise 4- Update your COM List 3 of the  
Frequency Finder, using your latest data.***

# ***Demonstrations Area Service***

# Applying Area Service Example 1

95

*Using an ACC-U frequency in Bangladesh (DHAKA HSIA, 123.700, ACC-U), check the influence when we applied FIR to the frequency.*

A frequency with key code 404111 (DHAKA HSIA, 123.700, ACC-U) is not compatible with a frequency with key code 401977 (China, 123.700 MHz).

The required distance is 1042 NM, but the actual distance is 831 NM.  
Its margin is -211 NM.

Regional COM list

Show all records

Frequencies with a margin greater than 300 NM are not shown

Go to adj. frequency calc.

Go to Summary

Plot interference - All

Test for the frequency ...123.700MHz

1	Key	R 404111	Frequency	123.700	Range	260	Height	45000	Radio Horizon	261	Sectorname		Latitude	23D46'00"	N	Service	ACC-U
	Region	APAC	Country	Bangladesh	Location	DHAKA HSIA							Longitude	090D23'00"	E	DOC	ACC-U C-260/450
Not compatible with record #2										Margin	-211 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 401977	Frequency	123.700	Range	260	Height	45000	Radio Horizon	261	Sectorname		Latitude	30D35'00"	N	Service	ACC-U		
	Region	APAC	Country	China	Location	CHENGDU ACC							Longitude	103D57'00"	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	831 NM	Required distance	1042 NM	Margin	-211 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 between unprotected services are only shown for information.

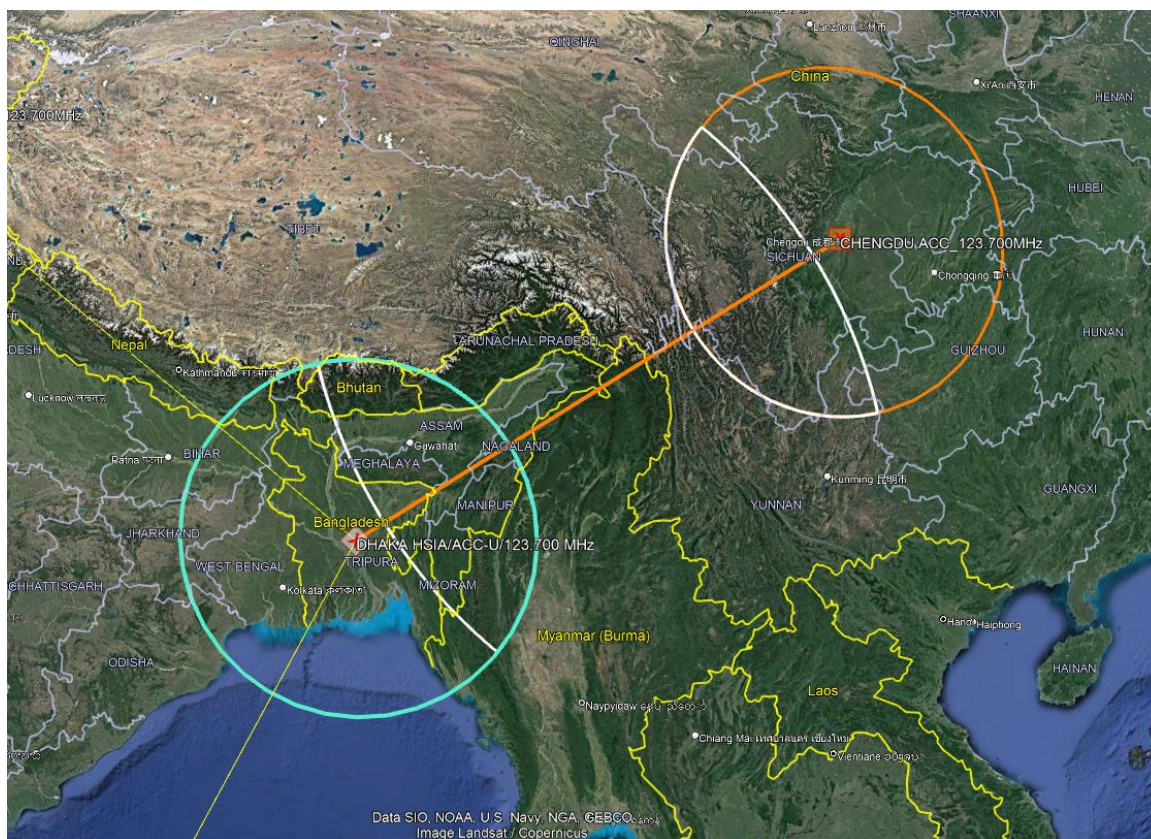


# Applying Area Service Example 1 Cont.

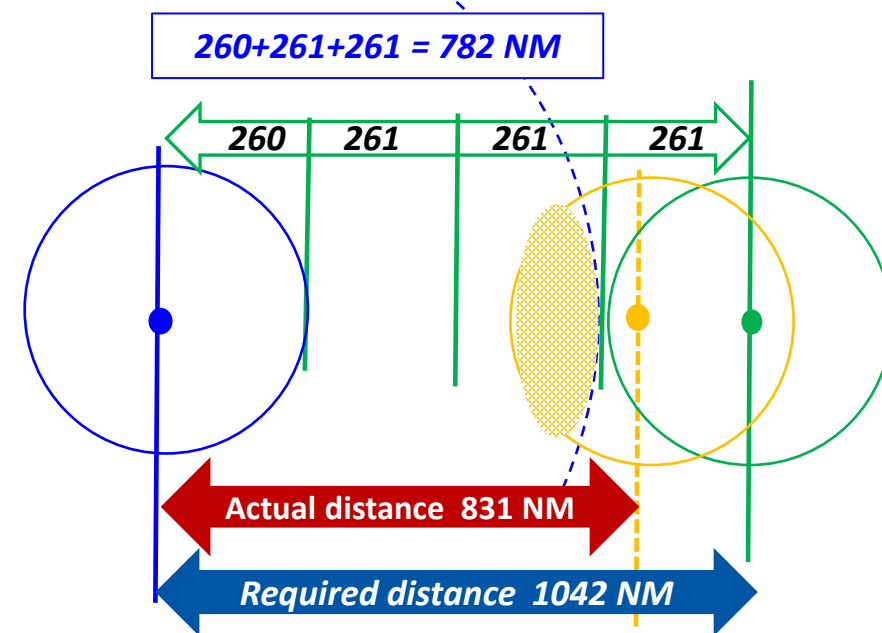
96

A frequency with key code 404111 (*DHAKA HSIA, 123.700, ACC-U*) is not compatible with a frequency with key code 401977 (China, 123.700 MHz).

The required distance is 1042 NM, but the actual distance is 831 NM.  
Its margin is -211 NM.



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



## Applying Area Service Example 1 Cont.

A frequency with key code 404111 (DHAKA HSIA, 123.700, ACC-U) is not compatible with a frequency with key code 401977 (China, 123.700 MHz).

*If added DHAKA FIR (Poly ID: 99181) to the frequency ACC-U frequency in DHAKA HSIA (DHAKA HSIA, 123.700, ACC-U, key code 404111), what will be the outcome of the compatibility test?*

Station

MOD DR Mod assignment

Region APAC Key D 404111 Cat ICAO Channel spacing 25 kHz 8.33 kHz

Country Bangladesh Ctry BGD

Location DHAKA HSIA

Latitude 23 D 46 ' 00 " N S

Longitude 090 D 23 ' 00 " E W

Service ACC-U

DOC ACC-U A-450

Range (NM) 260 Height (feet) 45000

ER family

Example: ER-BOT

Set Area Service

FIR SECTORNAME FIR DHAKA PolyID 99181 Reset

Remarks

TEST Not tested

If added Poly ID (99181)

Refer to **Appendix G** of the **user manual** for Poly ID

## Applying Area Service Example 1 Cont.

*If added DHAKA FIR (Poly ID: 99181) to the frequency ACC-U frequency in DHAKA HSIA (DHAKA HSIA, 123.700, ACC-U, key code 404111), what will be the outcome of the compatibility test?*

Regional COM list Show all records Test for the frequency ...123.700MHz

Frequencies with a margin greater than 300 NM are not shown

Go to adj. frequency calc. Go to Summary Plot interference - All

1	Key R 404111	Frequency 123.700	Range 260	Height 45000	Radio Horizon 261	Sectorname	Latitude 23D46'00" N	Service ACC-U
	Region APAC	Country Bangladesh			Location DHAKA HSIA		Longitude 090D23'00" E	DOC ACC-U C-260/450
Not compatible with record #2								
Margin -211 NM Not compatible ACC Upper 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.								
2	Key R 401977	Frequency 123.700	Range 260	Height 45000	Radio Horizon 261	Sectorname	Latitude 30D35'00" N	Service ACC-U
	Region APAC	Country China			Location CHENGDU ACC		Longitude 103D57'00" 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 831 NM Required distance 1042 NM Margin -211 NM Not compatible ACC Upper Circular 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 404111 (DHAKA HSIA, 123.700, ACC-U) is not compatible with a frequency with key code 401977 (China, 123.700 MHz). The required distance is 1042 NM, but the actual distance is 831 NM. **Its margin is -211 NM.**

Regional COM list Show all records Test for the frequency ...123.700MHz

Frequencies with a margin greater than 300 NM are not shown

Go to adj. frequency calc. Go to Summary Plot interference - All

Draft 1	Key D 404111	Frequency 123.700	Range 260	Height 45000	Radio Horizon 261	Sectorname 99181	Latitude 23D46'00" N	Service ACC-U
	Region APAC	Country Bangladesh			Location DHAKA HSIA		Longitude 090D23'00" E	DOC ACC-U A-450
Not compatible with record #2								
Margin -86 NM Not compatible ACC Upper Area 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 401977	Frequency 123.700	Range 260	Height 45000	Radio Horizon 261	Sectorname	Latitude 30D35'00" N	Service ACC-U
	Region APAC	Country China			Location CHENGDU ACC		Longitude 103D57'00" E	DOC ACC-U C-260/450
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 696 NM Required distance 782 NM Margin -86 NM Not compatible ACC Upper Circular 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 404111 (DHAKA HSIA, 123.700, ACC-U) is not compatible with a frequency with key code 401977 (China, 123.700 MHz). **But its margin is reduced from -211 NM to -86 NM.**

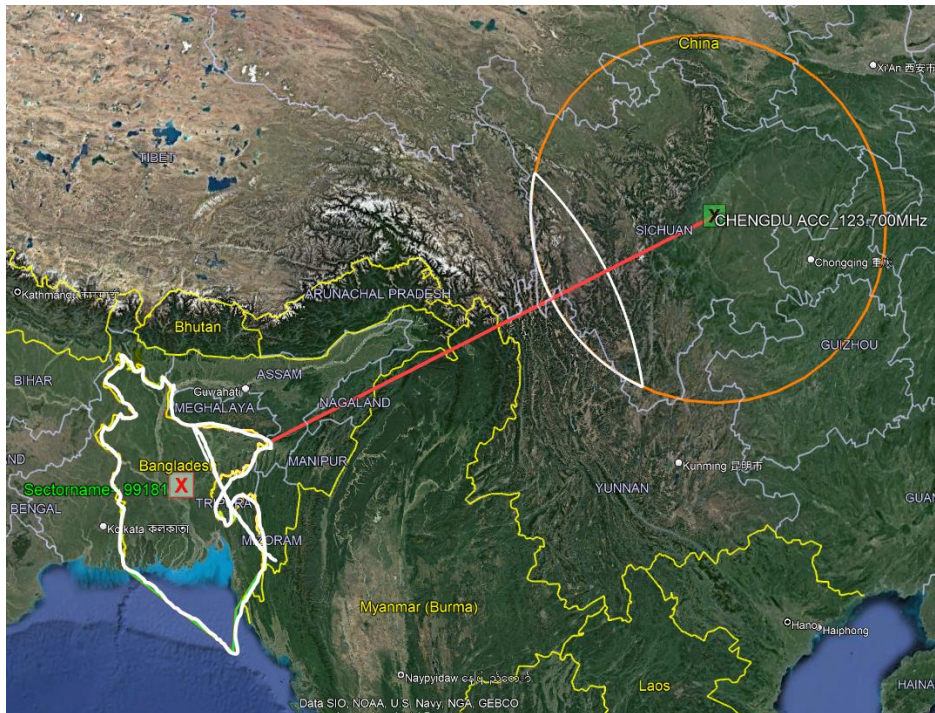


## Applying Area Service Example 1 Cont.

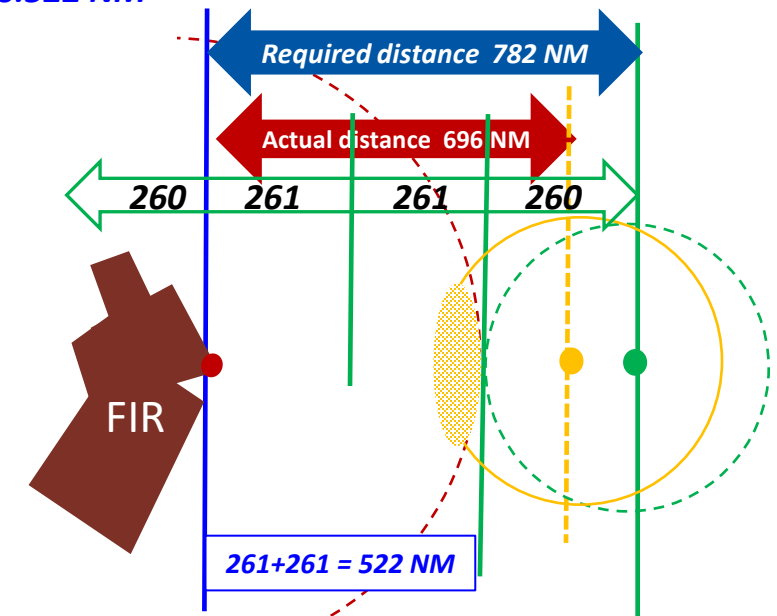
99

*If added DHAKA FIR (Poly ID: 99181) to the frequency ACC-U frequency in DHAKA HSIA (DHAKA HSIA, 123.700, ACC-U, key code 404111), what will be the outcome of the compatibility test?*

A frequency with key code 404111 (DHAKA HSIA, 123.700, ACC-U) is not compatible with a frequency with key code 401977 (China, 123.700 MHz).  
**But its margin is reduced from -211 NM to -86 NM.**

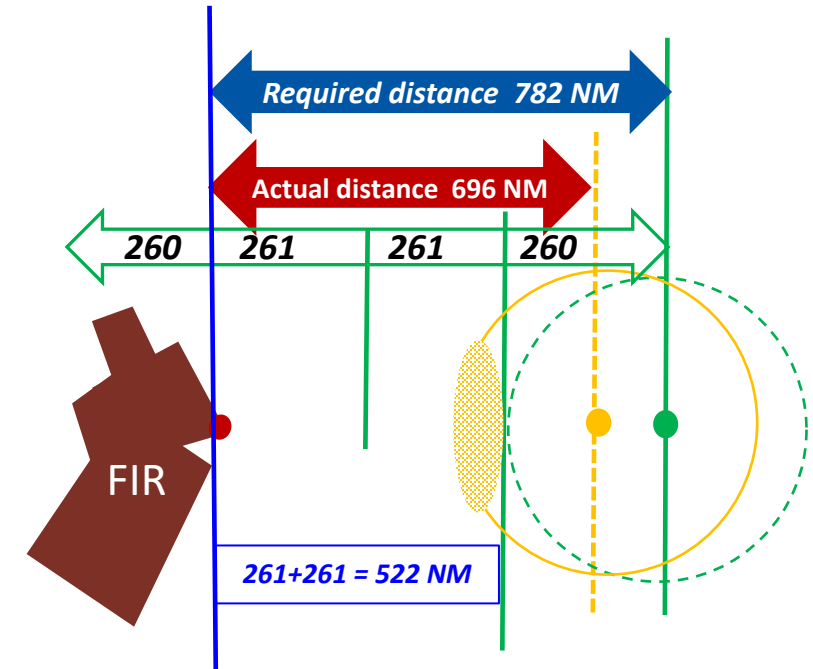
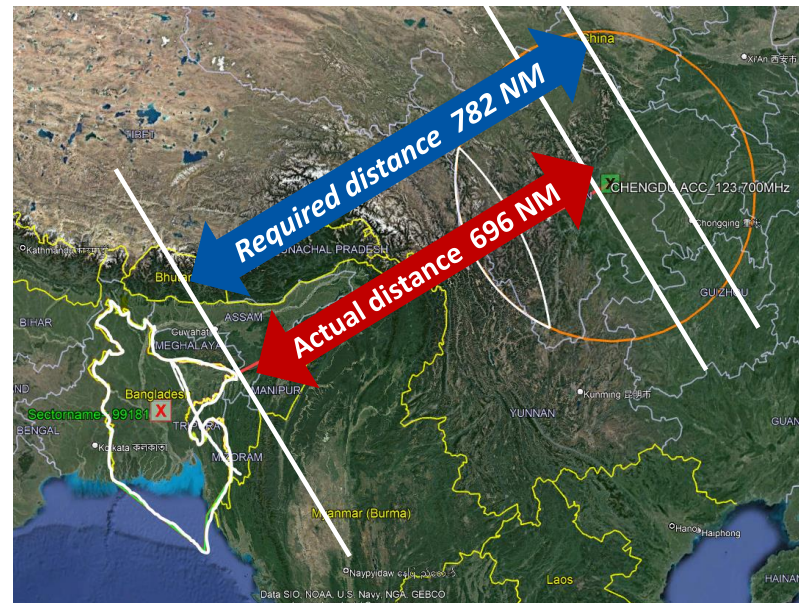
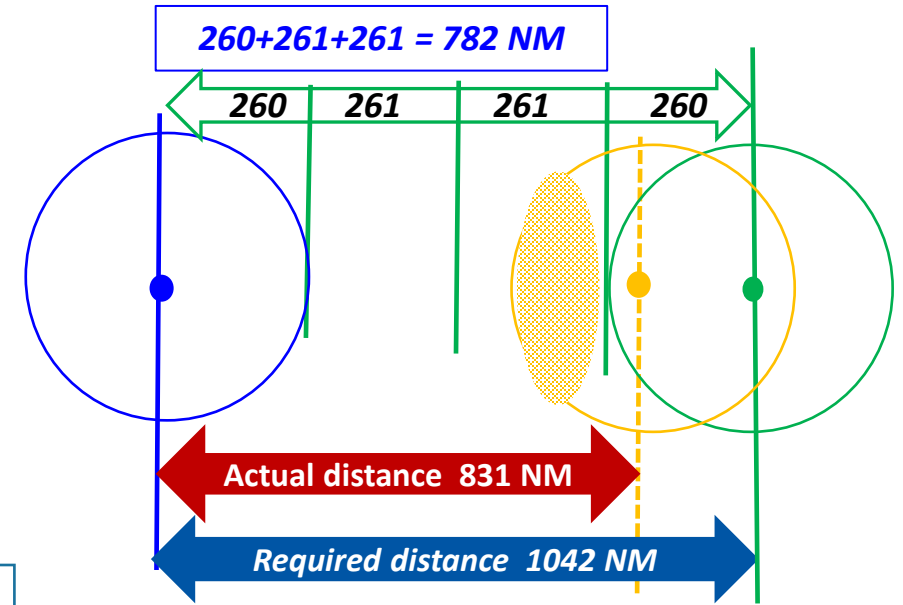
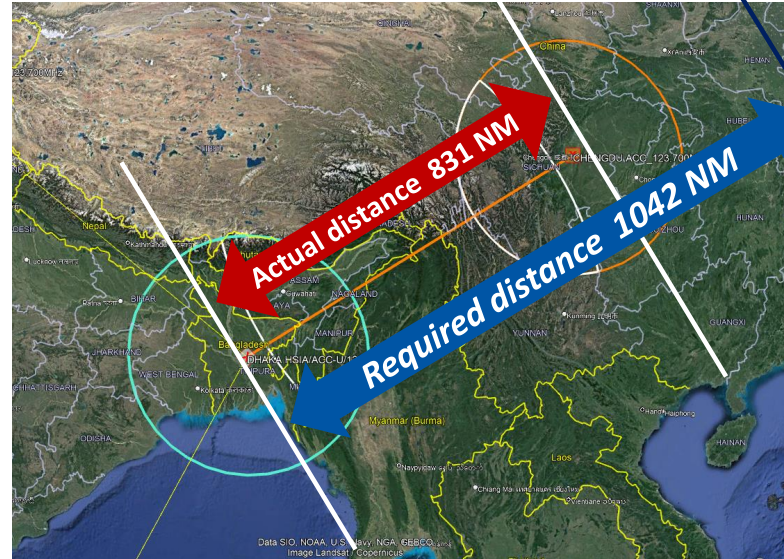


*FF calculates the possible interference based on the radius:522 NM*



# Applying Area Service Example 1 Cont.

100





## Applying Area Service Example 2

*Using an ACC-U frequency in Guyana (GEORGETOWN, 128.600, ACC-U), check the influence when we applied FIR to the frequency.*

A frequency with key code 702217 (Guyana, GEORGETOWN, 128.600) is not compatible with a frequency with key code 701964 (Colombia, 128.600 MHz).

The required distance is 1044 NM, but the actual distance is 955 NM. Its margin is 89 NM.

Regional COM list
Show all records

Test for the frequency ...128.600MHz
Go to adj. frequency calc.
Go to Summary
Plot interference - All

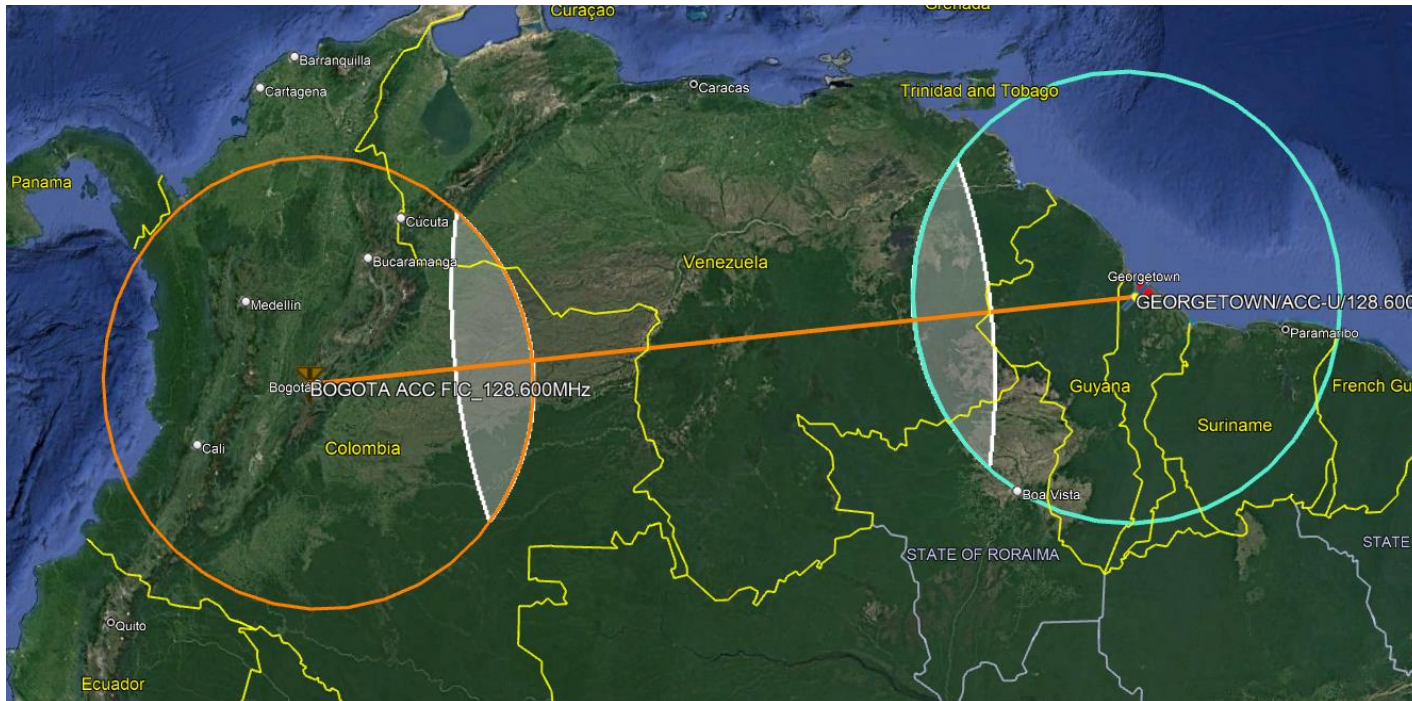
1	Key	R 702217	Frequency	128.600	Range	261	Height	45000	Radio Horizon	261	Sectorname		Latitude	06D30'00" N	Service	ACC-U			
	Region	SAM	Country	Guyana					Location	GEORGETOWN			Longitude	058D15'00" W	DOC	ACC-U C-260/450			
Not compatible with record #2										Margin	-89 NM	Not compatible	ACC Upper 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 701964	Frequency	128.600	Range	261	Height	45000	Radio Horizon	261	Sectorname		Latitude	04D42'00" N	Service	ACC-U			
	Region	SAM	Country	Colombia					Location	BOGOTA ACC FIC			Longitude	074D08'00" W	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	955 NM	Required distance	1044 NM	Margin	-89 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.																			



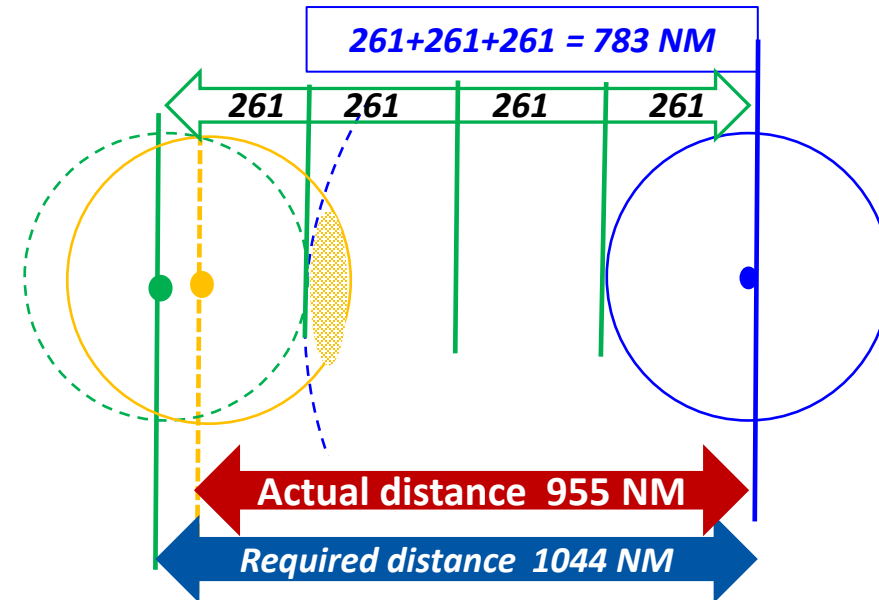
## Applying Area Service Example 2 Cont.

A frequency with key code 702217 (*Guyana, GEORGETOWN, 128.600*) is not compatible with a frequency with key code 701964 (*Colombia, 128.600 MHz*).

The required distance is 1044 NM, but the actual distance is 955 NM. Its margin is 89 NM.



*FF calculates the possible interference based on the radius: 783 NM*



## Applying Area Service Example 2 Cont.

A frequency with key code 702217 (Guyana, GEORGETOWN, 128.600) is not compatible with a frequency with key code 701964 (Colombia, 128.600 MHz).

*If added GEORGETOWN FIR (Poly ID: 99196) to the frequency ACC-U frequency in Guyana (GEORGETOWN, 128.600 MHz, ACC-U, key code 702217), what will be the outcome of the compatibility test?*

**Station**

MOD DR Mod assignment

Region SAM Key D 702217 Cat ICAO Channel spacing 25 kHz 8.33 kHz

Country Guyana Ctry GUY

Location GEORGETOWN

Latitude 06 D 30 ' 00 " N S

Longitude 058 D 15 ' 00 " W E

Frequency 128.600

Service ACC-U

DOC ACC-U A-450

Range (NM) 261 Height (feet) 45000

FIR SECTORNAME FIR GEORGETOWN PolyID 99196

Remarks ER

TEST Not tested

If added Poly ID (99196)

Refer to Appendix G of the user manual for Poly ID

## Applying Area Service Example 2 Cont.

*If added GEORGETOWN FIR (Poly ID: 99196) to the frequency ACC-U frequency in Guyana (GEORGETOWN, 128.600 MHz, ACC-U, key code 702217), what will be the outcome of the compatibility test?*

Regional COM list Show all records

Test for the frequency ...128.600MHz

Go to adj. frequency calc. Go to Summary Plot interference - All

Key	R	Frequency	Range	Height	Radio Horizon	Sectorname	Latitude	Longitude	Service
1	R 702217	128.600	261	45000	261	GEORGETOWN	06D30'00" N	058D15'00" W	ACC-U
Region	SAM	Country	Guyana						DOC ACC-U C-260/450
Not compatible with record #2									
Margin -89 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 701964	128.600	261	45000	261	BOGOTA ACC FIC	04D42'00" N	074D08'00" W	ACC-U
Region	SAM	Country	Colombia						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 955 NM Required distance 1044 NM Margin -89 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.									

A frequency with key code 702217 (Guyana, GEORGETOWN, 128.600) is not compatible with a frequency with key code 701964 (Colombia, 128.600 MHz). The required distance is 1044 NM, but the actual distance is 955 NM. **Its margin is 89 NM.**



2 / 3 records

Regional COM list Show all records

Test for the frequency ...128.600MHz

Frequencies with a margin greater than 300 NM are not shown

Go to adj. frequency calc. Go to Summary Plot interference - All

Key	R	Frequency	Range	Height	Radio Horizon	Sectorname	Latitude	Longitude	Service
1	R 702217	128.600	261	45000	261	99196	06D30'00" N	058D15'00" W	ACC-U
Region	SAM	Country	Guyana						DOC ACC-U A-450
Not compatible with record #2									
Margin -18 NM Not compatible									
ACC Upper Area									
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 701964	128.600	261	45000	261	BOGOTA ACC FIC	04D42'00" N	074D08'00" W	ACC-U
Region	SAM	Country	Colombia						DOC ACC-U C-260/450
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 765 NM Required distance 783 NM Margin -18 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 between unprotected services are only shown for information.									

A frequency with key code 702217 (Guyana 128.600 MHz) applying Georgetown FIR (Poly ID 99196) is not compatible with a frequency with key code 701964 (Colombia, 128.600 MHz). **But its margin is reduced from 89 NM to 18 NM.**

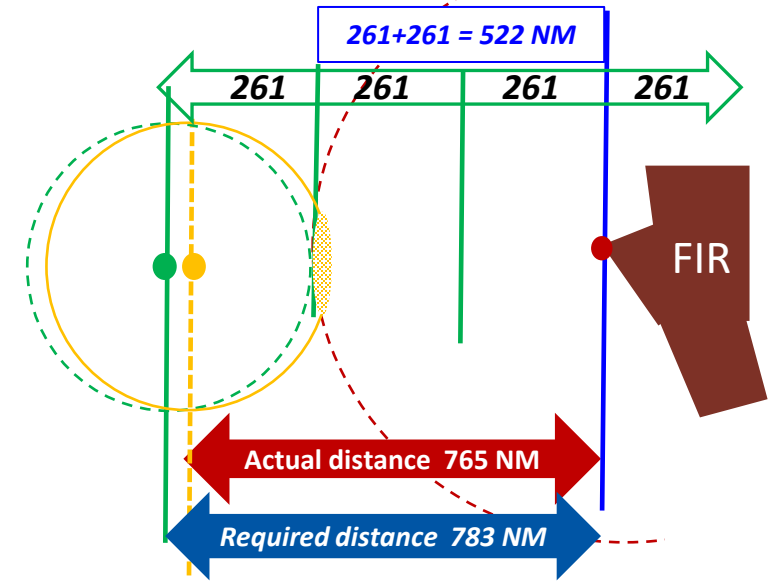
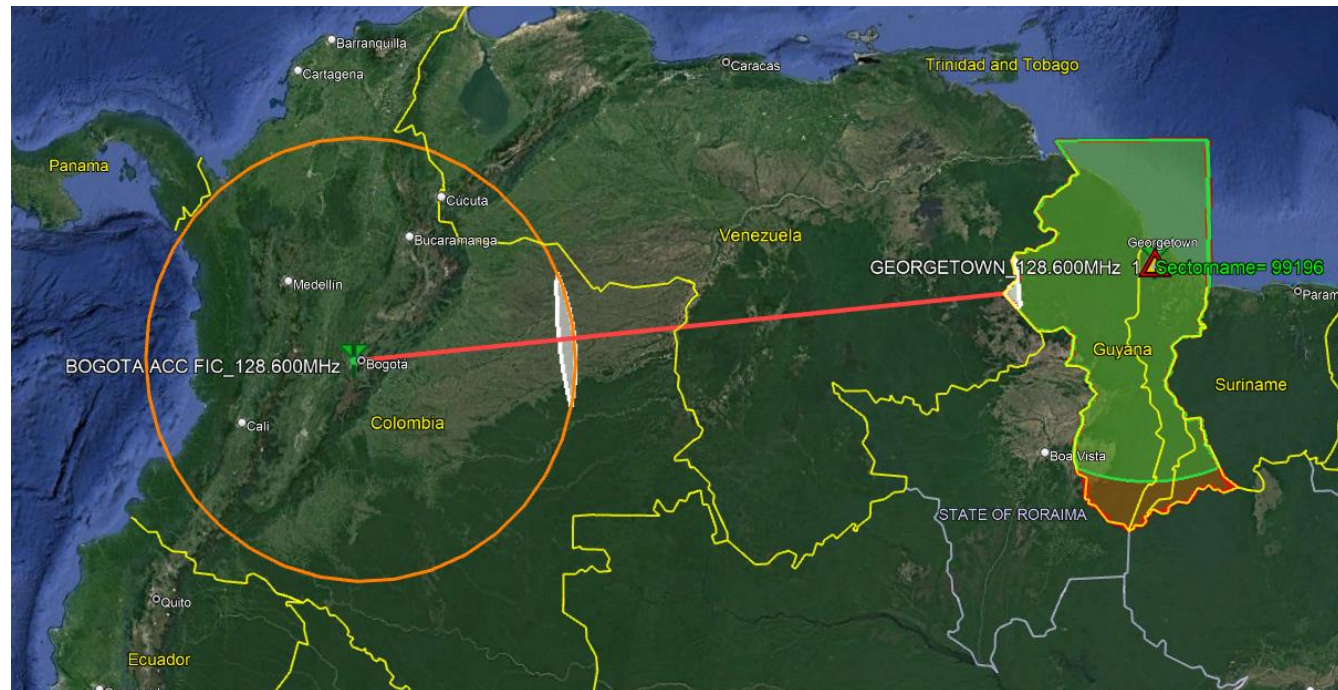


## Applying Area Service Example 2 Cont.

*If added GEORGETOWN FIR (Poly ID: 99196) to the frequency ACC-U frequency in Guyana (GEORGETOWN, 128.600 MHz, ACC-U, key code 702217), what will be the outcome of the compatibility test?*

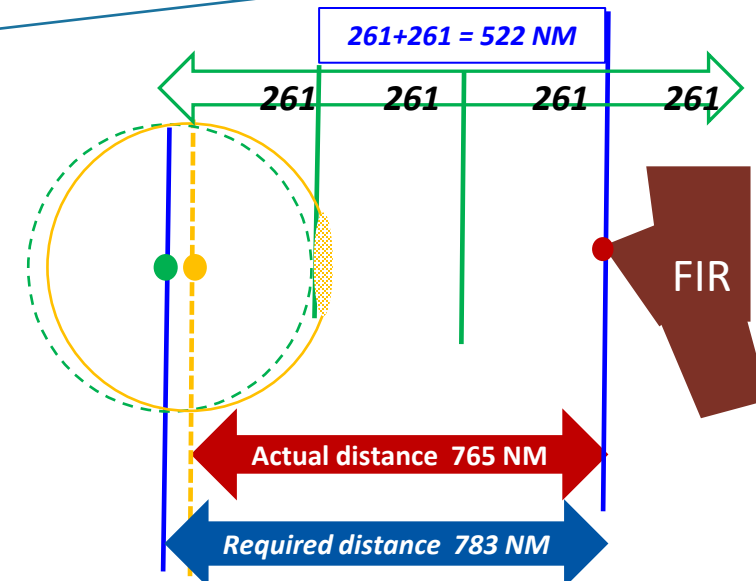
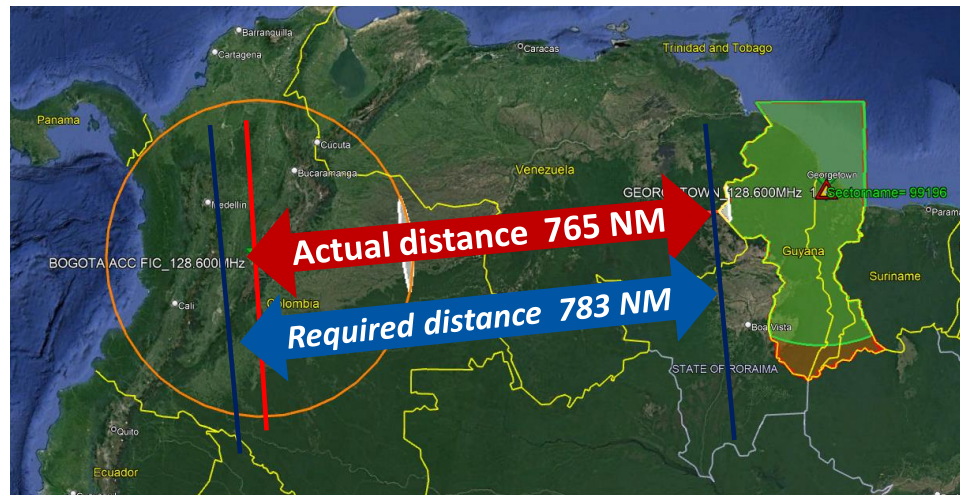
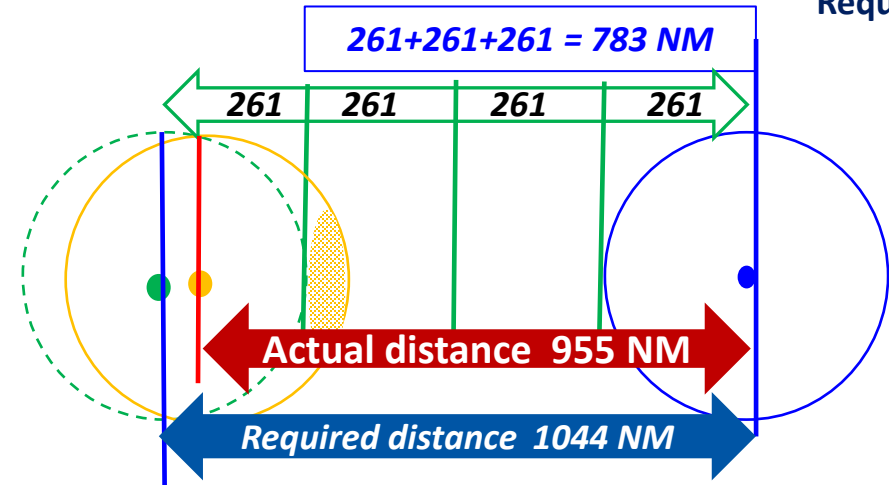
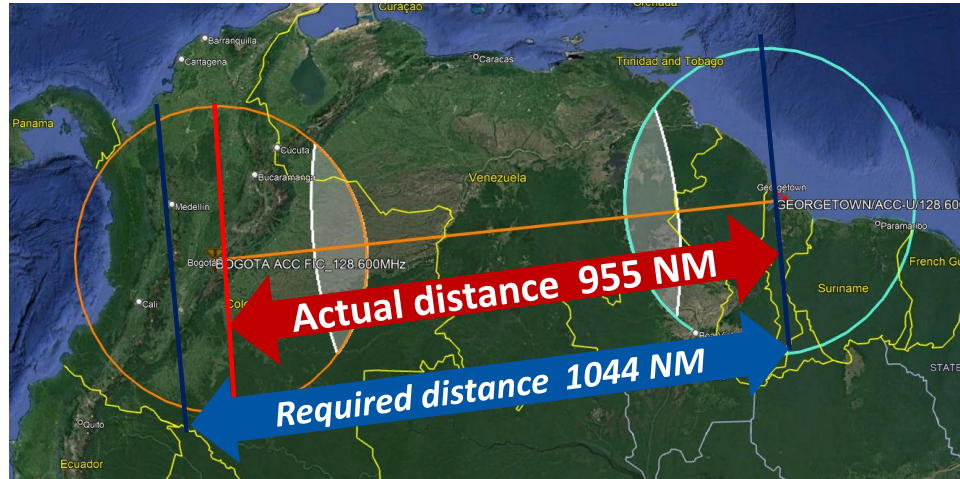
A frequency with key code 702217(Guyana 128.600 MHz) applying Georgetown FIR (Poly ID 99196) is not compatible with a frequency with key code 701964 (Colombia, 128.600 MHz). **But its margin is reduced from 89 NM to 18 NM.**

*FF calculates the possible interference based on the radius: 522 NM*



# Applying Area Service Example 2 Cont.

**Actual Distance**  
**Required Distance**



# *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\_2023.01 Runtime 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

total found 10376 1 Query

Quick Find Reset

MOD Key Region Frequency Country Loc

N ? AFI 118.025 ICAOTEST AFI ZZA TEST

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);

<110> Open Excel file

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

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

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

Cancel Open

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

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

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

**3. Attach the excel file to your e-mail and send it to the Regional officer**

## *Exercises*

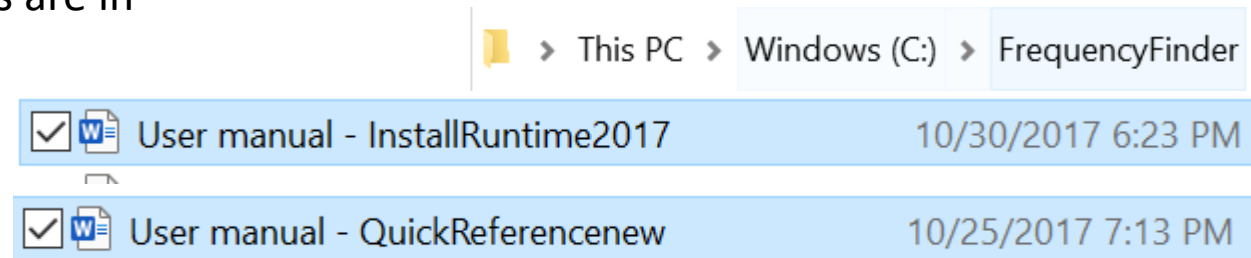
### *Special functions*

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

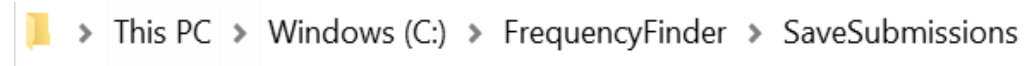
## Reference Materials and websites

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

- Other user manuals are in



- Saved submissions are in





Thank You!