

*DCS WORLD*  
*DYNAMIC WEATHER* *Rev 3*



This is a RedRabbit Production

In the DCS Mission Editor create a new mission or edit an existing one you would like to add dynamic weather to.

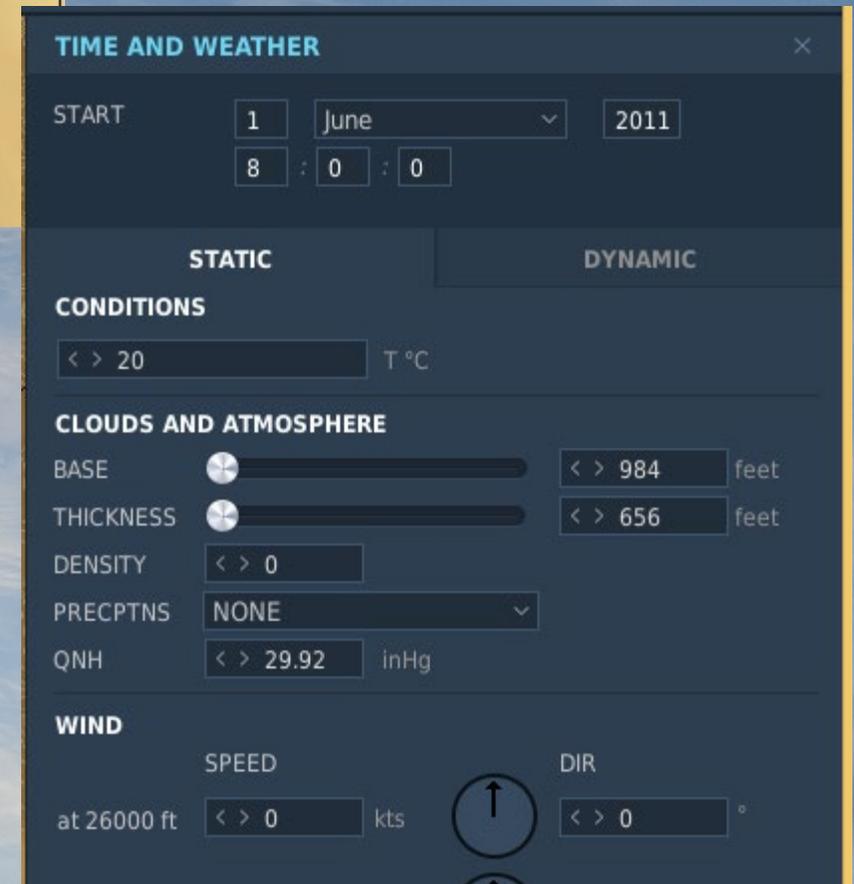
For new missions you may want to add a pilotable plane to test your weather affects. You probably should go ahead and add some “Smoke” markers to help show the wind strength and direction.

Select the Weather “Cloud Icon”

This will automatically come up in Static

At this point you could set Cloud Levels and Rain, but I believe the settings in Dynamic appear to override these.

*The Dynamic Tab does not appear to be in the latest version of DCS World, but older missions with Dynamic Weather will open in the new Dynamic Weather Dialog tab*



Set desired date and time for mission

By selecting the “Sun and Moon” carrot the slider can be used to see the location of the sun or moon and adjust the mission time.

Set Temperature (Surface Temperature) in Celsius

### BARIC SYSTEM

Cyclone are Low Pressure Systems with wind rotating counter-clockwise around the center

Anti-Cyclones are High Pressure Systems with wind rotating clockwise around the center

### SYSTEMS QUANTITY

Set the quantity of highs and/or lows

### PRESSURE DEVIATION

Sets the barometric pressure/strength of the system in Pa (Pascals) with 0 being calm, + for a High or – for a Low. The larger the number the stronger the system will be (See the section System Strength for more information).

**TIME AND WEATHER**

START 21 June 2016  
6 : 05 : 00

-1 h  +1 h

Sun And Moon >

**CONDITIONS**

< > 20 T °C

**DYNAMIC WEATHER**

BARIC SYSTEM CYCLONE

SYSTEMS QUANTITY < > 1 OF < > 3

PRESSURE DEVIATION < > -1352 Pa

GENERATE

Cyclones

X: < > 366508

Y: < > -300650

Pressure spread < > 915201.958415

Ellipticity < > 0.987488

Pressure excess < > -1352

Rotation < > -1.355449

X: < > 569354

Y: < > -923004

Pressure spread < > 969099.810978

Ellipticity < > 0.987488

Select "Generate" and the systems will be randomly placed on the map.

### Coordinates/Location, CenterZ & CenterX

L Alt + Y will set the reading in F10 map to different cords

0,0 varies from map to map and may not be the center

X is in the Latitude (vertical or North-South)

Y or Z is in the Longitude (horizontal or East-West)

All numbers are in meters



See "DCS MAP COORDNATES" Section for the different map coordinates and 0,0 location

**TIME AND WEATHER**

START: 21 June 2016  
6 : 5 : 0  
-1 h | +1 h

Sun And Moon

CONDITIONS  
< > 20 T °C

DYNAMIC WEATHER  
BARIC SYSTEM: CYCLONE  
SYSTEMS QUANTITY: < > 1 OF < > 3  
PRESSURE DEVIATION: < > -1352 Pa

**GENERATE**

Cyclones

X: < > 366508  
Y: < > -300650  
Pressure spread: < > 915201.958415  
Ellipticity: < > 0.987488  
Pressure excess: < > -1352  
Rotation: < > -1.355449

X: < > 569354  
Y: < > -923004  
Pressure spread: < > 969099.810978  
Ellipticity: < > 0.987488

**Pressure\_Spread** is the size of the system radius in meters. A spread of 50000 will fill one 100 km (54 nm) Grid Square, while a system spread of 1,000,000 will fill the map.

## Ellipticity

Ellipticity is the shape of the system

Less than 1 system is a circle

The greater the number the more it is stretched

The more the system is stretched the higher the wind shear will be on the long axis of the ellipse.

### TIME AND WEATHER

START     
 :  :

#### Sun And Moon

#### CONDITIONS

T °C

#### DYNAMIC WEATHER

BARIC SYSTEM

SYSTEMS QUANTITY  OF

PRESSURE DEVIATION  Pa

#### Cyclones

X:	<input type="text" value="366508"/>
Y:	<input type="text" value="-300650"/>
Pressure spread	<input type="text" value="915201.958415"/>
Ellipticity	<input type="text" value="0.987488"/>
Pressure excess	<input type="text" value="-1352"/>
Rotation	<input type="text" value="-1.355449"/>

X:	<input type="text" value="569354"/>
Y:	<input type="text" value="-923004"/>
Pressure spread	<input type="text" value="969099.810978"/>
Ellipticity	<input type="text" value="0.987488"/>

**Pressure\_Excess** is the strength (Barometric Deviation/Pressure) of the system in Pa (Pascals) either + for a High or – for a Low. Below is a chart showing an example of Barometric pressures in known scales. The Pressure\_Excess may or may not follow these numbers so you will need to experiment as needed to get the effect you are looking for.

### Barometric Pressure Example

Low	Rain			Change				Fair			High		
Mb	960	970	980	990	1000	1010	1015	1020	1030	1040	1050	1060	1070
Pa	96K	97K	98K	99K	100K	101K	101.5K	102K	103K	104K	105K	106K	107K
In Hg	28.3	28.6	28.9	29.2	29.5	29.8	29.97	30.1	30.4	30.7	31.0	31.3	31.6
Mb							Mid						
960	970	980	990	1000	1010	1015	1020	1030	1040	1050	1060	1070	
Deviation	-5500	-4500	-3500	-2500	-1500	-500	0	500	1500	2500	3500	4500	5500

### Rotation

Changing Rotation will change the direction the system is facing. The front face of a system has the highest winds. This can be seen on both round and elliptical systems. On elliptical systems the most powerful sides are on the long axis. Setting the rotation allows you to spin the system.

1 puts the elliptical long axis @ 11 to 5 o'clock.

3 puts the elliptical long axis @ 9 to 3 o'clock.

## TIME AND WEATHER

START     
 :  :

-1 h  +1 h

Sun And Moon >

### CONDITIONS

< > 20 T °C

### DYNAMIC WEATHER

BARIC SYSTEM

SYSTEMS QUANTITY  OF

PRESSURE DEVIATION  Pa

GENERATE

#### Cyclones

X:

Y:

Pressure spread

Ellipticity

Pressure excess

Rotation

X:

Y:

Pressure spread

Ellipticity

## Storm Strength

There are two settings that affect the strength of the storm systems. The first is **Pressure\_Spread** the larger the spread the weaker the winds, and the smaller the spread the higher the winds. The second is the **Pressure\_Excess** this works opposite of spread the larger the number the stronger the winds, the smaller the number creates weaker winds. So a system with a small spread and a large pressure excess will have extreme winds, while a large spread with a low pressure number will have low wind speed and little effect on the maps weather.

## Wind Direction

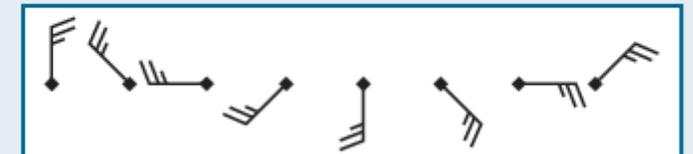
The staff part of a wind barb shows wind direction. The dot end of the staff is where the wind is blowing to, while the top of the staff shows the direction from which the wind is coming.

## Wind Speed

Wind speed is indicated by feathers added to the top of the staff. These feathers show wind speed adjusted to the nearest 5 kt increment. A short feather represents a 5 kt average wind speed. A long feather equals 10 kt. A pennant or flag is used to show a 50 kt wind speed.



Speed:	calm	5	10	15	20	50	55	60	units
Dir (from):	NA	All blowing <i>from</i> the North							
(toward):		or all <i>towards</i> the South							



Speed:	25	25	25	25	25	25	25	25	units
Dir (from):	N	NW	W	SW	S	SE	E	NE	
(toward):	S	SE	E	NE	N	NW	W	SW	

At this point you can set items Turbulence, Fog, Dust-Smoke and Visibility as you would in Static Weather.

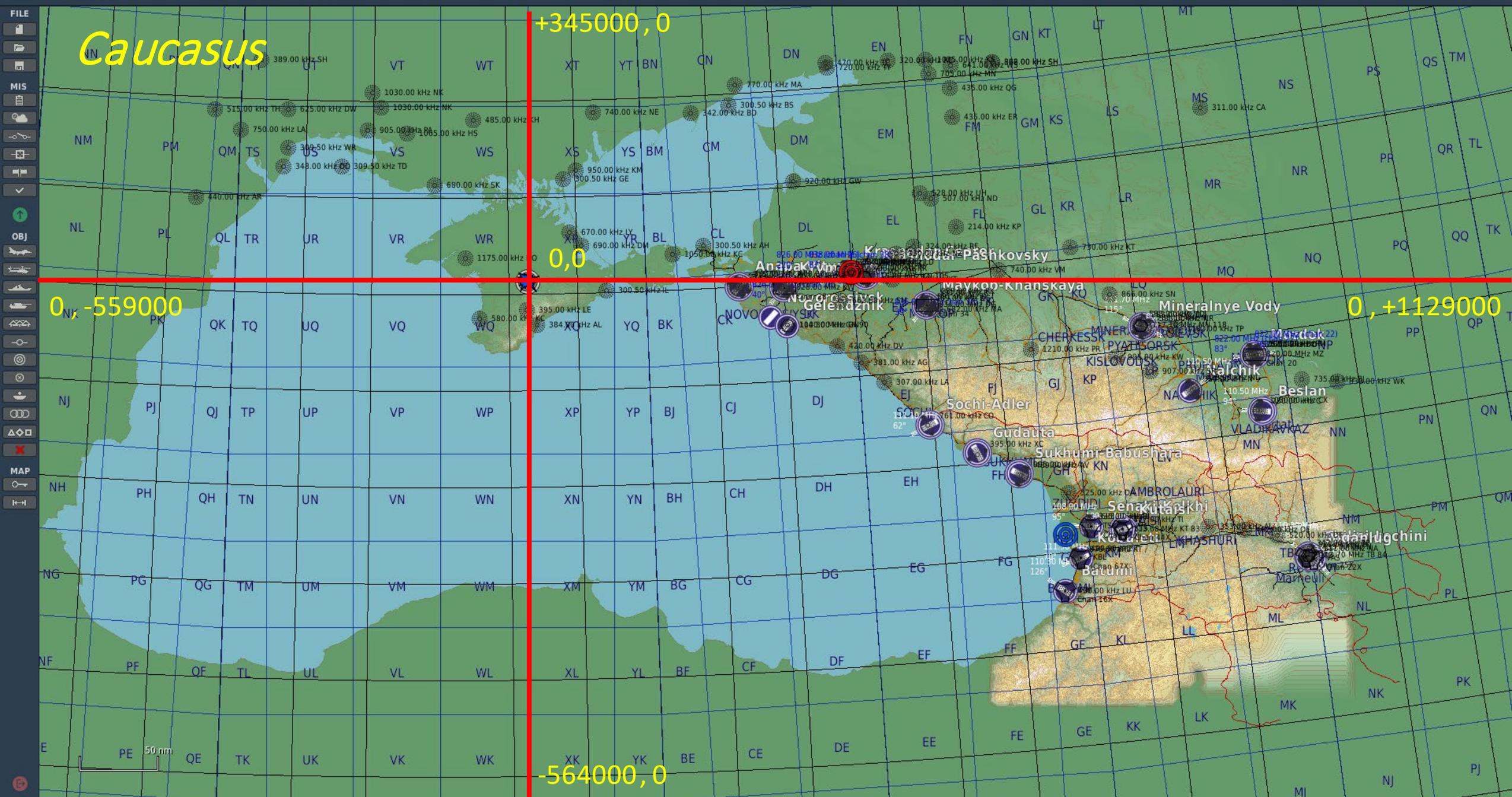
Give the newly created weather a unique name to make it easier to find and hit the save “disk icon”. This file is now located in your “Saved Games” location, typically as below:

C:\Users\“name”\Saved  
Games\DCS“version”\MissionEditor\weather\dynamic





*DCS MAP  
COORDINATES*



Caucasus

+345000, 0

0, 0

0, -559000

0, +1129000

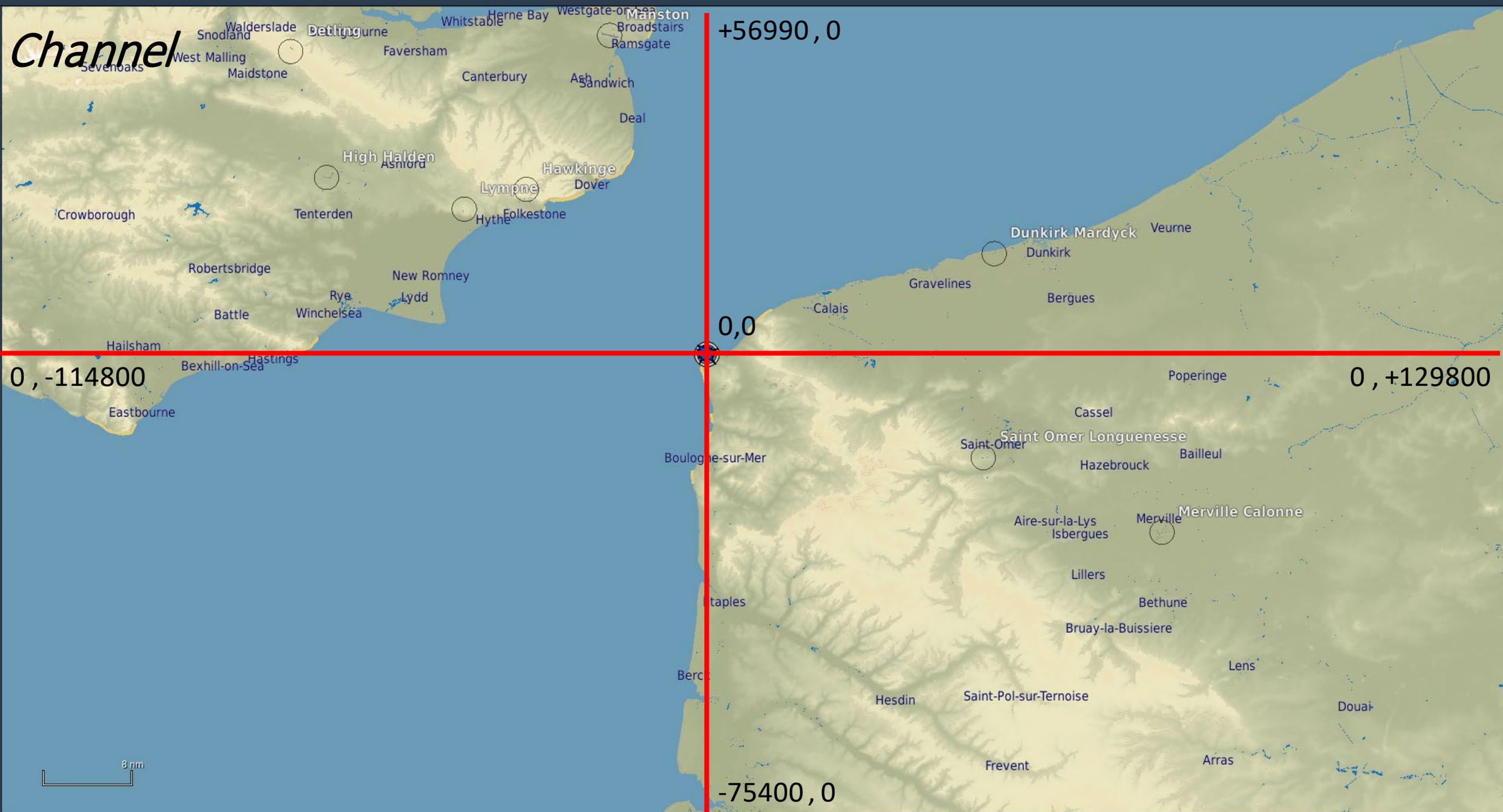
-564000, 0

FILE

MIS

OBJ

MAP



Channel

+56990, 0

0,0

0, -114800

0, +129800

-75400, 0



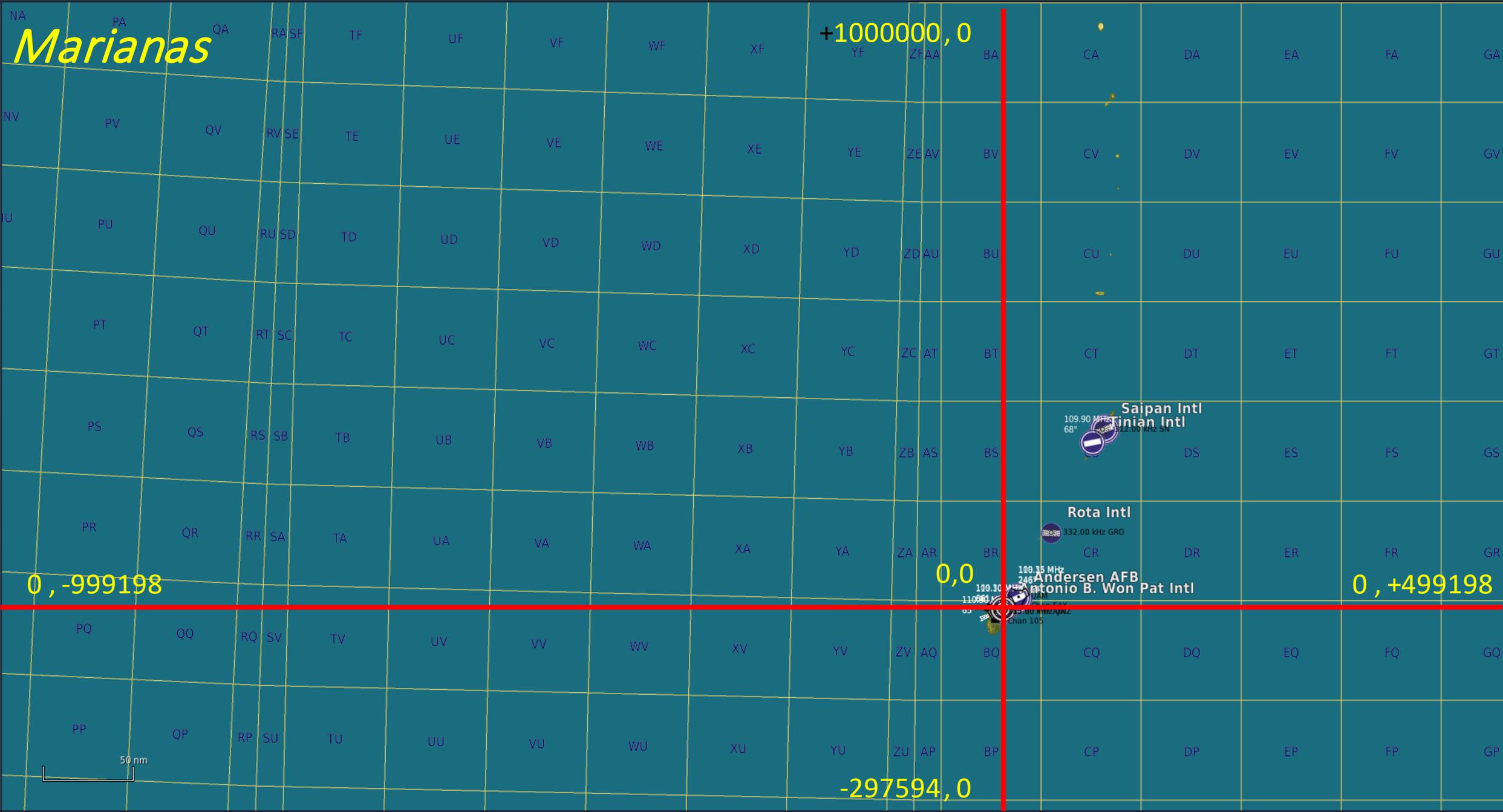
FILE

MIS

OBJ

MAP

Draw



Marianas

+1000000,0

0, -999198

0,0

0, +499198

-297594,0

Saipan Intl  
Tinian Intl

Rota Intl

Andersen AFB  
Antonio B. Won Pat Intl

FILE

MIS

OBJ

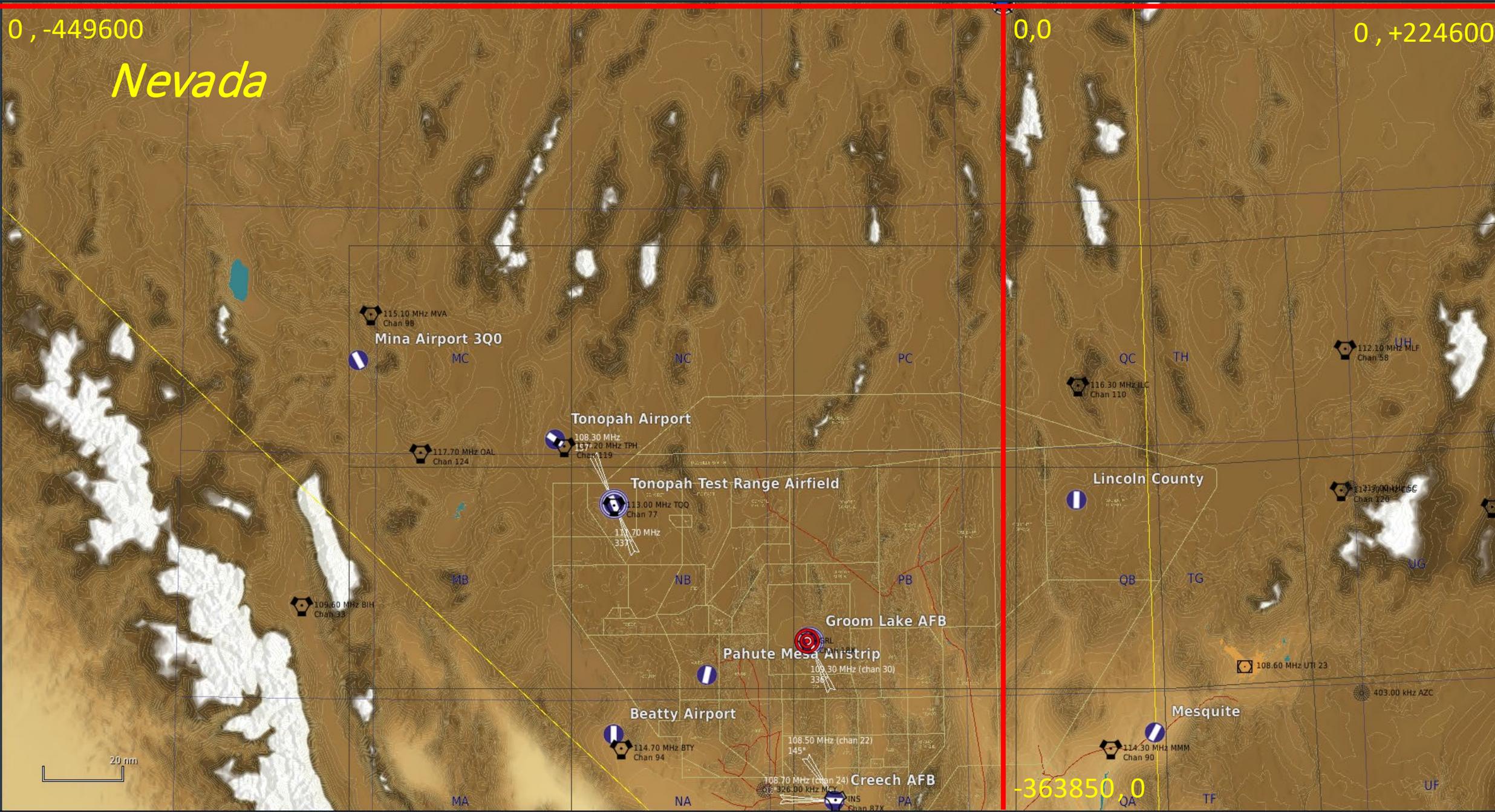
MAP

0 , -449600

*Nevada*

0,0

0 , +224600



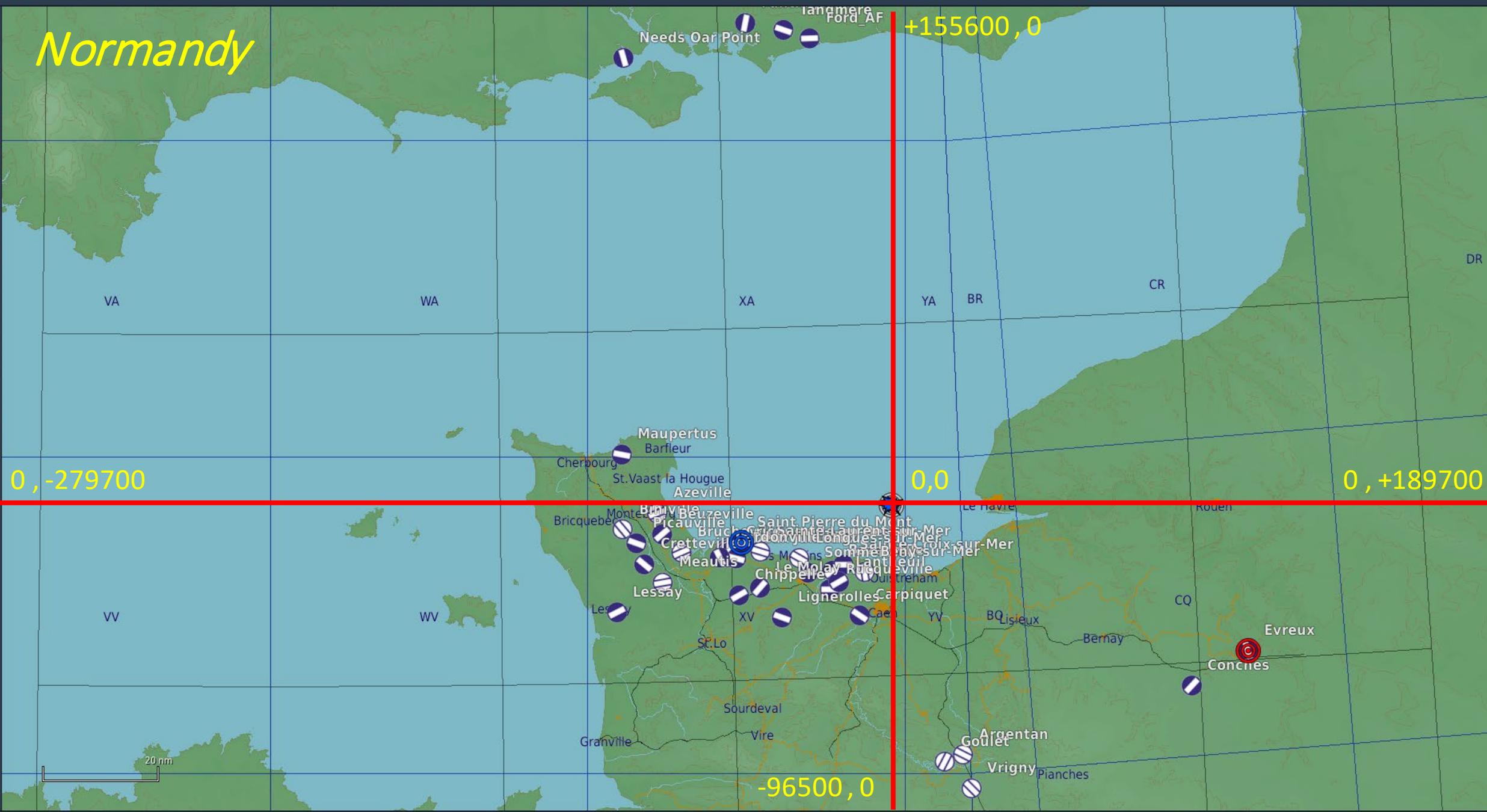
FILE

MIS

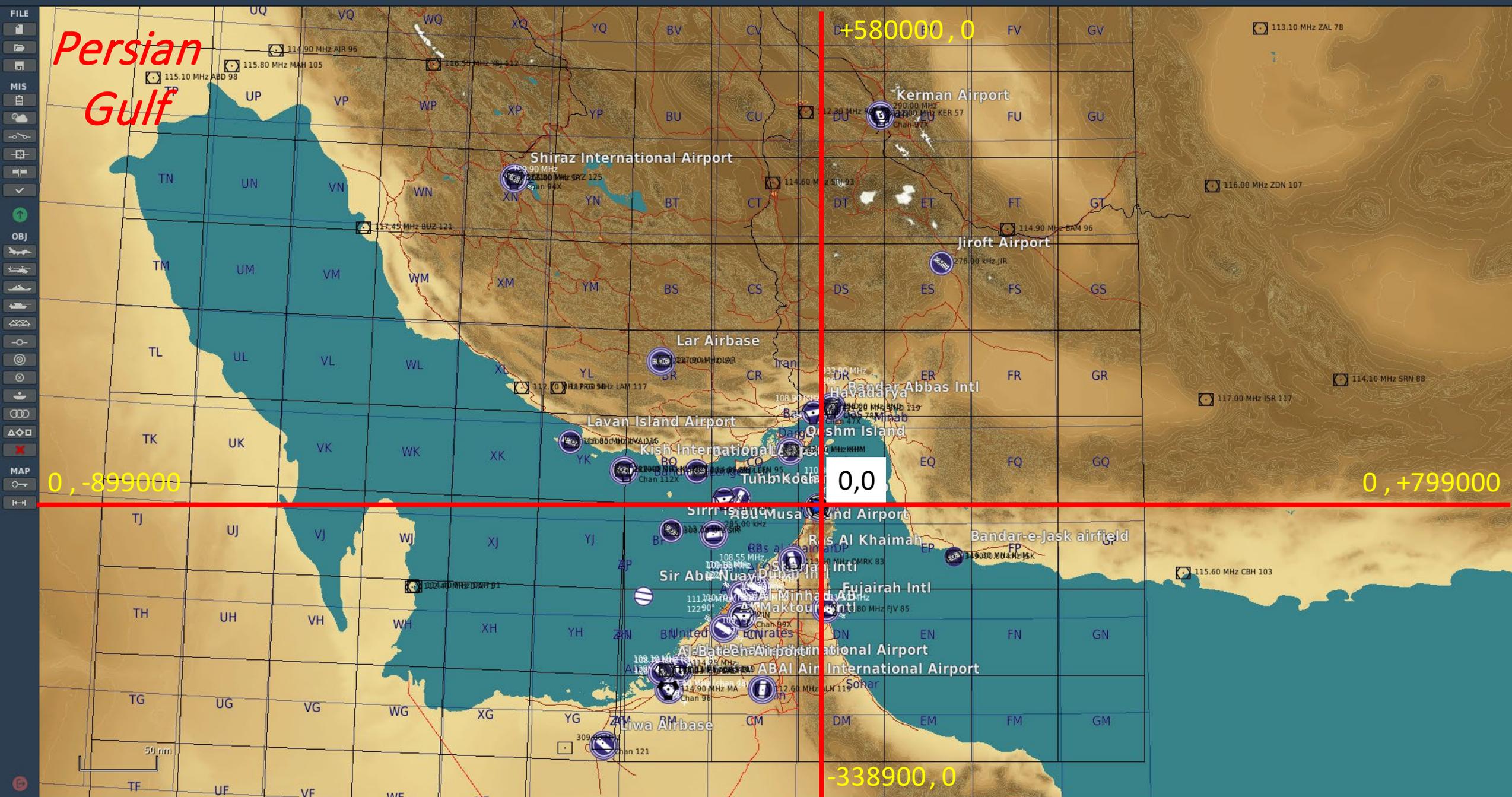
OBJ

MAP

# Normandy



Persian Gulf



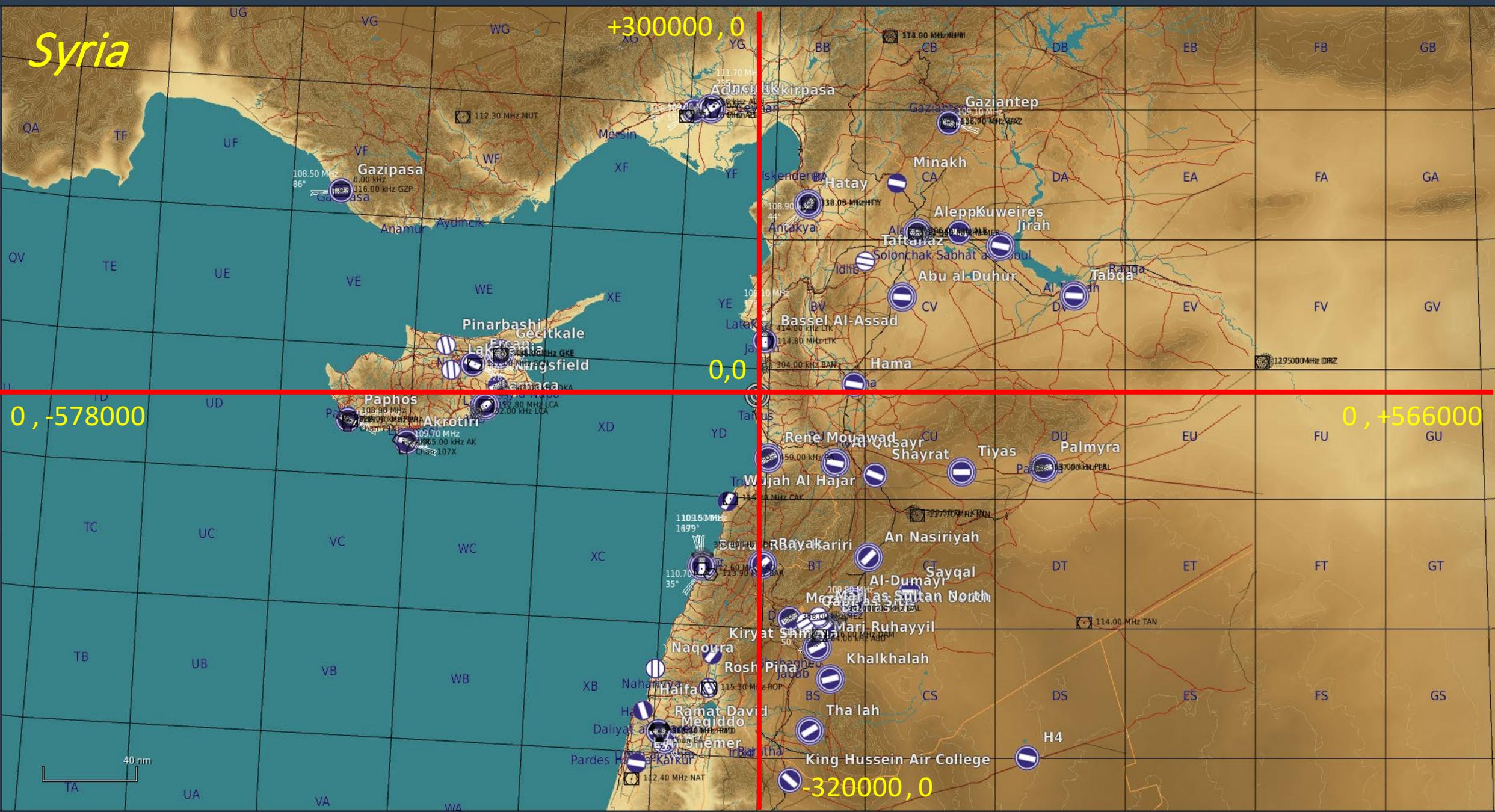
FILE

MIS

OBJ

MAP

Draw



Special Thanks to:

Shifty Mover

<https://youtu.be/EnRi7eY1yt4>

## Editing Weather LUA FILE

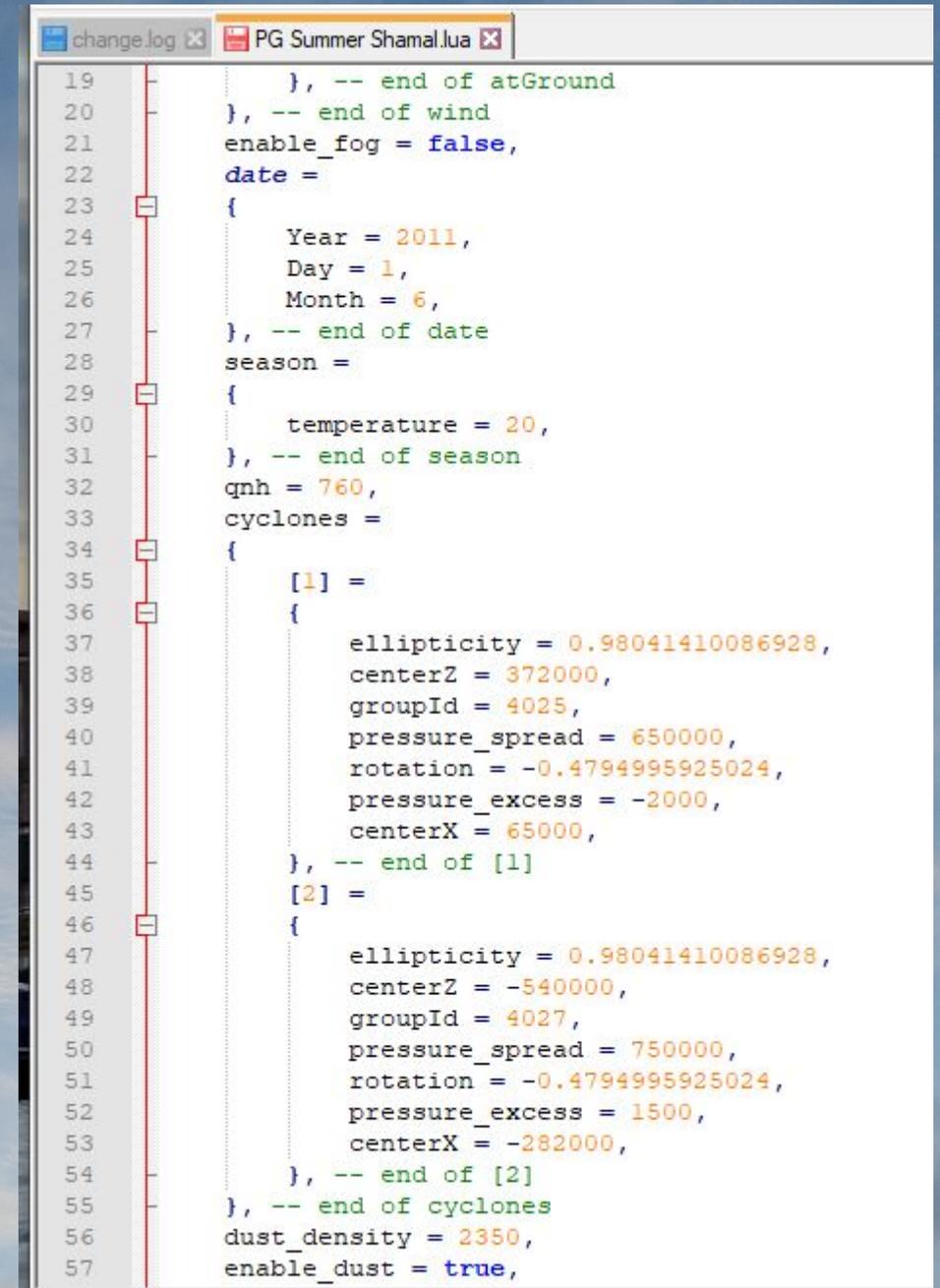
Once files are created and saved edit them in Notepad++, or any other LUA editing tool of your choice.

Once the files opens you should see a series of indented lines as indicated, the **orange** numbers are the only ones you can change

```
temperature = xx (in Celsius)
}, -- end of season
qnh = xxx
```

The system parameters begin after the line Cyclones as shown below

```
cyclones =
{
  [1] =
  {
    ellipticity = 0.58203634771562,
    centerZ = 288873.80151609,
    groupId = 2153,
    pressure_spread = 886989.78807156,
    rotation = -0.64882076496654,
    pressure_excess = -1381,
    centerX = -120146.27202545,
  }, -- end of [1]
}, -- end of cyclones
```



```
change.log x PG Summer Shamal.lua x
19      }, -- end of atGround
20    }, -- end of wind
21    enable_fog = false,
22    date =
23    {
24      Year = 2011,
25      Day = 1,
26      Month = 6,
27    }, -- end of date
28    season =
29    {
30      temperature = 20,
31    }, -- end of season
32    qnh = 760,
33    cyclones =
34    {
35      [1] =
36      {
37        ellipticity = 0.98041410086928,
38        centerZ = 372000,
39        groupId = 4025,
40        pressure_spread = 650000,
41        rotation = -0.4794995925024,
42        pressure_excess = -2000,
43        centerX = 65000,
44      }, -- end of [1]
45      [2] =
46      {
47        ellipticity = 0.98041410086928,
48        centerZ = -540000,
49        groupId = 4027,
50        pressure_spread = 750000,
51        rotation = -0.4794995925024,
52        pressure_excess = 1500,
53        centerX = -282000,
54      }, -- end of [2]
55    }, -- end of cyclones
56    dust_density = 2350,
57    enable_dust = true,
```

## The following deal with Dust, Fog, Visibility, Date and Time

```
dust_density = 2350,
enable_dust = true,
clouds =
{
    thickness = 200,
    density = 0,
    base = 300,
    iprecptns = 0,
}, -- end of clouds
atmosphere_type = 1,
groundTurbulence = 0,
type_weather = 0,
name = "PG Summer Shamal",
fog =
{
    density = 0,
    visibility = 0,
    thickness = 0,
}, -- end of fog
start_time = 28800,
visibility =
{
    distance = 80000,
}, -- end of visibility
} -- end of vdata
```

```
datetime =
{
    date =
    {
        Year = 2011,
        Day = 1,
        Month = 6,
    }, -- end of date
    start_time = 28800,
} -- end of datetime
```

```
55 | }, -- end of cyclones
56 | dust_density = 2350,
57 | enable_dust = true,
58 | clouds =
59 | {
60 |     thickness = 200,
61 |     density = 0,
62 |     base = 300,
63 |     iprecptns = 0,
64 | }, -- end of clouds
65 | atmosphere_type = 1,
66 | groundTurbulence = 0,
67 | type_weather = 0,
68 | name = "PG Summer Shamal",
69 | fog =
70 | {
71 |     density = 0,
72 |     visibility = 0,
73 |     thickness = 0,
74 | }, -- end of fog
75 | start_time = 28800,
76 | visibility =
77 | {
78 |     distance = 80000,
79 | }, -- end of visibility
80 | } -- end of vdata
81 | datetime =
82 | {
83 |     date =
84 |     {
85 |         Year = 2011,
86 |         Day = 1,
87 |         Month = 6,
88 |     }, -- end of date
89 |     start_time = 28800,
90 | } -- end of datetime
91 |
```

Save the file and go back to DCS

Select Static Weather, then Dynamic

Reload the newly created weather file with the folder icon.

At this point you can go into the mission and see if it suits your needs or likes. You may need to repeat these steps a few time to get the desired effect.

