

# **Guide for Capturing and Submitting Graphical Information in GIMS**

**for Advance Publication Information  
for NGSO Satellite Network**

**ITU BR  
Space Support**

Last updated by Xiuqi Wang on 05 Nov 2020

# Why ?



- New requirement from revised **Resolution 55** from **WRC-19** to submit all graphical information in electronic format (GIMS mdb)

*all graphical data associated with the submissions addressed in resolves 1, 2 and 3 should be submitted in graphics data format compatible with the Bureau's data capture software (graphical interference management system (**GIMS**))*

# How ?



1. Install **latest** BR software **GIMS** on your computer
  - Please install it from the latest BR IFIC DVD or from the website below:  
<https://www.itu.int/en/ITU-R/software/Pages/gims.aspx>
  - **Administrator privilege** for the PC is required
2. Open GIMS and follow instructions described here

# When ?



- BR requires all diagrams to be contained in GIMS mdb file, otherwise the notices will be returned as incomplete
- Send to the Bureau the GIMS format mdb file along with your submission through the **e-Submission** system

more information about this system is available in the following website:

<https://www.itu.int/en/ITU-R/space/e-submission/Pages/default.aspx>



# To capture diagrams as images in Gims

- For API submission, it is possible to submit them as images since there is no technical examinations performed by the Bureau for API
- However, these images must be imported into a **Gims database** and marked with the **correct header elements**
- Please follow the instructions indicated in the following slides

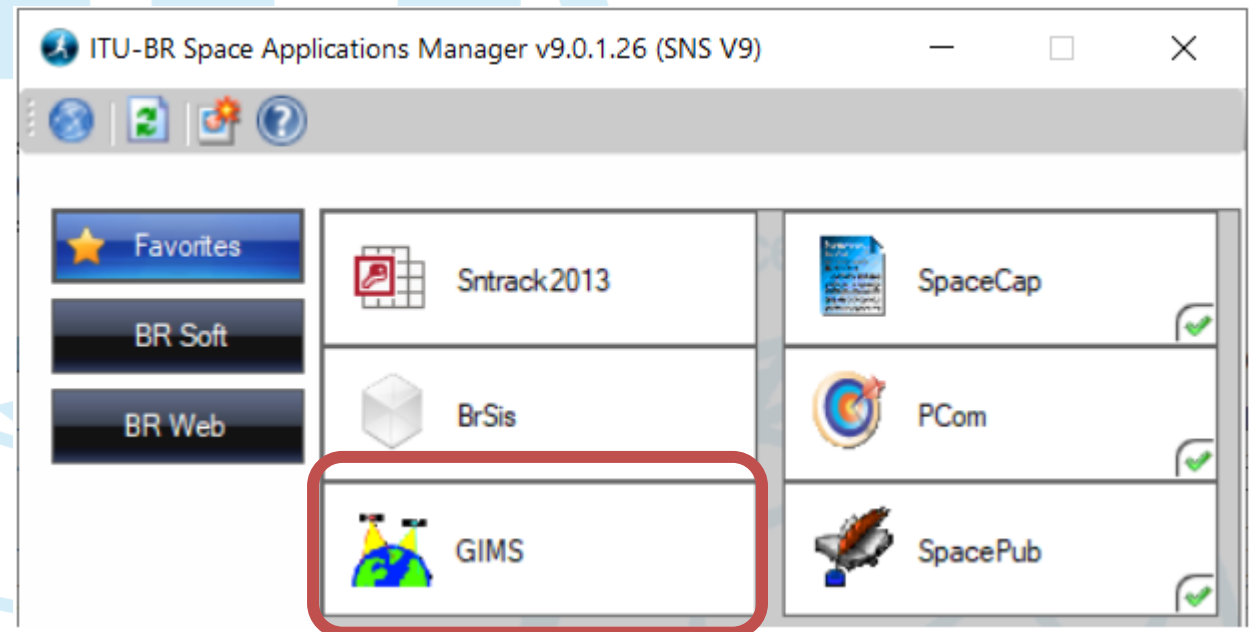


GIMS

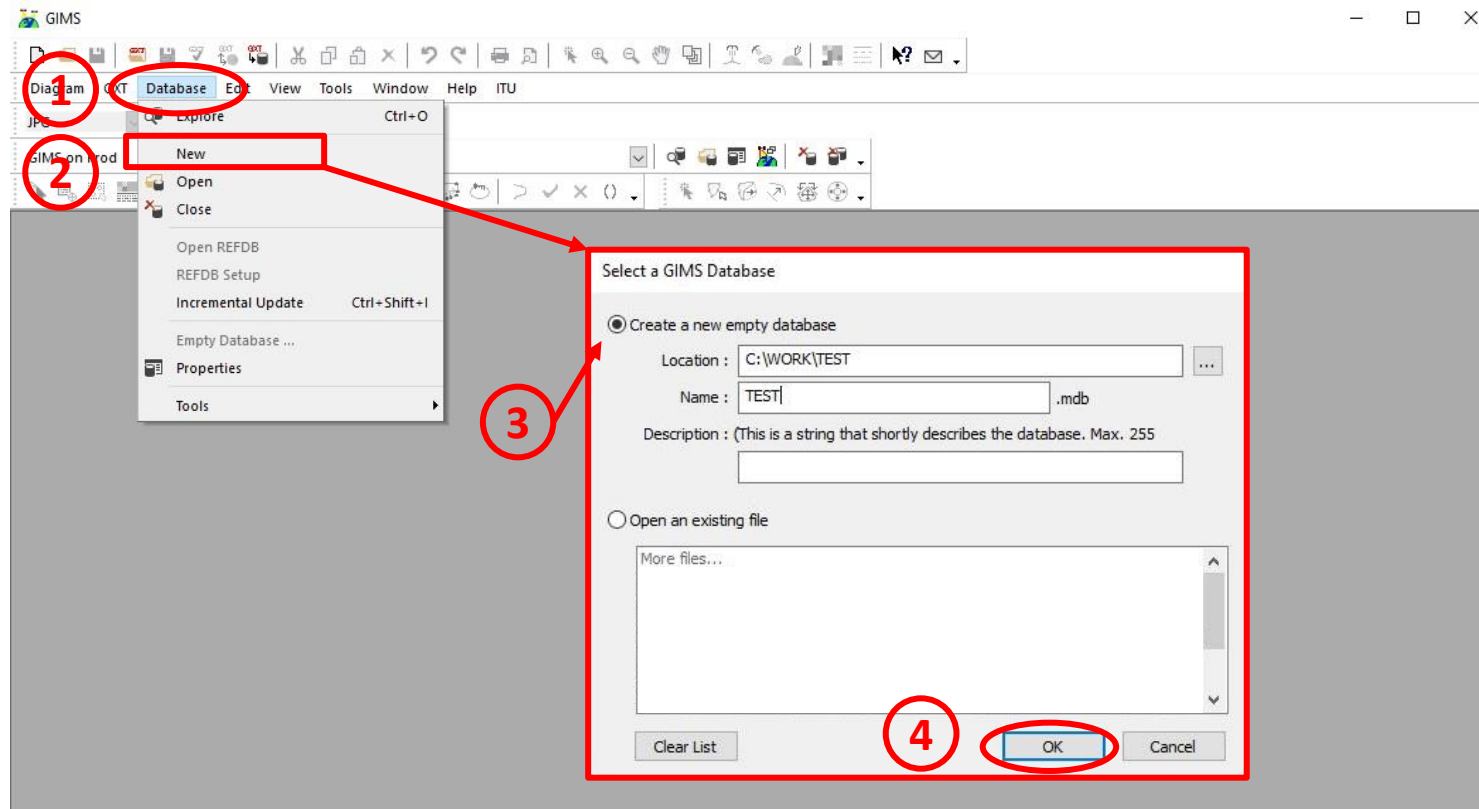


# To start

- Launch **GIMs** software via **BRSAM**
- Create a new GIMs database (mdb file) to store all diagrams for one satellite network
- Capture all the patterns for the space station antennas
- Capture all the diagrams for the earth station antennas
- Pay more attention to the directions
- Browse the database to check that all diagrams have been captured with all the correct keys



# Step 1: Create a new GIMS database that will be used to store all diagrams for the satellite network



One Gims database should contain only one satellite network please

## Step 2: To capture an antenna pattern diagram for a space station antenna

- To be captured for all transmitting and receiving beams that do not contain an antenna pattern ID in the SNS mdb

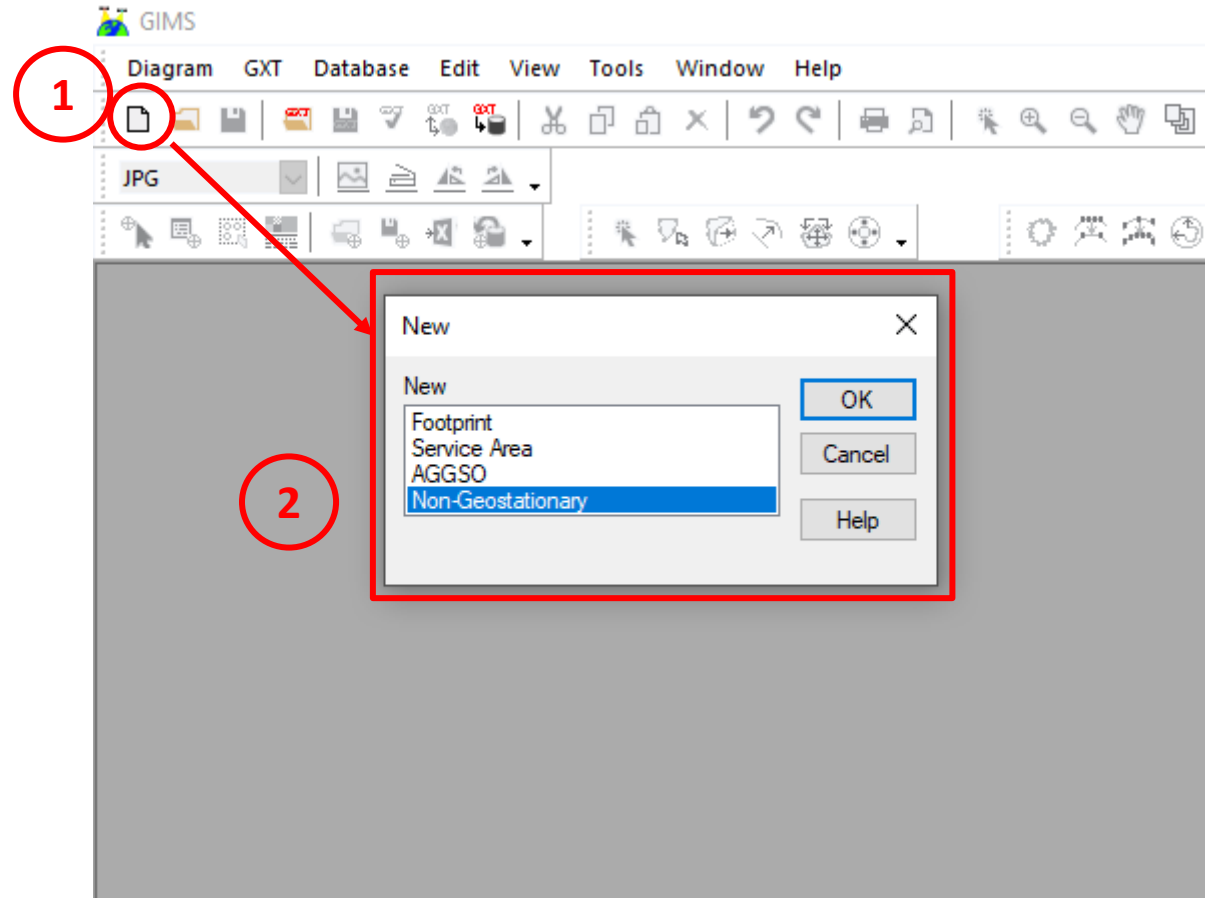


GIMS

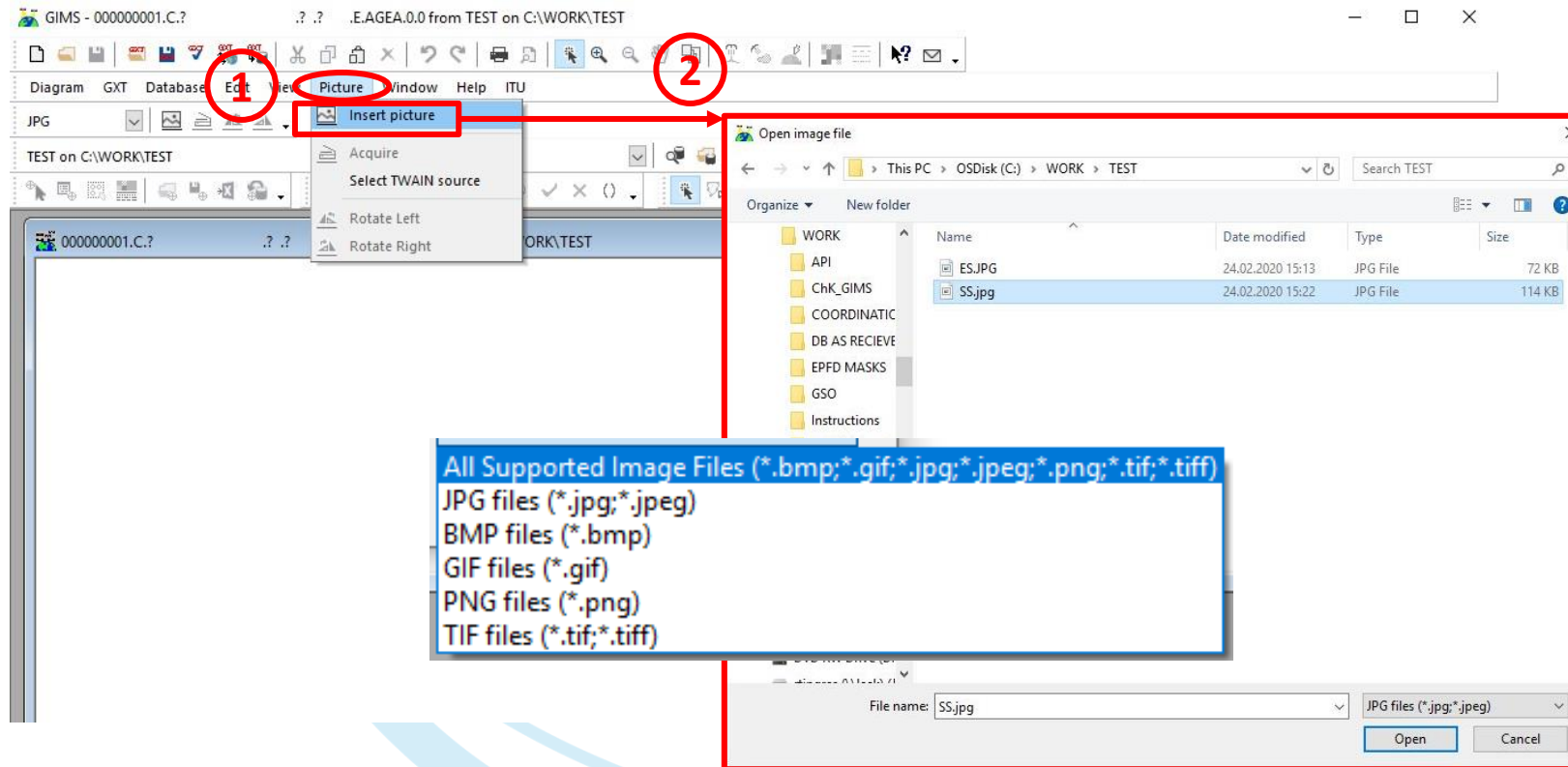




## Step 2.1: Create a new NGSO diagram



## Step 2.2: Insert picture for a new diagram



The picture must first be shaped and crop properly in supported image files. Remember to remove those titles, subtitles and X/Y legends, because you will capture them via Gims

# Step 2.3: Click on save, select a diagram type

in this case, diagram type should be “Space Station Radiation Pattern (B3c1)”

- For the Title, enter or select from the drop-down list:

*Space Station Receiving Antenna Radiation Pattern*  
or  
*Space Station Transmitting Antenna Radiation Pattern*

- Subtitle is not necessary, but may include things like *H-plane* or *V-plane*

- It is useful to enter also x-axis and y-axis legend when needed



A screenshot of a software application window titled '\*000000001.C.?' with a menu bar containing '? ?' and '.E.AGEA.0.0 f...'. The main area shows a graph with a blue curve on a grid. A context menu is open over the graph, listing options: View GXT, Cut, Copy, Paste, Save, Save As, Rotate Left, Rotate Right, Titles and Legends (highlighted), Show Key, and Show History. In the background, another window titled 'GIMS - \*000000001.C.?' is visible, showing a red circular radiation pattern graph. A red box highlights a 'Non-GSO Diagram Title &amp; Legends' dialog box. The dialog box has a 'Diagram Type:' dropdown menu set to 'Space Station Radiation Pattern (B3c1)'. Below it are four text input fields labeled 'Title:', 'Subtitle:', 'X Axis Legend:', and 'Y Axis Legend:'. At the bottom of the dialog are 'OK' and 'Cancel' buttons. A red circle and arrow point from the 'Save' option in the background window's menu bar to the dialog box.

Another way for **step 2.3**: By right click on the pattern inserted, you can select “Titles and Legends” from the drop-down list to get the same dialog for title, subtitle etc.:

The screenshot displays the GIMS software interface. The main window shows a radiation pattern plot titled "SPACE STATION RECEIVING ANTEN...". The plot is a polar coordinate system with the horizontal axis labeled "Theta (Degrees) vs. Gain (dBi)". The plot shows two radiation patterns: a red one and a green one. A context menu is open over the plot, with "Titles and Legends" selected. To the right, the "Non-GSO Diagram Title & Legends" dialog box is open, showing the following settings:

- Diagram Type: Space Station Radiation Pattern (B3c1)
- Title: SPACE STATION RECEIVING ANTENNA RADIATION PATTERN
- Subtitle: (empty)
- X Axis Legend: Theta (Degrees) vs. Gain (dBi)
- Y Axis Legend: (empty)

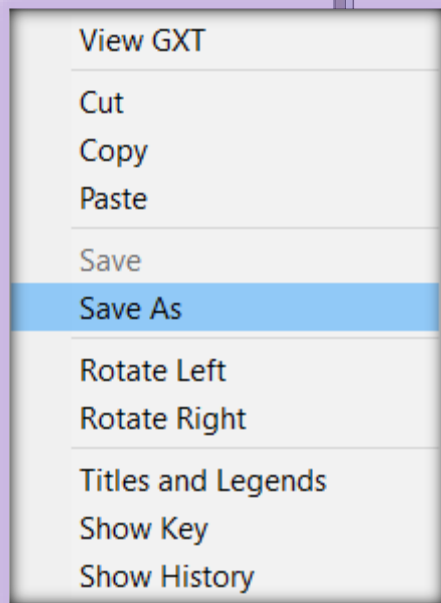
At the bottom of the dialog are "OK" and "Cancel" buttons.

# Step 2.4: Save as space station radiation pattern

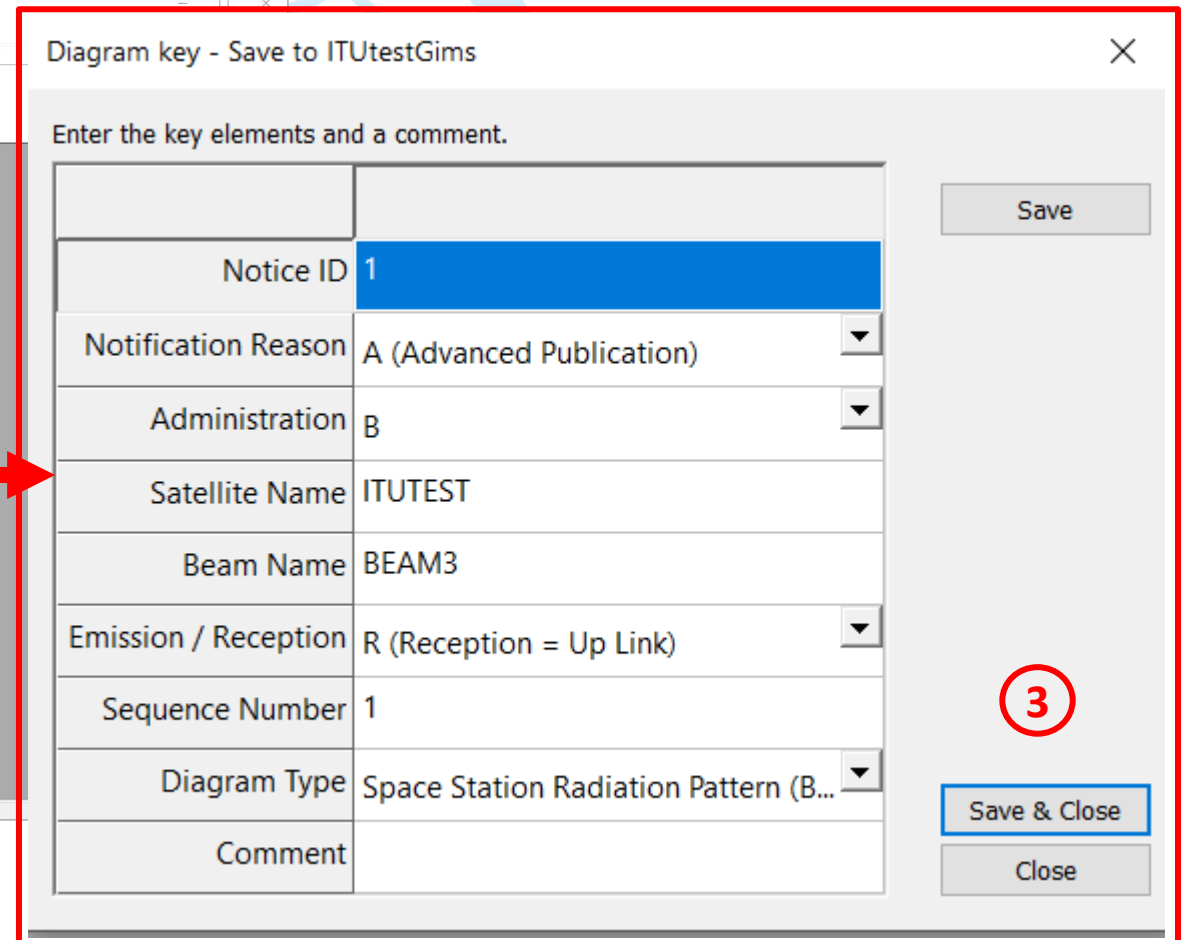
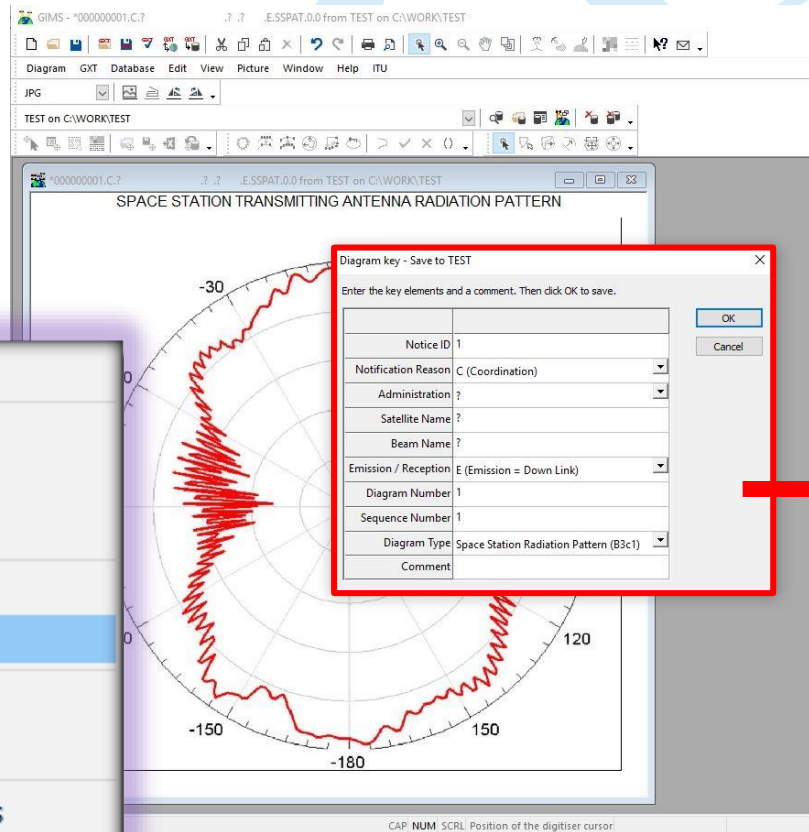
- 2 Fill in all required diagram keys (e.g. Notice ID, Satellite name...)  
Ensure that they correspond to what is captured in the SNS format mdb file

1

Right click on the pattern and select "save as"



- View GXT
- Cut
- Copy
- Paste
- Save
- Save As**
- Rotate Left
- Rotate Right
- Titles and Legends
- Show Key
- Show History



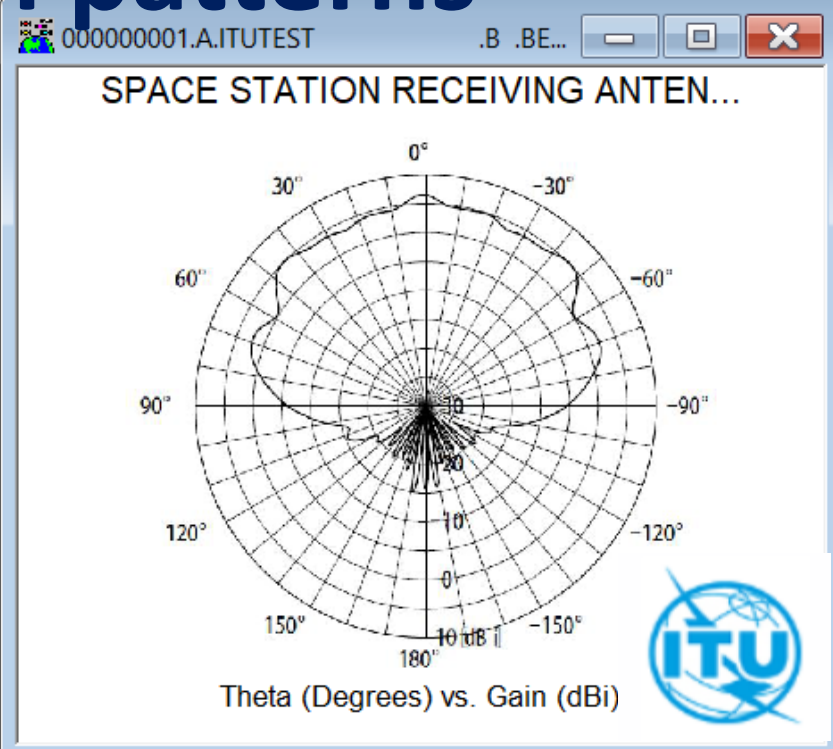
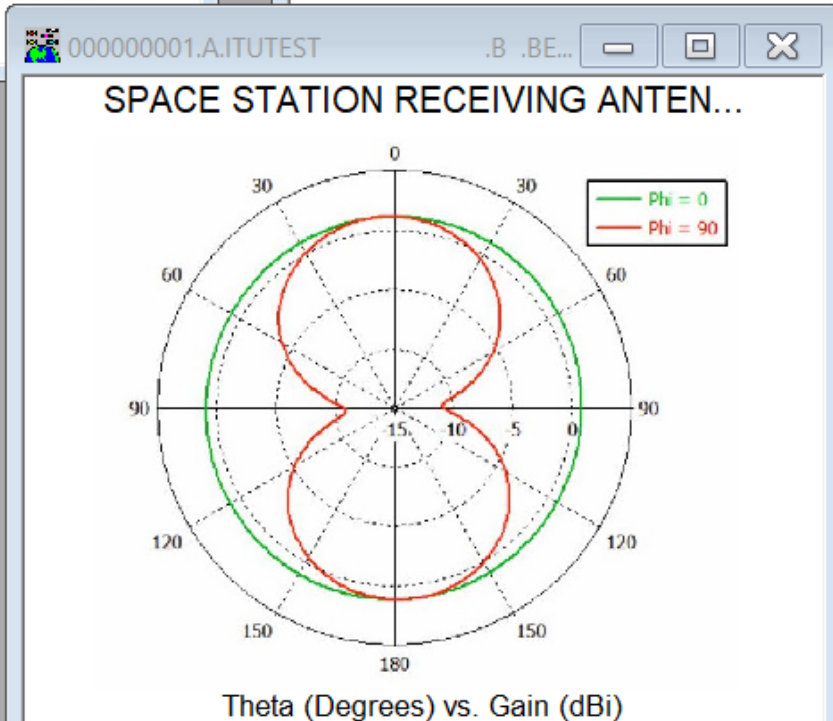
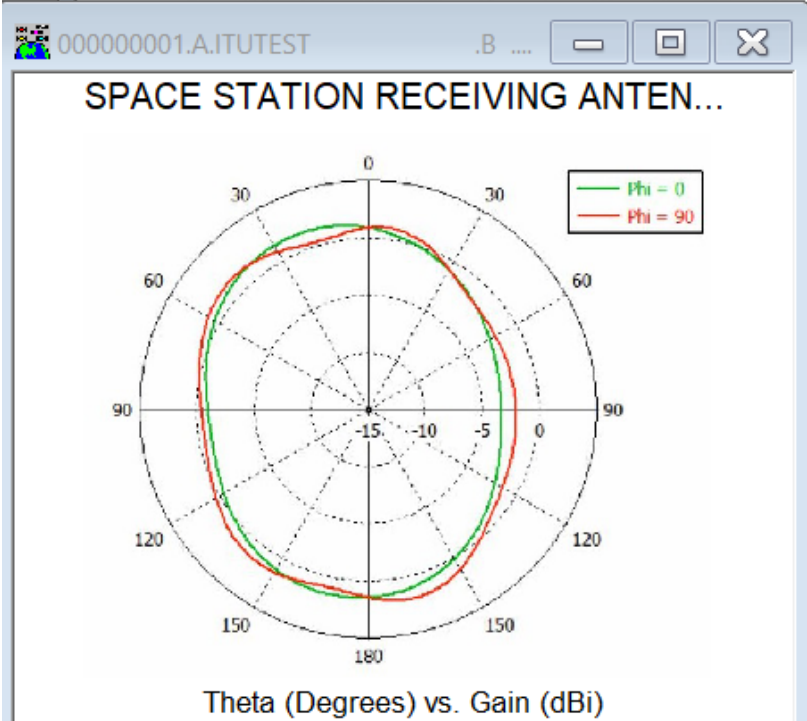
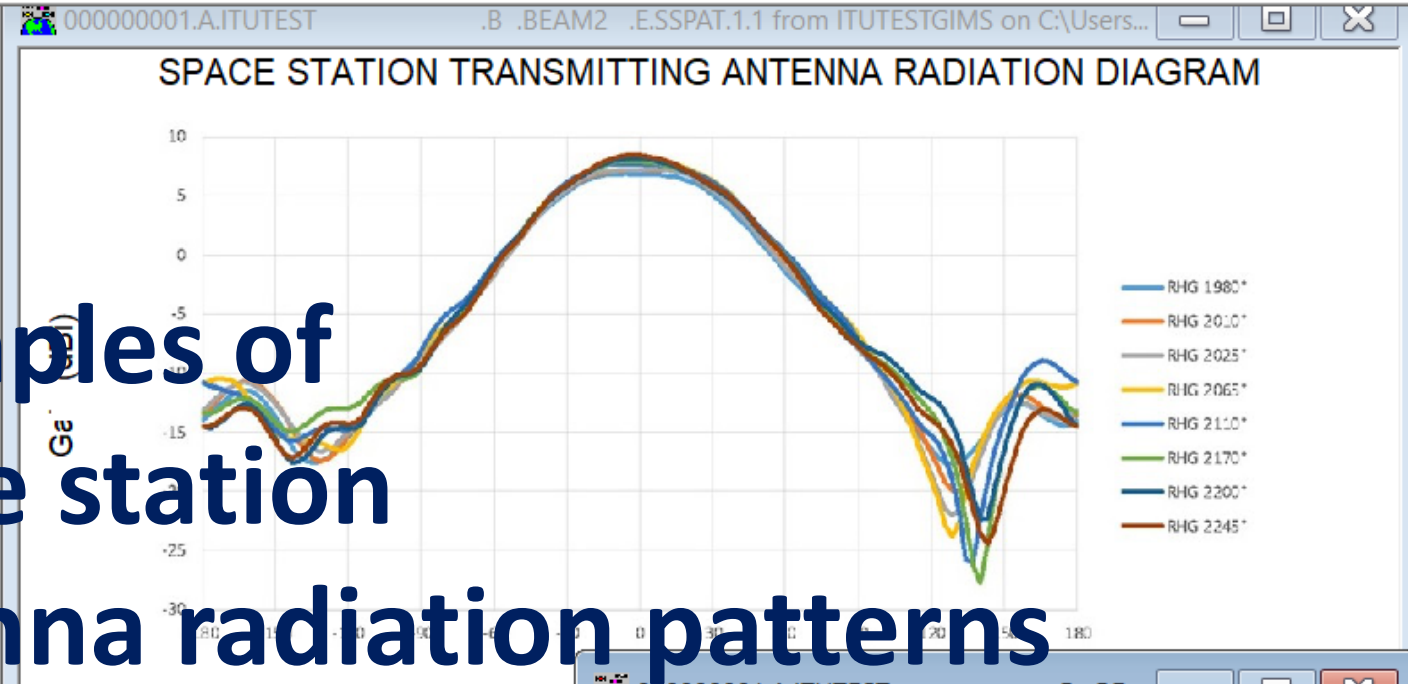
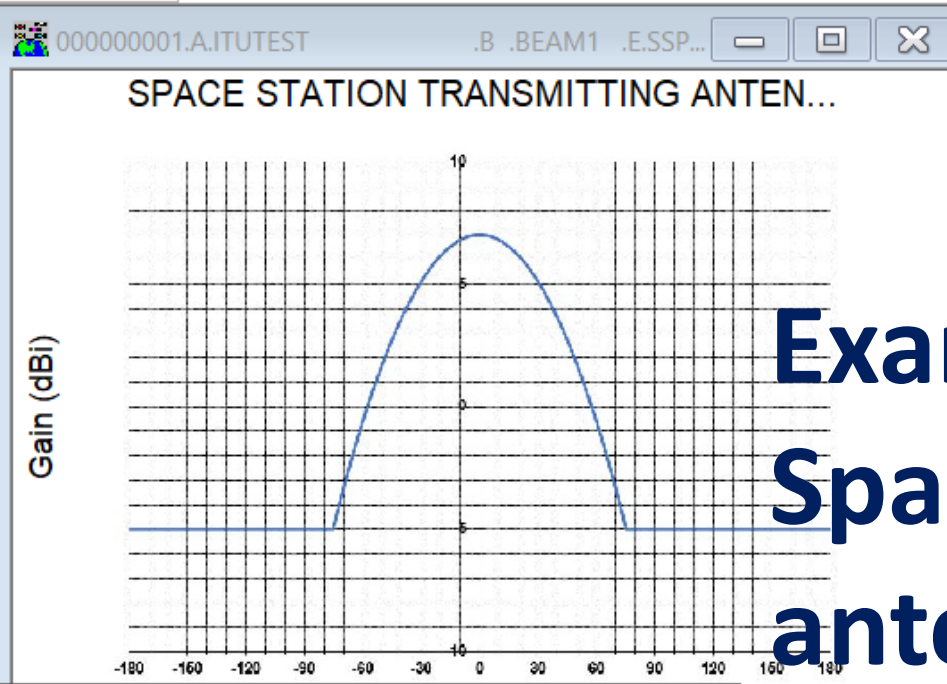
The screenshot shows the "Diagram key - Save to ITUtestGims" dialog box. It contains a table with the following fields:

Enter the key elements and a comment.	
Notice ID	1
Notification Reason	A (Advanced Publication)
Administration	B
Satellite Name	ITUTEST
Beam Name	BEAM3
Emission / Reception	R (Reception = Up Link)
Sequence Number	1
Diagram Type	Space Station Radiation Pattern (B...
Comment	

Buttons: Save, Save & Close, Close

3

# Examples of Space station antenna radiation patterns



# Step 3: To capture an antenna pattern diagram for an associated earth station

- To be captured for all associated earth stations where the antenna pattern IDs are not captured in the SNS format mdb
- Same steps as in Step 2 for “antenna pattern diagram for space station”, except that the diagram type should be “Earth station radiation pattern”

Non-GSO Diagram Title & Legends

Diagram Type:  
Earth Station Radiation Pattern (C10d5a)

Title :  
EARTH STATION TRANSMITTING ANTENNA RADIATION PATTERN

Subtitle :

X Axis Legend :

Y Axis Legend :

OK Cancel

Diagram key - Save to ITUtestGims

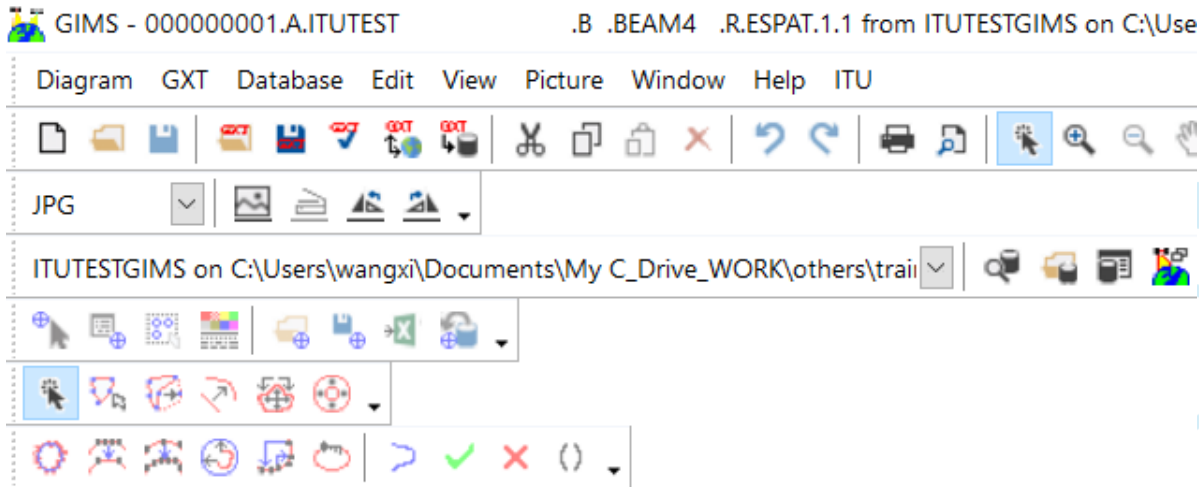
Enter the key elements and a comment.

Notice ID	1
Notification Reason	A (Advanced Publication)
Administration	B
Satellite Name	ITUTEST
Beam Name	BEAM3
Transmission / Reception	R (Reception = Up Link)
Diagram Number	1
Sequence Number	1
Diagram Type	Earth Station Radiation Pattern (C1...
Comment	

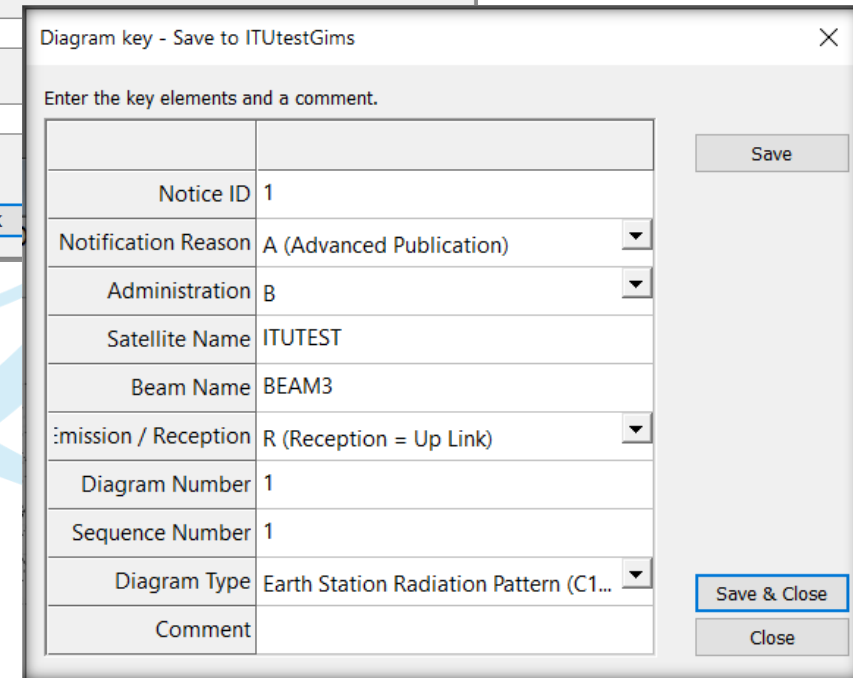
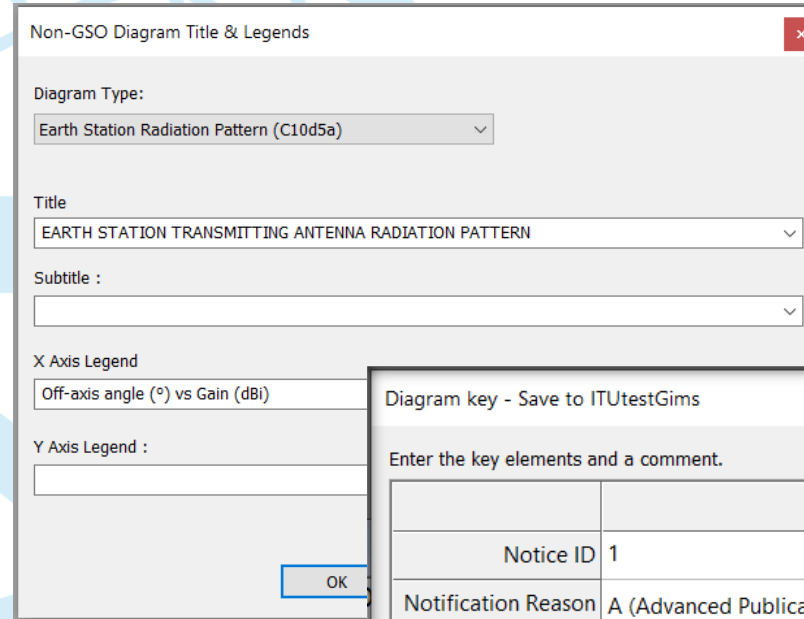
Save

Save & Close

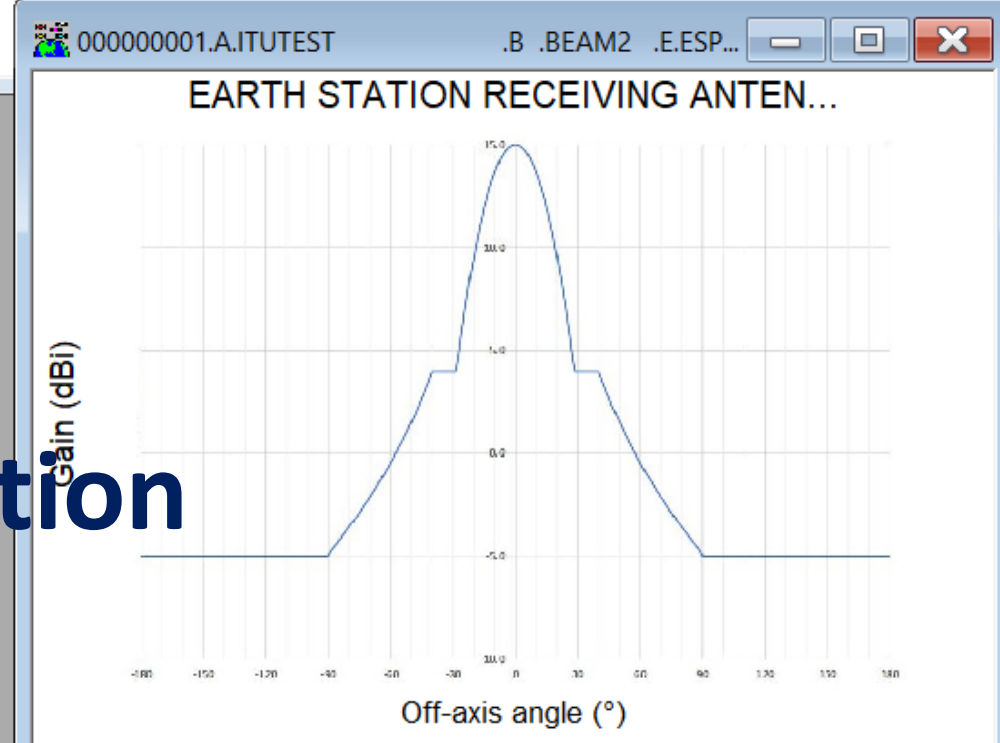
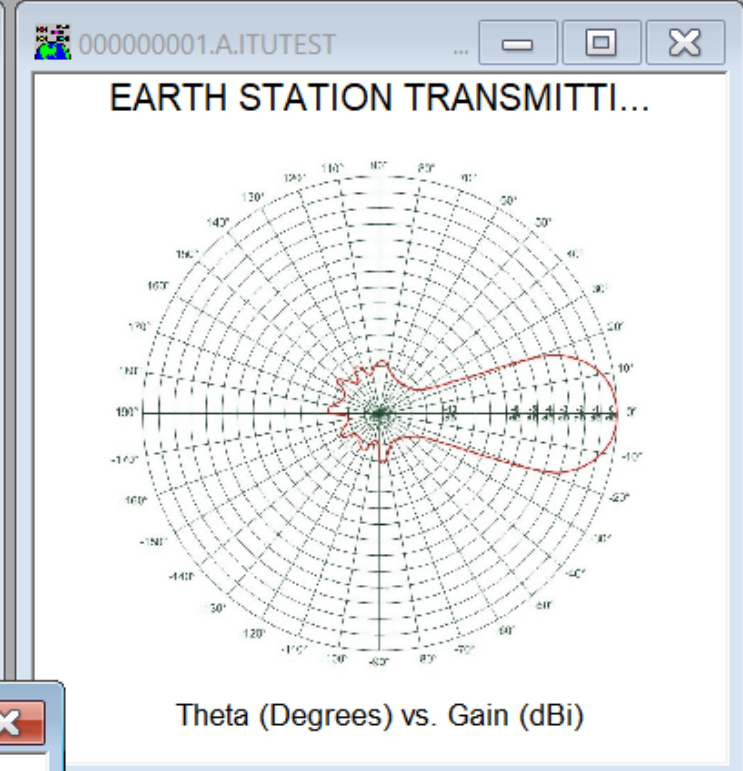
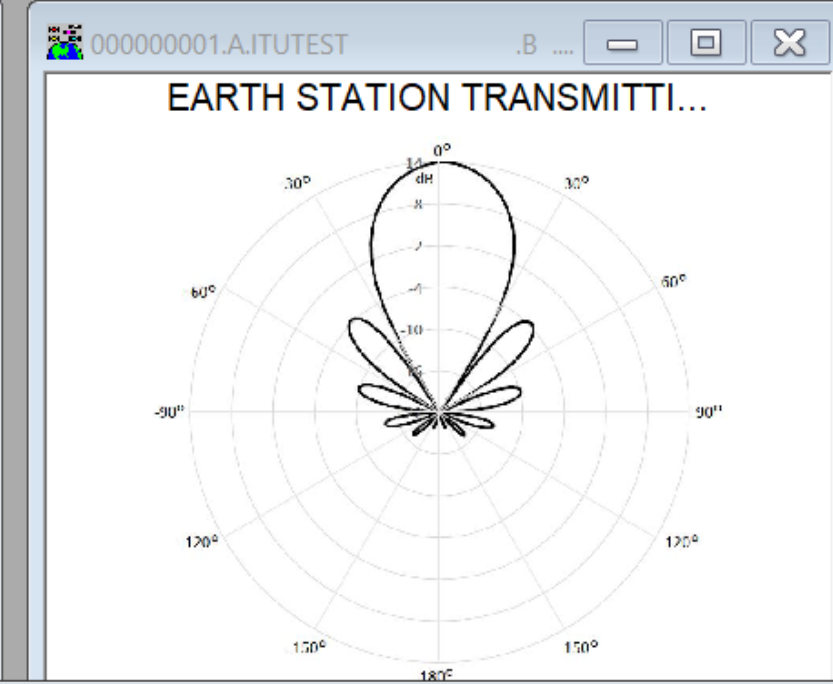
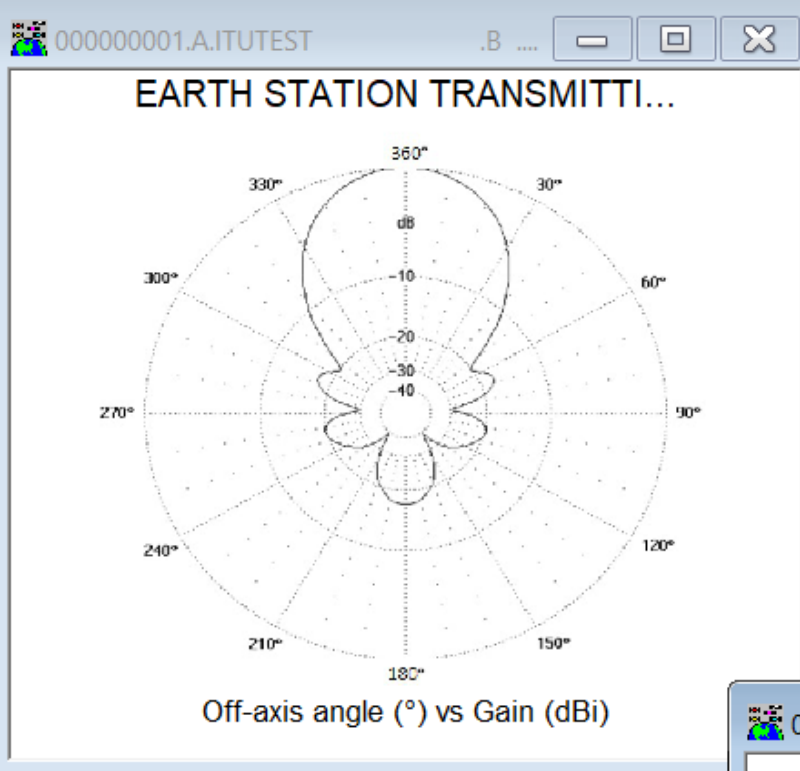
Close



- By right click on the pattern inserted, you can select “Titles and Legends” and “save as” from the drop-down list to get the same dialogs:







Examples of Earth station antenna radiation patterns



# Step 4: Check all diagrams contained in the GIMS database

GIMS Database Explorer

Database  
Location: GIMS on PROD

Browse for ...  
 Geostationary Satellites  Non-geostationary Satellites

Notice ID:

Filter by  
Administration

Apply last filters at startup Filter Off

Select only :  
 Non-AP4 Diagram Type  
 Antenna Gain vs Elevation Angle (B4b2)  
 Spreading Loss vs Elevation Angle (B4b3)  
 Earth Station Radiation Pattern (C10d5a)

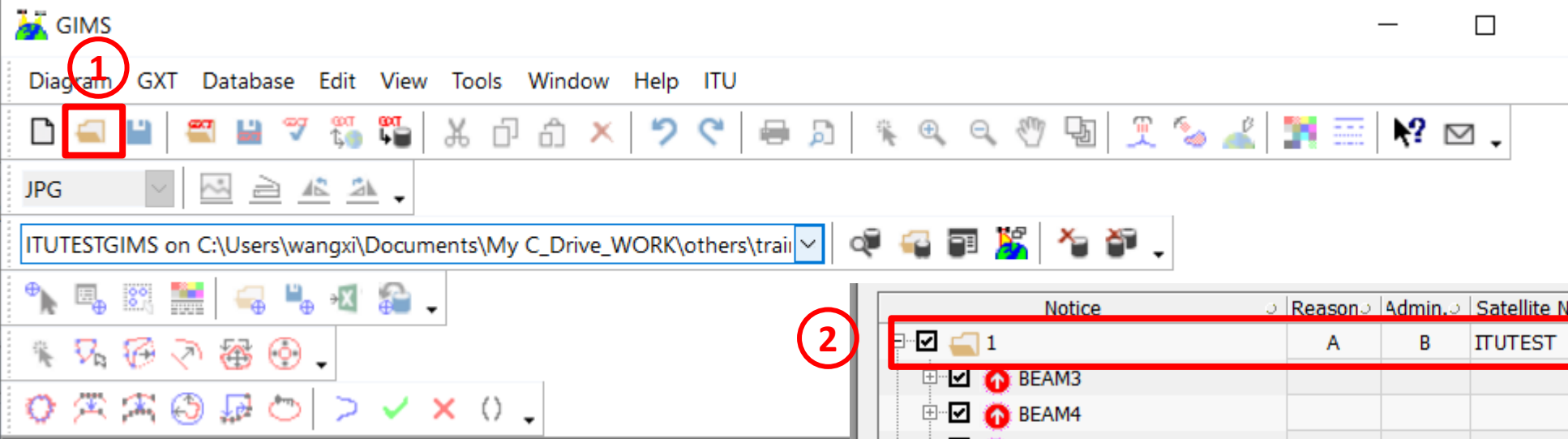
Ignore :  
 C (Co-polar)  E (Emission = Down Link)  
 X (Cross-polar)  R (Reception = Up Link)

Notice		Reason	Admin.	Sate
92540003		A	RUS	GLO
G01 BAMI				
Earth Station Radiation Pattern (C10d5a)				
2 / 1 - EARTH STATION RECEIVING ANTENNA RADIATION PATTERN				
Space Station Radiation Pattern (B3c1)				
1 / 1 - SPACE STATION TRANSMITTING ANTENNA RADIATION PATTERN				
G08				
Earth Station Radiation Pattern (C10d5a)				
4 / 1 - EARTH STATION RECEIVING ANTENNA RADIATION PATTERN				

## Way 1:

Use the GIMs database explorer to check the structure of the database, and ensure that all necessary diagrams have been captured





## Way 2: From the Gims explorer window you can get the structure created for all the diagrams

- **E**: emission/transmitting    **R**: receiving
- **ESPAT**: Earth station antenna radiation pattern
- **SSPAT**: Space station antenna radiation pattern

2

Notice	Reason	Admin.	Satellite Name	Status
<input checked="" type="checkbox"/> 1	A	B	ITUTEST	01
<input checked="" type="checkbox"/> BEAM3				
<input checked="" type="checkbox"/> BEAM4				
<input checked="" type="checkbox"/> BEAM1				
<input checked="" type="checkbox"/> BEAM2				
<input type="checkbox"/> 2	A	B	ITUTEST	01

3

```

000000001;A;ITUTEST ;B ;BEAM1 ;E;ESPAT;1;1
000000001;A;ITUTEST ;B ;BEAM1 ;E;SSPAT;0;1
000000001;A;ITUTEST ;B ;BEAM2 ;E;ESPAT;1;1
000000001;A;ITUTEST ;B ;BEAM2 ;E;SSPAT;0;1
000000001;A;ITUTEST ;B ;BEAM3 ;R;ESPAT;1;1
000000001;A;ITUTEST ;B ;BEAM3 ;R;SSPAT;0;1
000000001;A;ITUTEST ;B ;BEAM3 ;R;SSPAT;0;2
000000001;A;ITUTEST ;B ;BEAM4 ;R;ESPAT;1;1
000000001;A;ITUTEST ;B ;BEAM4 ;R;ESPAT;2;1
000000001;A;ITUTEST ;B ;BEAM4 ;R;ESPAT;2;2
000000001;A;ITUTEST ;B ;BEAM4 ;R;SSPAT;0;1

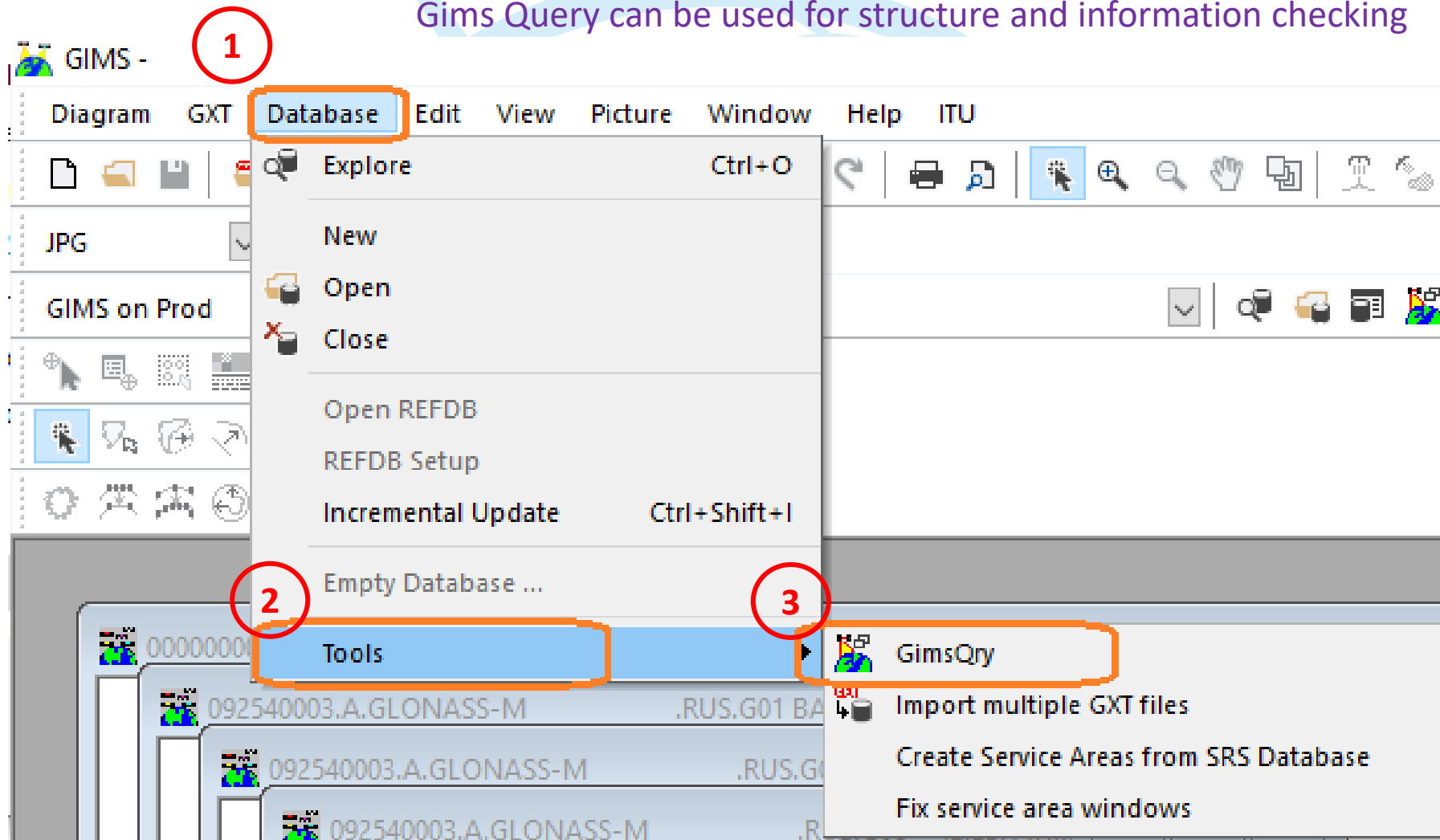
```

**For ESPAT, e.g. 1;1:**  
 diagram number 1  
 sequence number 1

**For SSPAT, e.g. 0;1:**  
 no diagram number  
 only sequence number 1

# Way 3: Run Gims Qry

Gims Query can be used for structure and information checking



4 Select **NGSO Query**, **Run Query**, then you will get the report in detail

# From Gims Query Report

you can also get the structure and information created in the Gims

ITUtestGims - 11 diagrams found

Query this database or ...  ... browse for a file with query results

**General criteria**

Notice ID:

Satellite name:

Administration:

Notification Reason:

**Geostationary**

Satellite From:  To:

**Diagrams Covering...**

... a country

... a point Longitude:  Latitude:

**Diagram Types**

Gain contours  Service area  Gain vs. GSO

	Notice ID	Notification Reason	Satellite Name	Administration	Beam Name	Emission/Reception Flag	Diagram Type	Diagram Number	Sequence Number
1	000000001	A	ITUTEST	B	BEAM1	E	ESPAT	1	1
2	000000001	A	ITUTEST	B	BEAM2	E	ESPAT	1	1
3	000000001	A	ITUTEST	B	BEAM3	R	ESPAT	1	1
4	000000001	A	ITUTEST	B	BEAM4	R	ESPAT	1	1
5	000000001	A	ITUTEST	B	BEAM4	R	ESPAT	2	1
6	000000001	A	ITUTEST	B	BEAM4	R	ESPAT	2	2
7	000000001	A	ITUTEST	B	BEAM1	E	SSPAT	0	1
8	000000001	A	ITUTEST	B	BEAM2	E	SSPAT	0	1
9	000000001	A	ITUTEST	B	BEAM3	R	SSPAT	0	1
10	000000001	A	ITUTEST	B	BEAM3	R	SSPAT	0	2
11	000000001	A	ITUTEST	B	BEAM4	R	SSPAT	0	1



Check that all diagrams are there,  
and with all the correct keys and labels  
compatible with the notice database

The screenshot displays the GIMS software interface. A red box highlights the 'GIMS Database Explorer' window, which is annotated with a red circle '1' pointing to the toolbar and a red circle '2' pointing to the 'Select only' section. The 'Select only' section contains the following checked items:

- Non-AP4 Diagram Type
- Antenna Gain vs Elevation Angle (B-4-2)
- Spreading Loss vs Elevation Angle (B-4-3)
- Earth Station Radiation Pattern (C-10d5a)

Below the 'Select only' section, there are 'Ignore' options:

- C (Co-polar)
- X (Cross-polar)
- E (Emission = Down Link)
- R (Reception = Up Link)

A table below shows the database contents:

Notice	Reason	Admin.	Satellite
1	A	USA	TESTSAT
TESTBEAM			
Earth Station Radiation Pattern (C10d5a)			
1 / 1 - EARTH STATION RECEIVING ANTENNA RADIATION PATTERN			
Space Station Radiation Pattern (B3c1)			
1 / 1 - SPACE STATION TRANSMITTING ANTENNA RADIATION PATTERN			

At the bottom of the window, a text field contains the following entries:

```
000000001;A;TESTSAT ;USA;TESTBEAM;E;ESPAT;1;1  
000000001;A;TESTSAT ;USA;TESTBEAM;E;SSPAT;1;1
```

A red circle '3' is placed over the 'OK' button. To the right, another window displays two radiation pattern diagrams, annotated with a red circle '4'. The left diagram is titled 'EARTH STATION RECEIVING ANTENNA RADIATION PATTERN' and shows a polar plot with a central lobe and a scale from 0 to 30 degrees. The right diagram is titled 'SPACE STATION TRANSMITTING ANTENNA RADIATION PATTERN' and shows a polar plot with a scale from 0 to 180 degrees.

# Step 6: Final check: Cross-Validation verify all information in the GIMS database



Notice Explorer - AP4/V and AP4/VI Advance Publication

Notice id.	Type	Adm./Org.	Orb. Pos.	Station name	Date rcv.	Status
000000002	[M]	N B /		ITUTEST	03.11.2020	01

Control Box

- Show
- Clone
- Export
- Delete
- To SNS
- CFEX
- Validation**
- Esub

Way 1: Run Validation via SpaceCap →

# Cross\_Validation via SpaceCap

Adm./Org.	Orb. Pos.	Station name	Date rcv.	Status
B /		ITUTEST	03.11.2020	01

Count=2

Dialog

**Initiate Validation for:**  
Dbname: C:\Users\wangxi\Documents\My C\_Drive\_WORK\others\training\2020.11.WRS  
Ntc ID: 2 Adm: B Sat Name: ITUTEST Action:M Status:01 D\_RCV: 03.11.2020

**Enter parameters for Validation**  Run as external user

**Validation Options**

- Straps not provided - optional under appendix 4 (w/RC2007)
- Check frequency overlap using assigned frequency bandwidth

**Graphical Data Cross Validation**

Cross Validate

GIMS Database (.mdb) C:\Users\wangxi\Documents\My C\_Drive\_WORK\others\training\2020.11.WR

**ITU internal Options**

- Skip API check
- Skip FixThings
- Partial Merge option

Press control button to start Validation

**Control Box**

- 
- 
- 
- 
- 
- 
- 
-



# Way 2: Cross\_Validation via BRSIS

ITU-BR Space Applications Manager v9.0.1.26 (SNS V9)

Navigation icons: Home, Refresh, Settings, Help

Left sidebar:

- ★ Favorites
- BR Soft
- BR Web

Main workspace:

- Sntrack2013
- SpaceCap
- BrSis** (1)
- PCom
- GIMS
- SpacePub

Selected task panel:

- CFEX
- FindCap
- PCom
- SpaceQry
- SRS Convert
- Validation** (2)

Right sidebar:

- Publication
- PCom
- Validation

**Run Validation via BRSIS**

# Validation



## Space Information System (SNS v9)

1

**Selected task: Validation**

Validation

- Version: 9.0.0.7 [\(what's new?\)](#)
- Description: Validate electronic submissions
- Contact: [sandrine.moret@itu.int](mailto:sandrine.moret@itu.int)
- Validation Rules: [Satellites](#) [Earth Stations](#) [Plans](#)

CFEX

FindCap

PCom

+ New Window

3

Start

Quit

**Selected database: ITUTEST\_API.mdb**

Ingres Production

Ingres Development

Microsoft Access

C:\Users\wangxi\Documents\My C\_Drive\_WORK\others\training\20...

Browse

2

✓ Selected task

✓ Selected database

# Cross\_Validation via BRSIS

.WORK > others > training > 2020.11.WRS ITU > api

Name	Date modified	Type	Size
ITUTEST_API.mdb	03.11.2020 16:38	Microsoft Access ...	2 404 KB
ITUtestGims.mdb	03.11.2020 16:37	Microsoft Access ...	1 516 KB



4 Notice Id.

Sat. name: ITUTEST  
Type of notice: Advance publication Status: 01  
Adm./Org.: B Orb. pos.: NGSO Station type: N

Validation

Run as external user

## Graphical data cross validation

GIMS Database (.mdb)

5

## ITU internal options

API check  Run SRSFix  Partial merge option

Select a GIMS Database

Create a new empty database

Location :  ...

Name :  .mdb

Description : (This is a string that shortly describes the database. Max. 255 characters)

Open an existing file

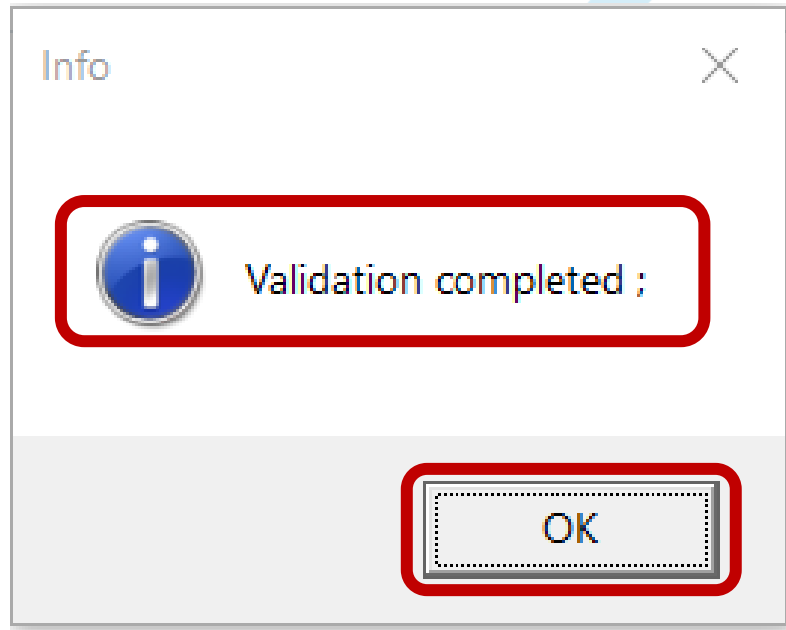
6

- GIMS on Prod
- GIMS on Devl

8

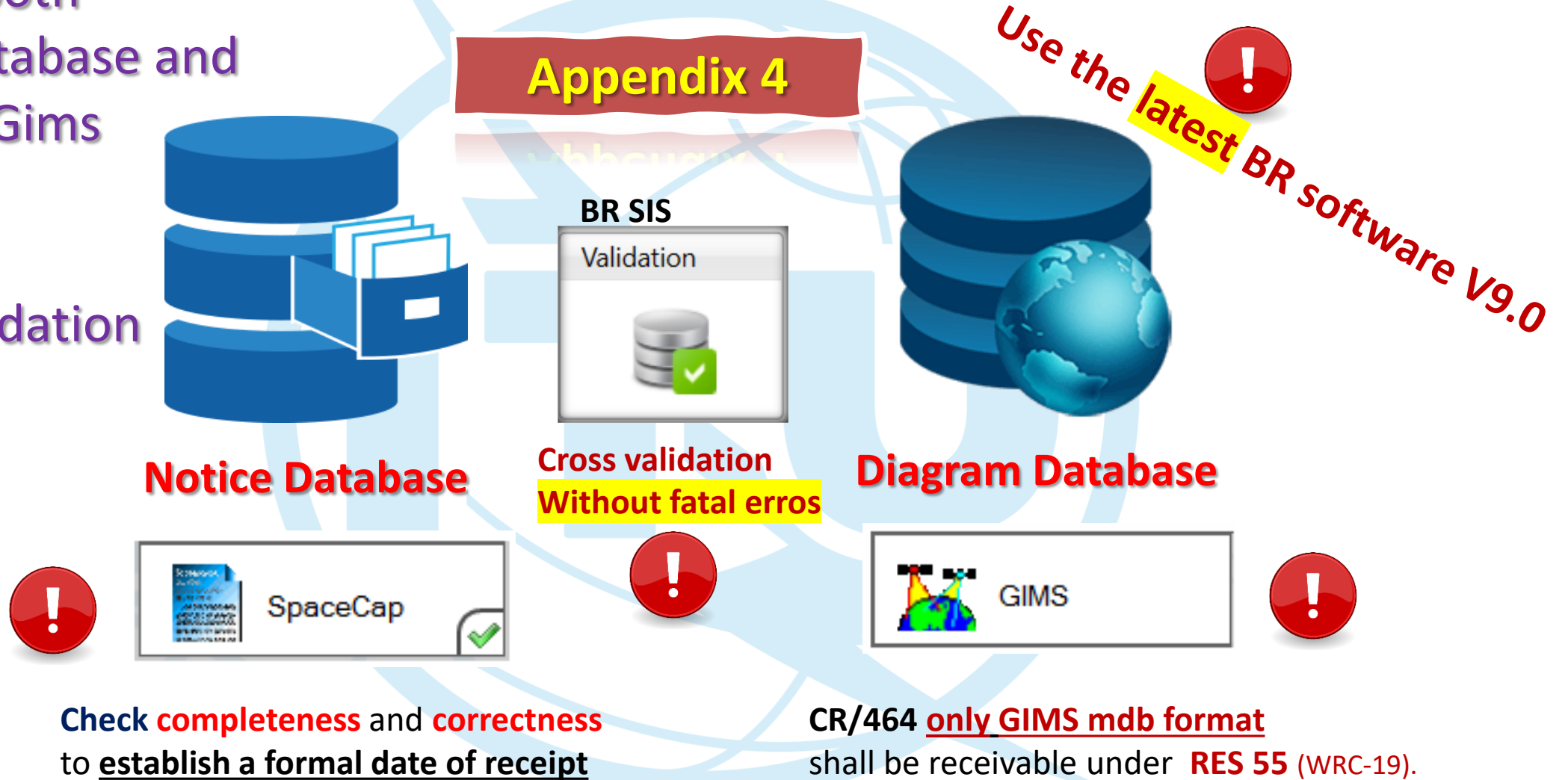
9

# Check Cross Validation Report



- Make sure that **validation completed**
- Make sure there is **no fatal error**
- If there is, fix before submitting
- Seek other's support to fix further
- If really can not fix, ask your administration to explain in the cover letter or notes for submission

To sum up:  
Capture both  
notice database and  
diagram/Gims  
database  
and run  
Cross Validation

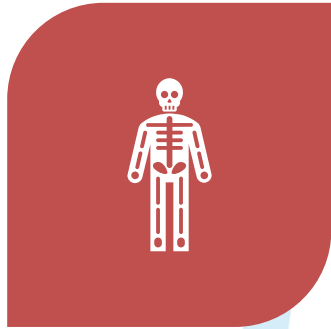


# Reminders before submission

- Submit one notice in one Gims (.mdb) file
- Note that Notice ID, Notification reason, Administration, Satellite name, Beam names and Diagram numbers for each Beam and Earth station should be identical with ones in the electronic notice created with BR software SpaceCap.
- If you wish to capture antenna diagrams for Vertical and Horizontal planes for one beam, use the same Diagram number but with different Sequence numbers when you save them.
- If there is fatal error still, remember to explain it in the notes



# Entry into force (WRC-19)



THE ENTRY INTO FORCE  
OF THE REVISED RESOLUTION 55  
(WRC-19) IS **23.11.2019**.



THE BUREAU ENFORCE THIS  
**STRICTLY NOW**  
THAT THE CROSS VALIDATION  
SOFTWARE IS READY



SEND TO THE BUREAU THE  
GRAPHICAL DATABASE  
(GIMS FORMAT MDB FILE)  
WITH YOUR SUBMISSION  
(SNS FORMAT MDB FILE)  
THROUGH E-SUBMISSION SYSTEM

You could find more information about the e-submission system in the following website

<https://www.itu.int/en/ITU-R/space/e-submission/Pages/default.aspx>.



# Who to help when necessary

## Contact Points

- For help concerning the content of the submission, the regulations, the engineering aspects
  - [BRMAIL@ITU.INT](mailto:BRMAIL@ITU.INT)
- For help concerning the submission to the ITU via the e-submission system
  - [BRSPACEHELP@ITU.INT](mailto:BRSPACEHELP@ITU.INT)
- For help with the use of the BR software
  - [SAS@ITU.INT](mailto:SAS@ITU.INT)







GIMS



**Many thanks  
for your corporation !**

**[www.itu.int](http://www.itu.int)**