



ITUWRS

GENEVA2024

2-6 December 2024
Geneva, Switzerland



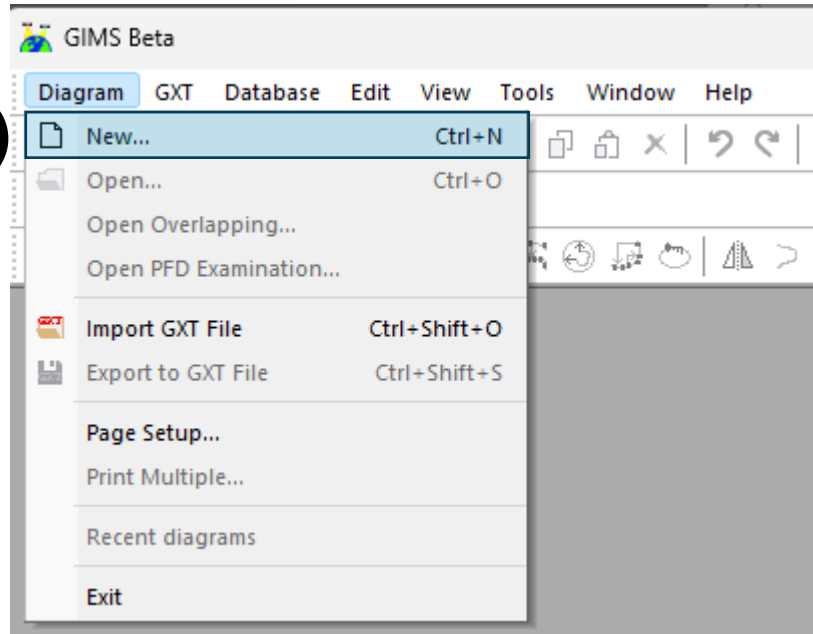
ITU World Radiocommunication Seminar

NGSO Diagrams Capture

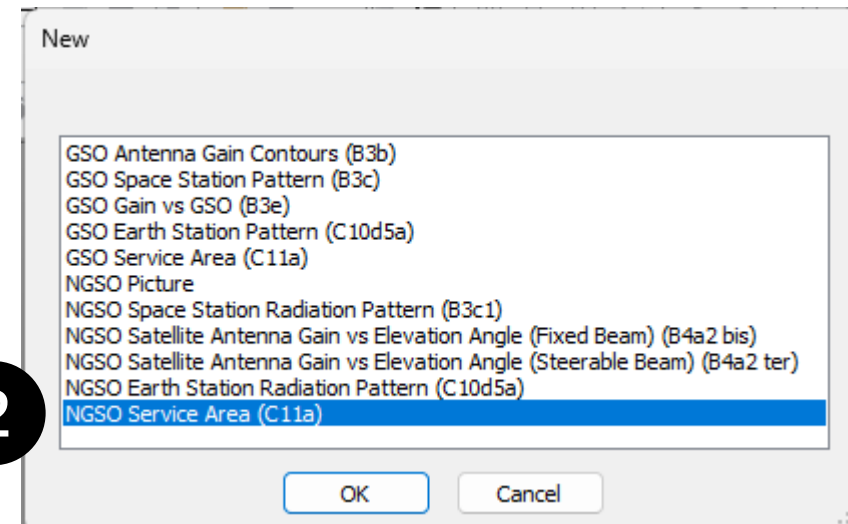
2-6 December 2024, Geneva, Switzerland

SERVICE AREA

1

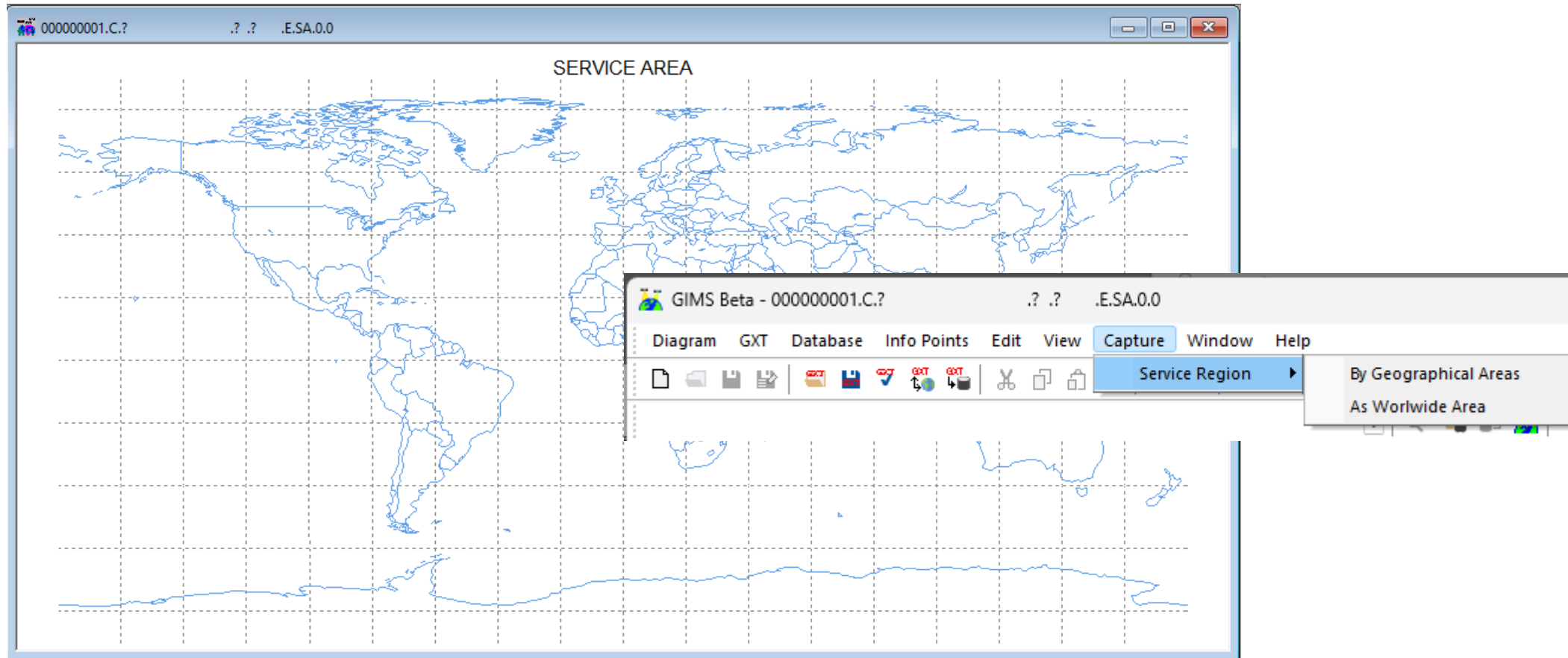


2

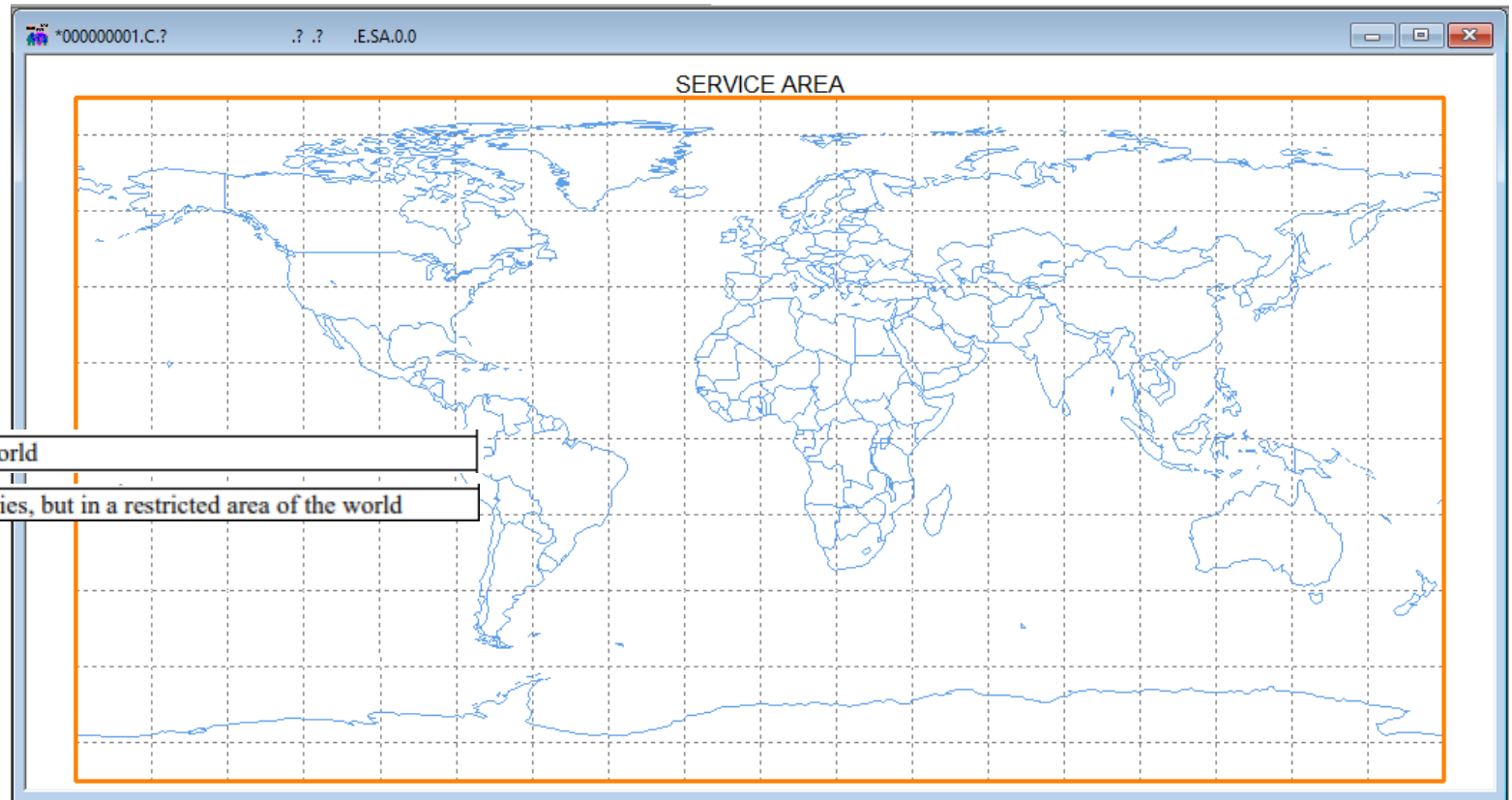
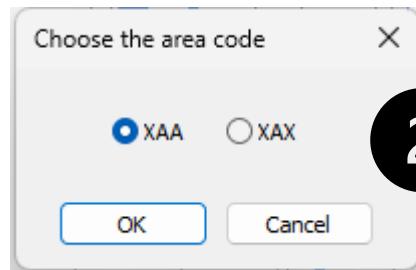
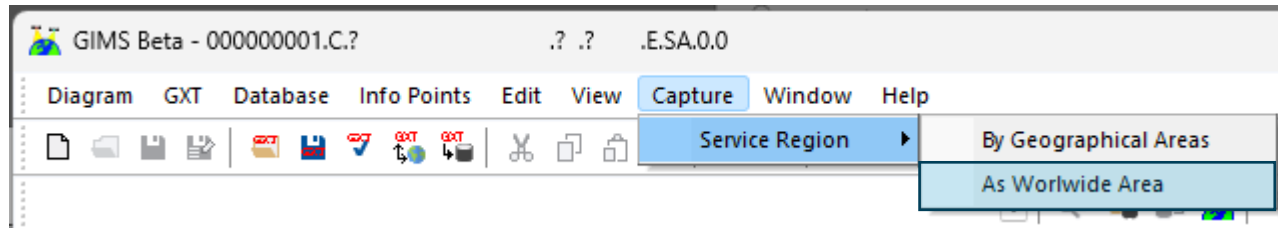


SERVICE AREA

For NGSO, only GEOGRAPHICAL AREAS

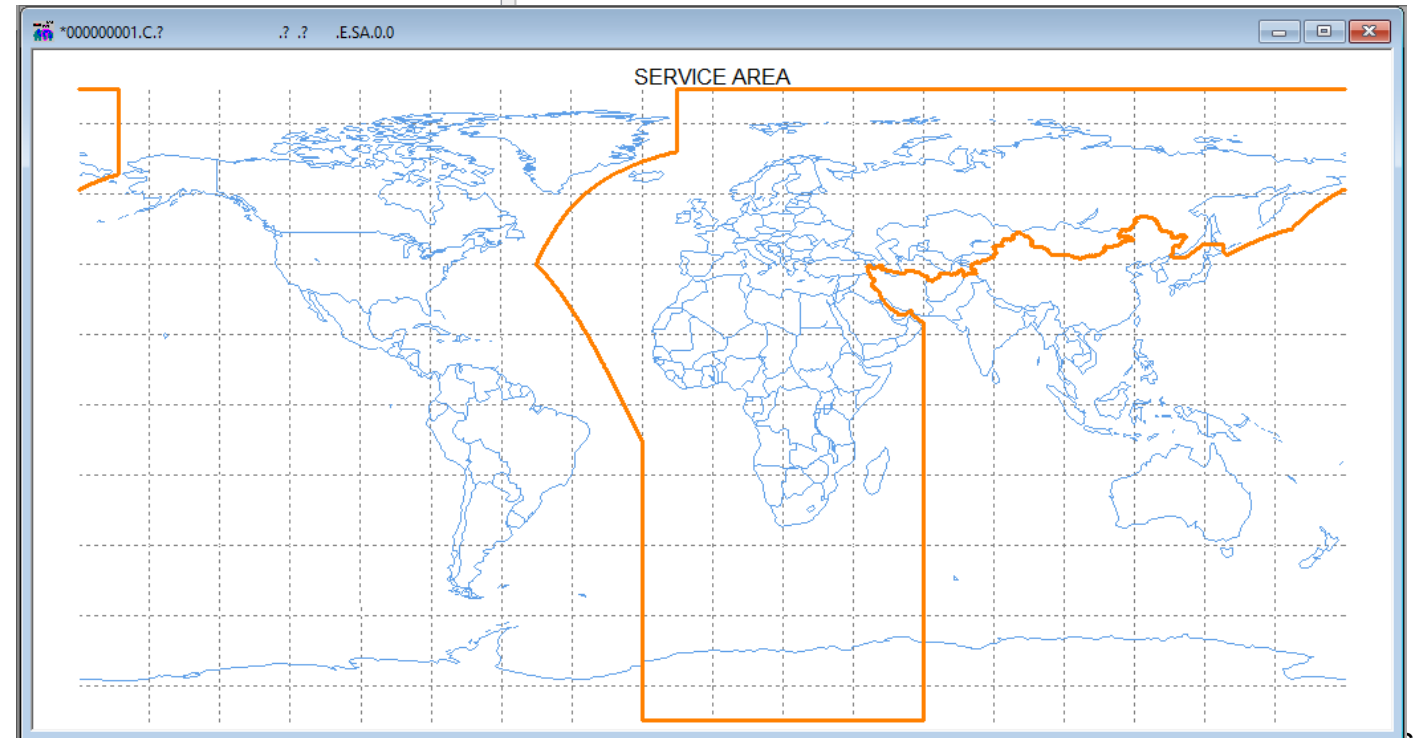
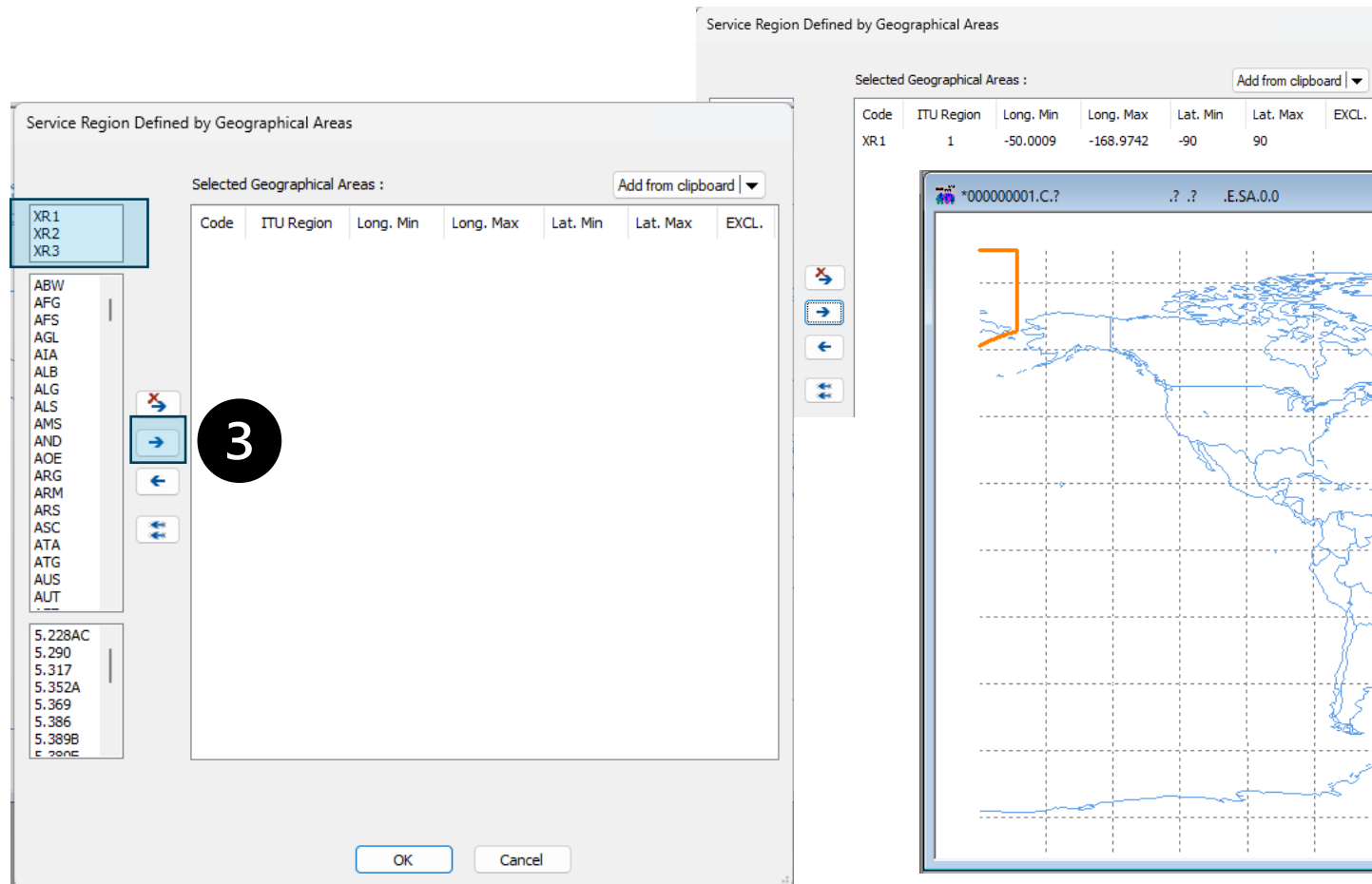
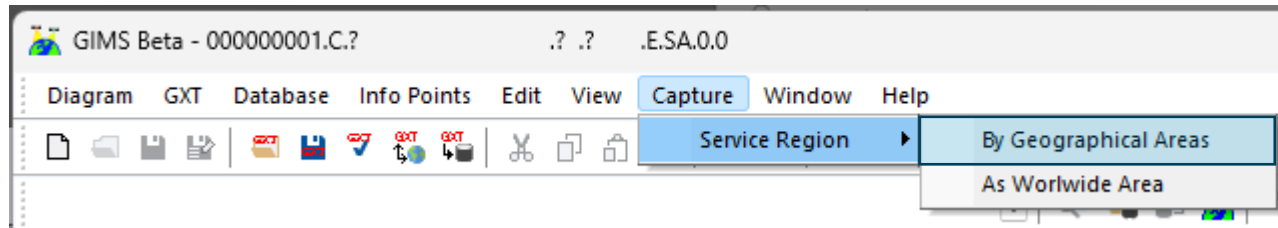


SERVICE AREA – GLOBAL

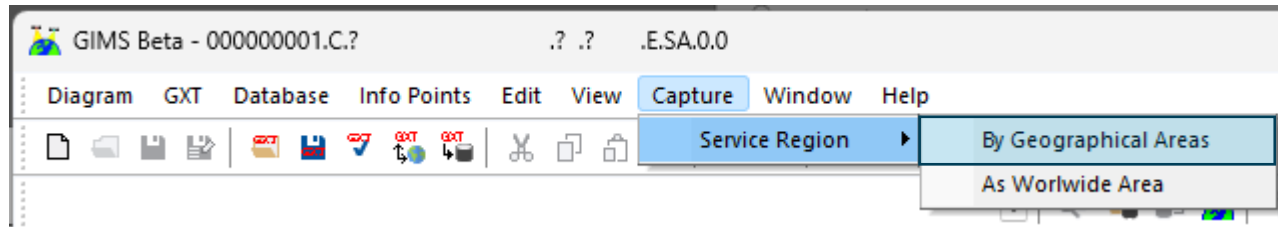


XAA			Shared throughout the world
XAX			Shared by several countries, but in a restricted area of the world

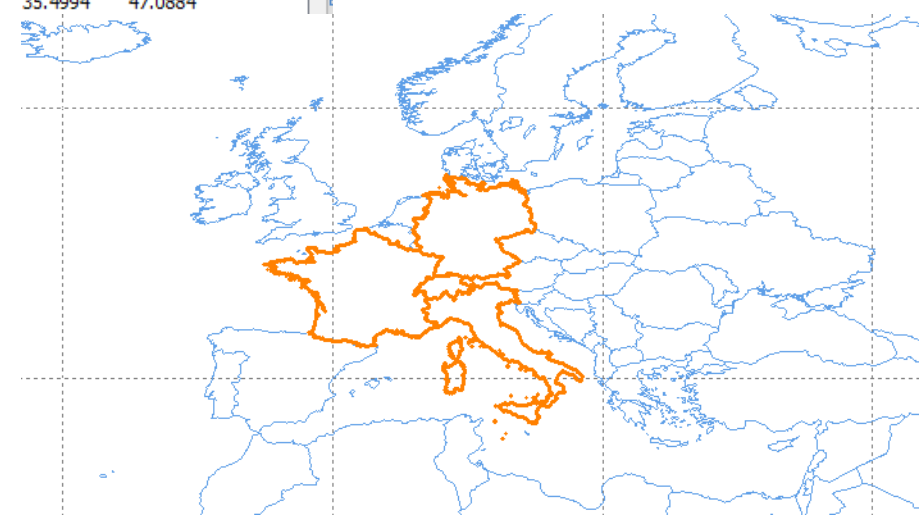
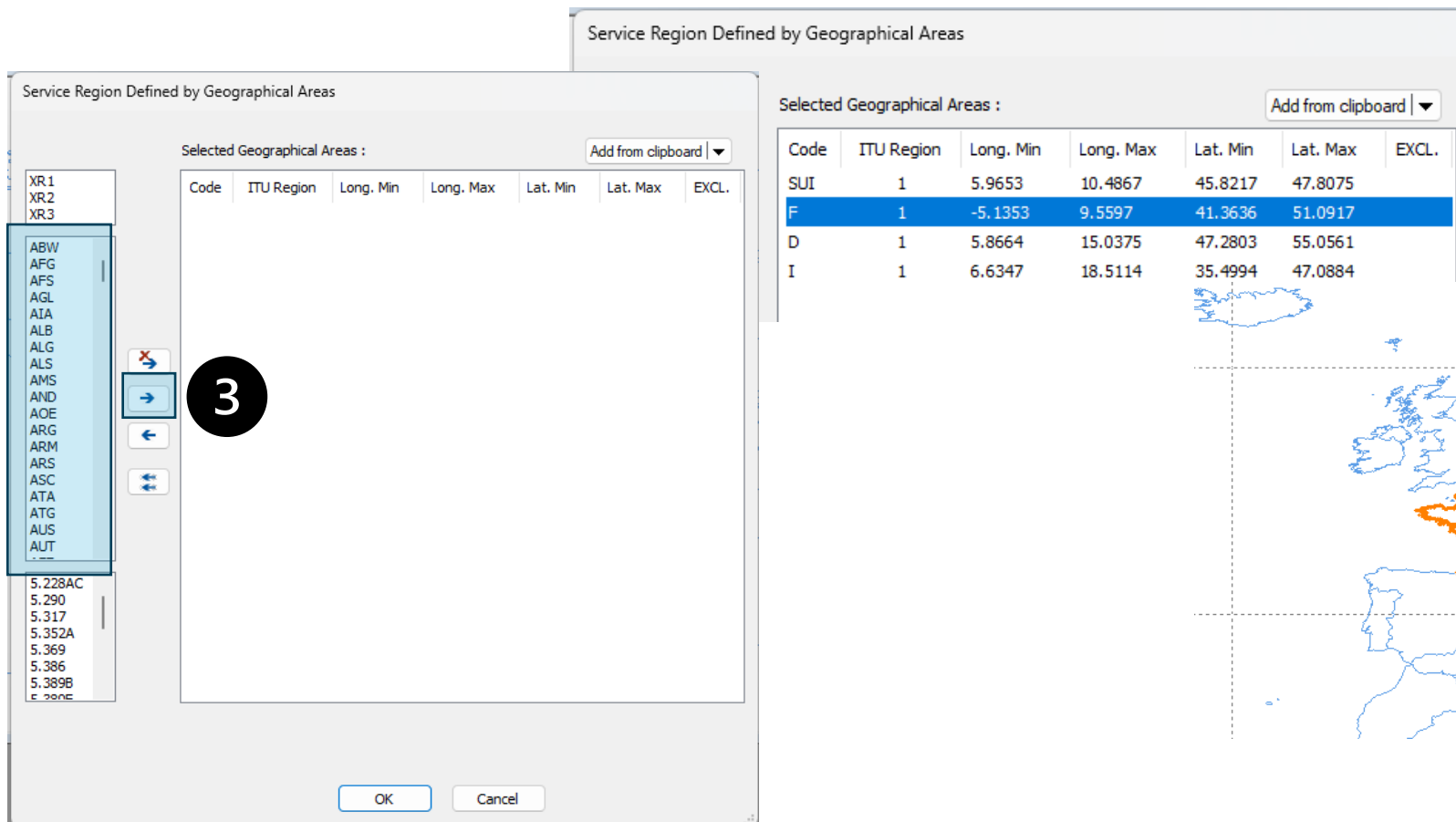
SERVICE AREA – ITU REGIONS



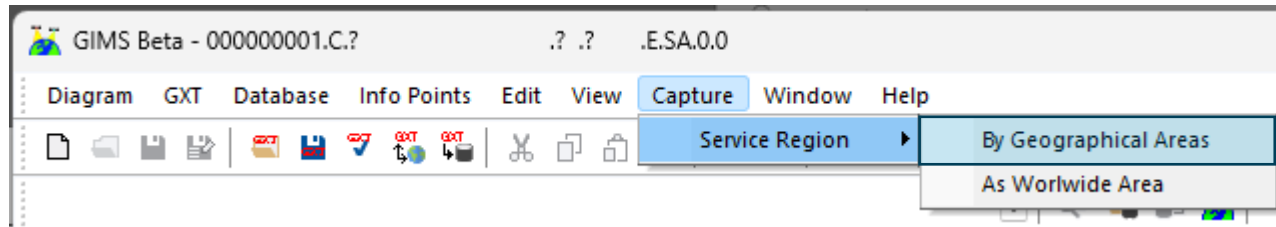
SERVICE AREA – INDIVIDUAL TERRITORIES



1



SERVICE AREA – TERRITORIES in FOOTNOTES

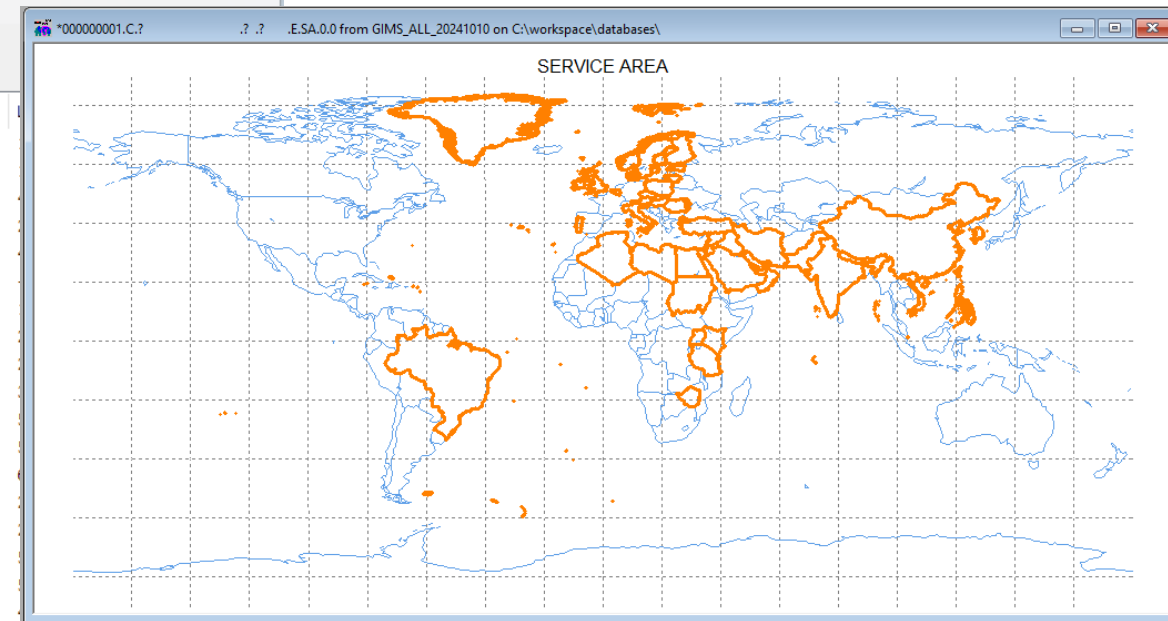


Service Region Defined by Geographical Areas

Selected Geographical Areas :

Code	ITU Region	Long. Min	Long. Max
ALG	1	-8.6678	11.9867
ARS	1	34.5719	55.6672
AUT	1	9.533	17.167
BHR	1	50.3644	50.8239
BEL	1	2.5411	6.3767
B	2	-74.0075	-29.3594
CHN	3	73.6167	134.7731
HKG	3	113.8244	114.3781
MAC	3	113.5272	113.5848
KOR	3	124.6114	130.9231
DNK	1	8.0725	15.1617
GRL	2	-73.0139	-12.1689
FRO	1	-7.6517	-6.2205
EGY	1	24.7061	36.8989
UAE	1	51.1108	56.3822
EST	1	21.8272	28.1895
FIN	1	19.6639	31.572
HNG	1	16.11	22.8967
IND	3	68.1742	97.3942

6.7572 35.5042



Service Region Defined by Geographical Areas

Selected Geographical Areas :

Add from clipboard

3

5.536B In Algeria, Saudi Arabia, Austria, Bahrain, Belgium, Brazil, China, Korea (Rep. of), Denmark, Egypt, United Arab Emirates, Estonia, Finland, Hungary, India, Iran (Islamic Republic of), Iraq, Ireland, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Lithuania, Moldova, Norway, Oman, Uganda, Pakistan, the Philippines, Poland, Portugal, Qatar, the Syrian Arab Republic, Türkiye, Dem. People's Rep. of Korea, Slovakia, the Czech Rep., Romania, the United Kingdom, Singapore, Slovenia, Somalia, Sudan, Sweden, Tanzania, Viet Nam and Zimbabwe, earth stations operating in the Earth exploration-satellite service in the frequency band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services. Resolution **242 (Rev.WRC-23)** applies. (WRC-23)

SERVICE AREA – REALY ALL TERRITORIES

Service Region Defined by Geographical Areas

Selected Geographical Areas :

Add from clipboard ▼

Code	ITU Region	Long. Min	Long. Max	Lat. Min	Lat. Max	EXCL.
AUS	3	112.9067	159.0939			

Additional Geographical Areas

Do you want to add all other geographical areas belonging to AUS located in the following selected regions ?

☐ XR.1

☐ XR.2

☒ XR.3

Yes No

OK Cancel

INCLUDING
&
EXCLUDING

Code	ITU Region	Long. Min	Long. Max	Lat. Min	Lat. Max	EXCL.
AUS	3	112.9067	159.0939	-54.7531	-9.5844	
NFK	3	167.9203	167.9848	-29.0695	-29.0119	
ICO	3	96.8164	96.925	-12.2075	-11.825	
HMD	3	73.2339	73.8228	-53.1978	-52.9636	
CHR	3	105.5328	105.7148	-10.5711	-10.4116	

SERVICE AREA – EXCLUDING TERRITORIES

1 Create an area from where you can exclude territories: global or ITU region

GIMS Beta - 000000001.C.? .? .? .ESA.0.0

Diagram GXT Database Info Points Edit View **Capture** Window Help

Service Region

By Geographical Areas
As Worldwide Area

Service Region Defined by Geographical Areas

Selected Geographical Areas :

Code ITU Region Long. Min Long. Max Lat. Min Lat. Max EXCL.

F	1	-5.1353	9.5597	41.3636	51.0917	X
D	1	5.8664	15.0375	47.2803	55.0561	X
I	1	6.6347	18.5114	35.4994	47.0884	X
AUT	1	9.533	17.167	46.3964	49.0195	X
SUI	1	5.9653	10.4867	45.8217	47.8075	X

ABW
AFG
AFS
AGL
AIA
ALB
ALG
ALS
AMS
AND
AOE
ARG
ARM
ARS
ASC
ATA
ATG
AUS
AUT

5.228AC
5.290
5.317
5.352A
5.369
5.386
5.389B
5.390C

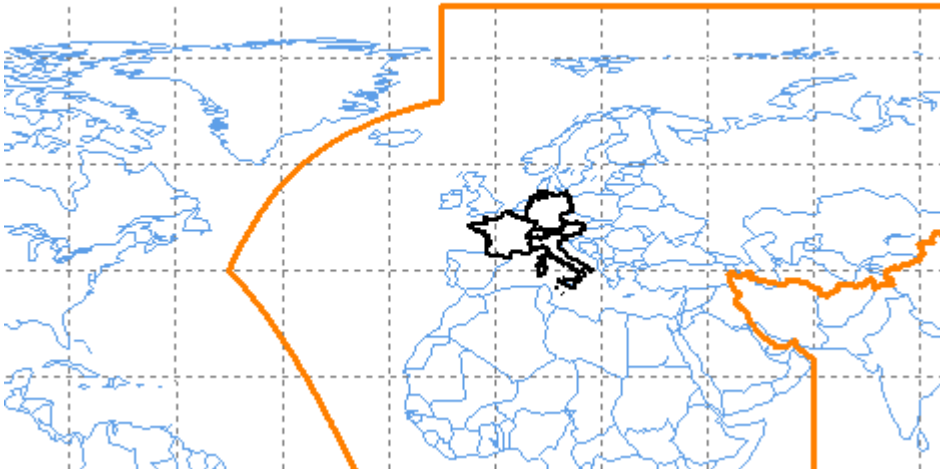
OK Cancel

Selected Geographical Areas :

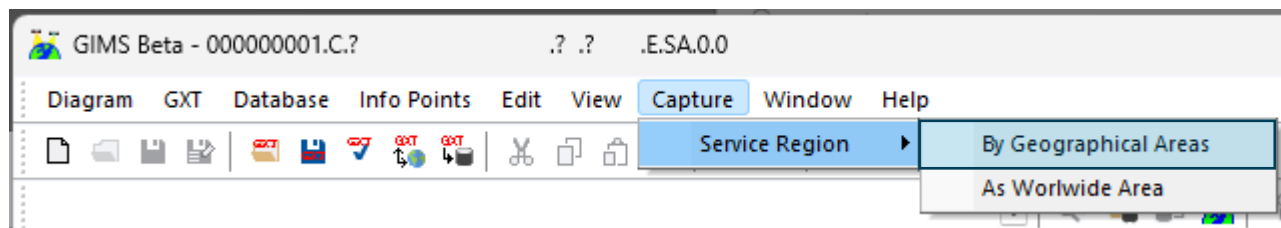
Code ITU Region Long. Min Long. Max Lat. Min Lat. Max EXCL.

F	1	-5.1353	9.5597	41.3636	51.0917	X
D	1	5.8664	15.0375	47.2803	55.0561	X
I	1	6.6347	18.5114	35.4994	47.0884	X
AUT	1	9.533	17.167	46.3964	49.0195	X
SUI	1	5.9653	10.4867	45.8217	47.8075	X

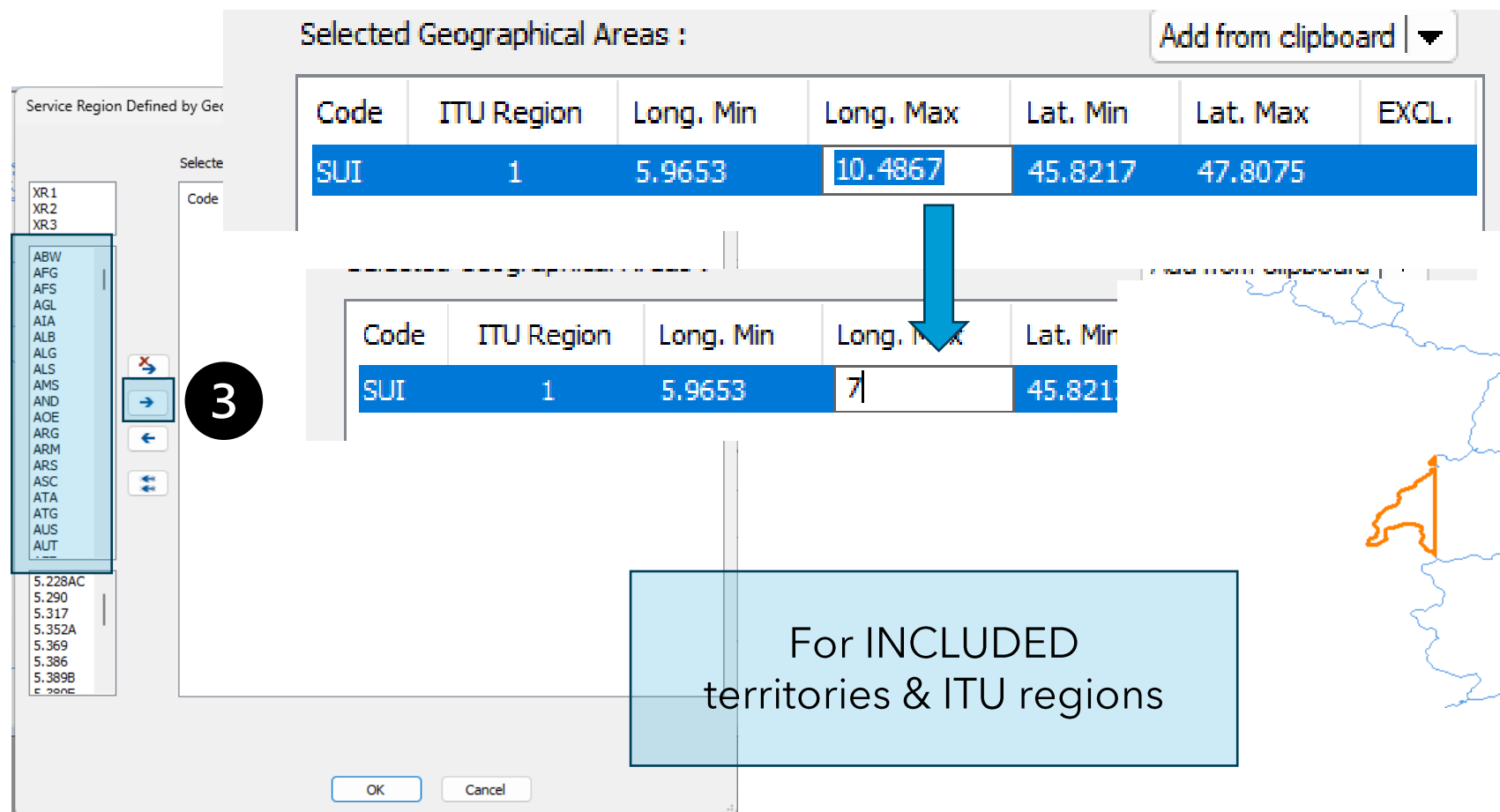
SERVICE AREA



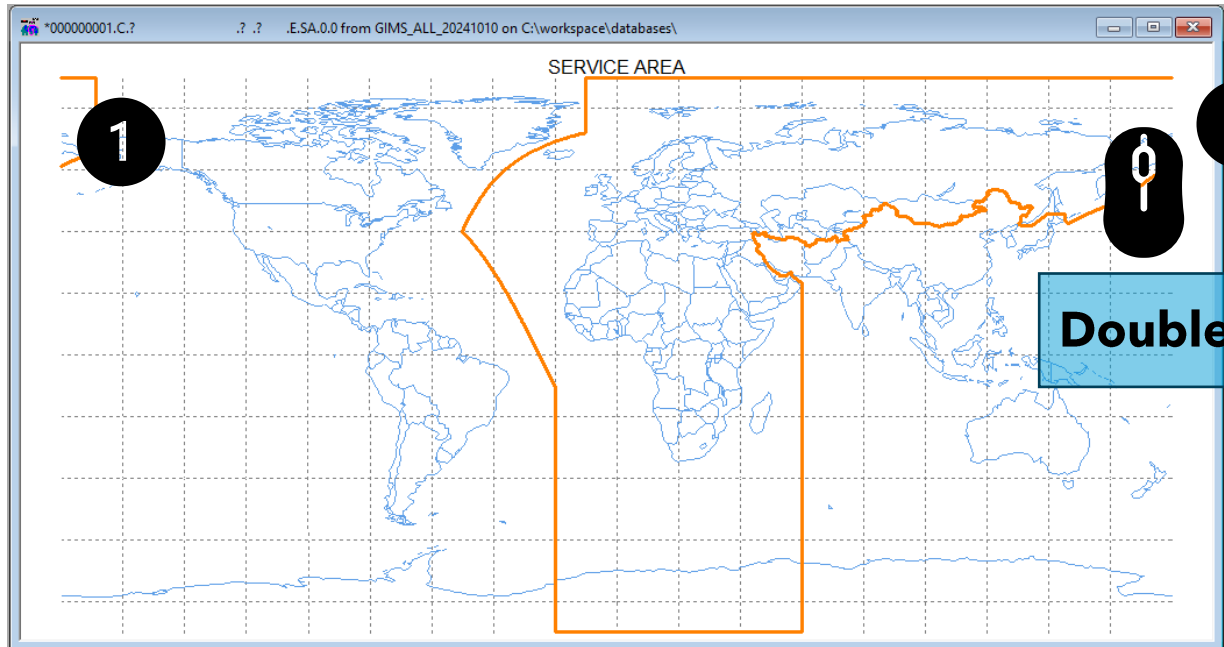
SERVICE AREA – PARTIAL (I)



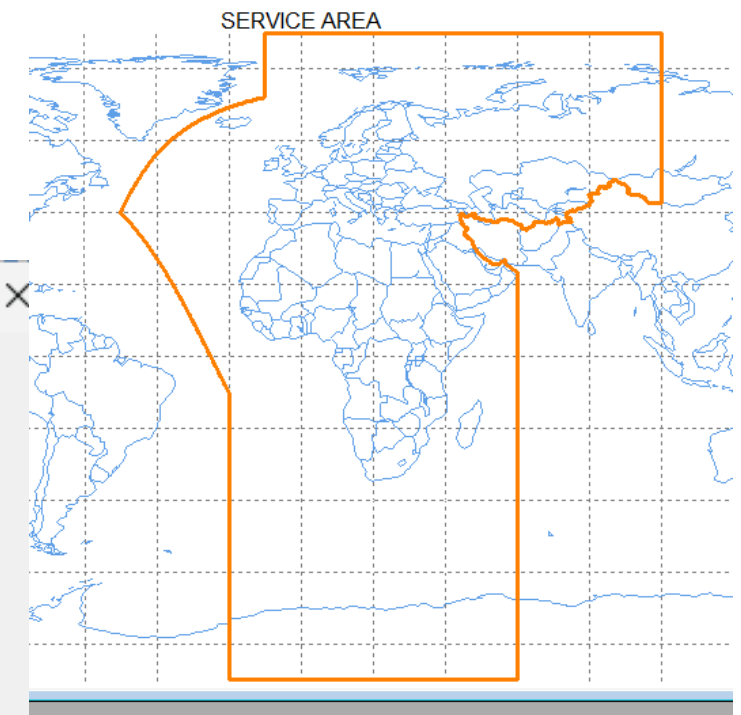
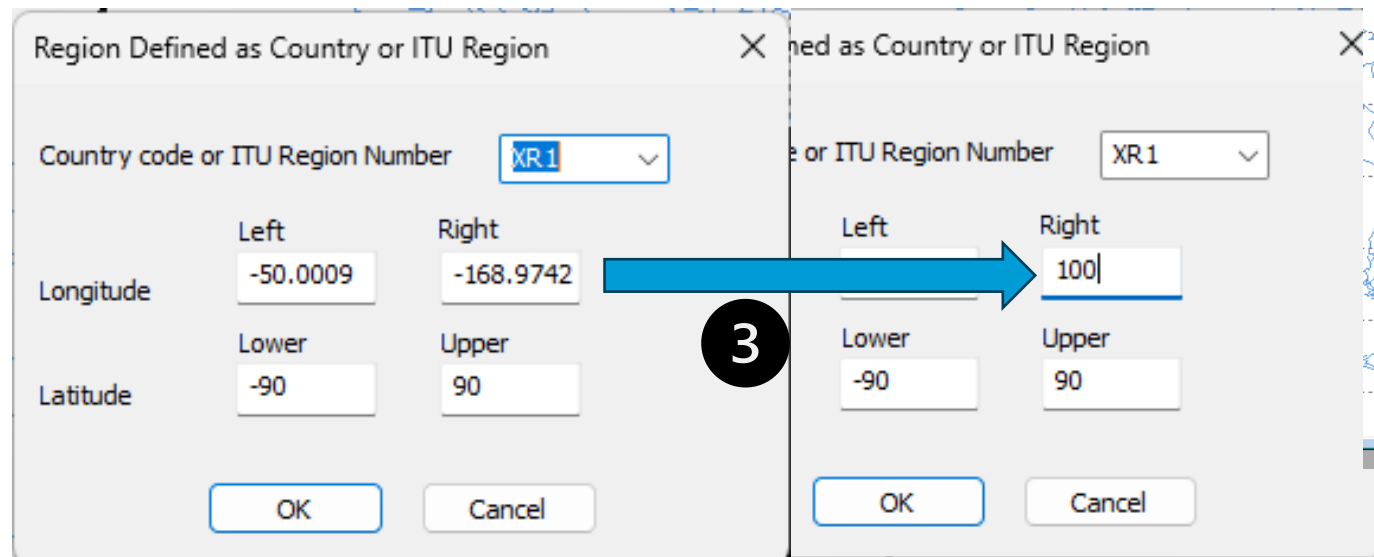
1



SERVICE AREA – PARTIAL (II)



Double-click the area border



SERVICE AREA – FROM CLIPBOARD

BR14 Special Section

C4a Class of station C3a Assigned freq. band

C4b Nature of service C6a Polarization type

C11a2 Service area

A2b Period of valid. A3a Op. agency A3b Adm. resp. BR16 Value of type C8b

BR96 Start date for 9.1/9.1A

BR62 Expiry date for bringing into use

C1 Frequency Range			
C1a Lower limit		C1b Upper limit	
806	MHz	890	MHz

1

Ctrl + C

Selected Geographical Areas :

Code	ITU Region	Long. Min	Long. Max	Lat. Min

Add from clipboard ▼

As included countries

As excluded countries

2

Selected Geographical Areas : Add from clipboard ▼

Code	ITU Region	Long. Min	Long. Max	Lat. Min	Lat. Max	EXCL.
XR1	1	-50.0009	-168.9742	-90	90	
B	2	-74.0075	-29.3594	-33.7464	5.2731	
MEX	2	-118.4009	-86.7008	14.5466	32.7189	
USA	2	-124.7042	-66.9825	19.8869	49.3625	

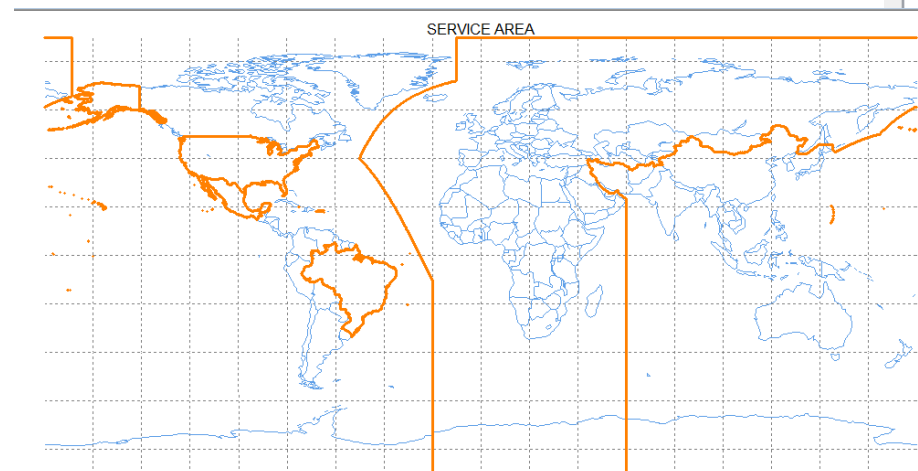
Additional Geographical Areas

Do you want to add all other geographical areas belonging to USA located in the following selected ITU regions ?

- ☐ XR1
- ☒ XR2
- ☒ XR3

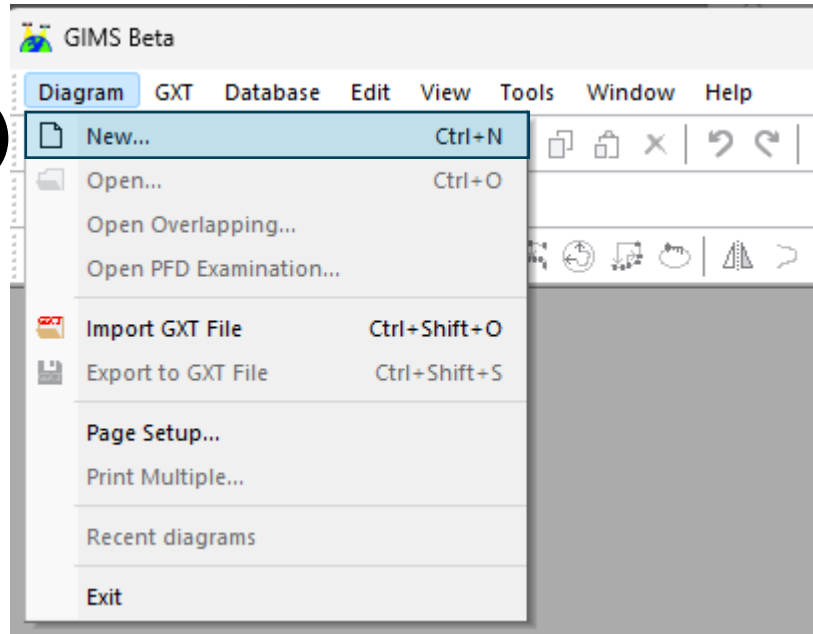
Yes

No

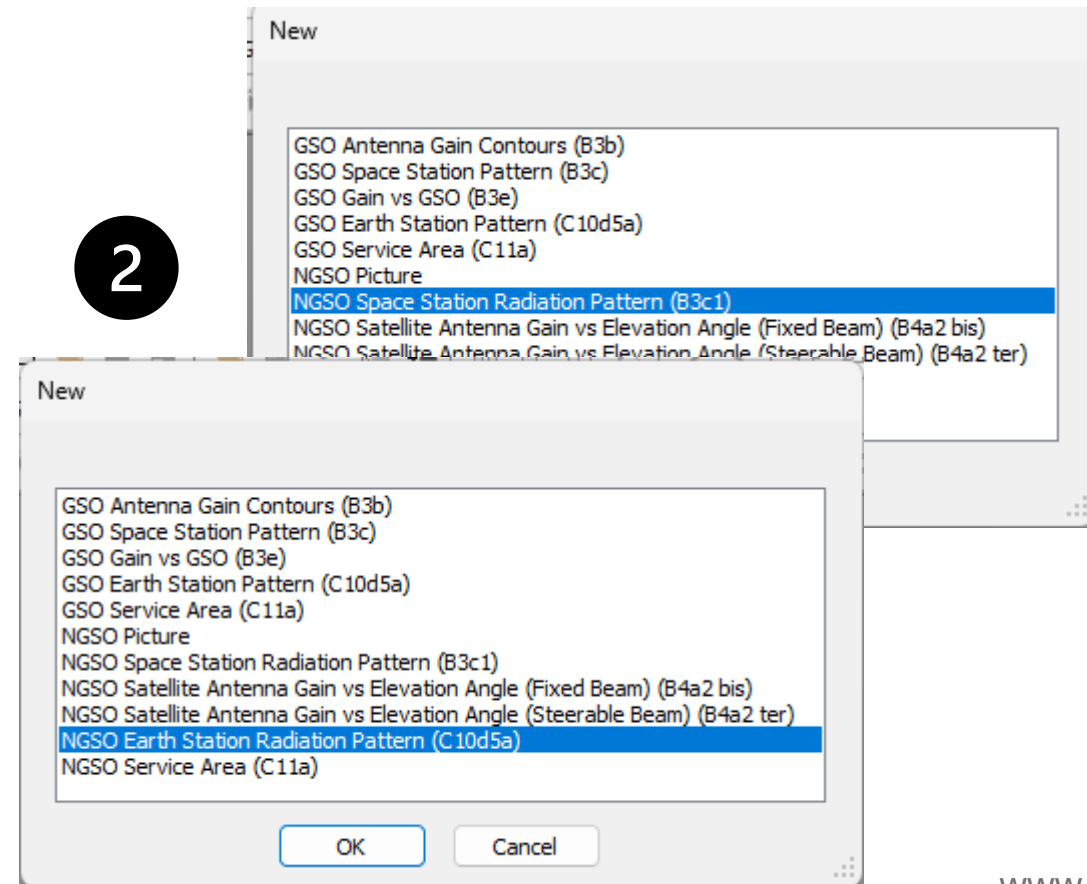


ANTENNA PATTERN

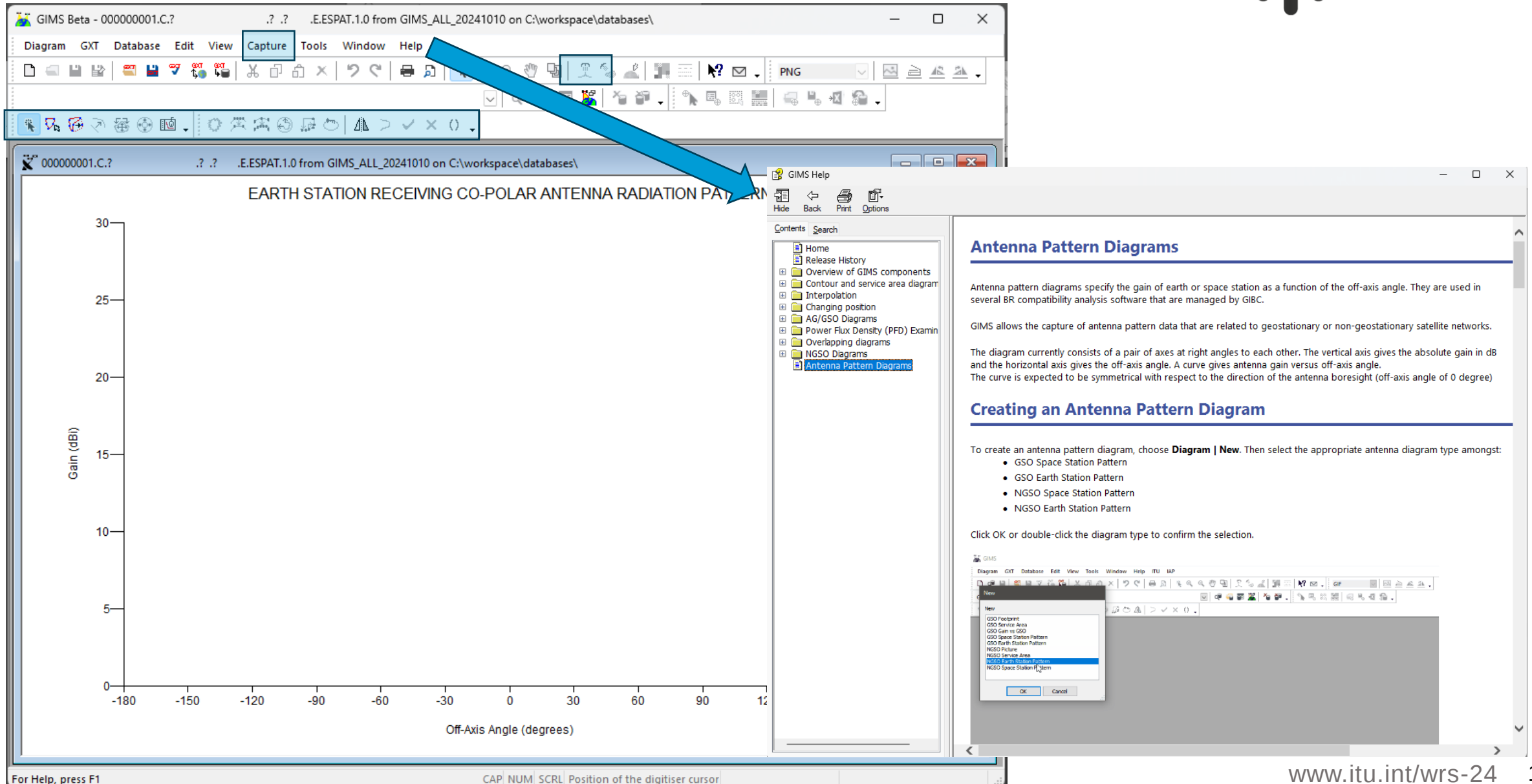
1



2



ANTENNA PATTERN - HELP



The screenshot displays the GIMS Beta software interface. The main window shows a plot titled "EARTH STATION RECEIVING CO-POLAR ANTENNA RADIATION PATTERN". The vertical axis is labeled "Gain (dBi)" and ranges from 0 to 30. The horizontal axis is labeled "Off-Axis Angle (degrees)" and ranges from -180 to 120. A blue arrow points from the "Capture" button in the top toolbar to the "Antenna Pattern Diagrams" section in the GIMS Help window.

The GIMS Help window is open, showing the "Antenna Pattern Diagrams" section. The "Contents" pane on the left lists the following items:

- Home
- Release History
- Overview of GIMS components
- Contour and service area diagram
- Interpolation
- Changing position
- AG/GSO Diagrams
- Power Flux Density (PFD) Examination
- Overlapping diagrams
- NGSO Diagrams
- Antenna Pattern Diagrams**

The main content area of the help window contains the following text:

Antenna Pattern Diagrams

Antenna pattern diagrams specify the gain of earth or space station as a function of the off-axis angle. They are used in several BR compatibility analysis software that are managed by GIBC.

GIMS allows the capture of antenna pattern data that are related to geostationary or non-geostationary satellite networks.

The diagram currently consists of a pair of axes at right angles to each other. The vertical axis gives the absolute gain in dB and the horizontal axis gives the off-axis angle. A curve gives antenna gain versus off-axis angle. The curve is expected to be symmetrical with respect to the direction of the antenna boresight (off-axis angle of 0 degree).

Creating an Antenna Pattern Diagram

To create an antenna pattern diagram, choose **Diagram | New**. Then select the appropriate antenna diagram type amongst:

- GSO Space Station Pattern
- GSO Earth Station Pattern
- NGSO Space Station Pattern
- NGSO Earth Station Pattern

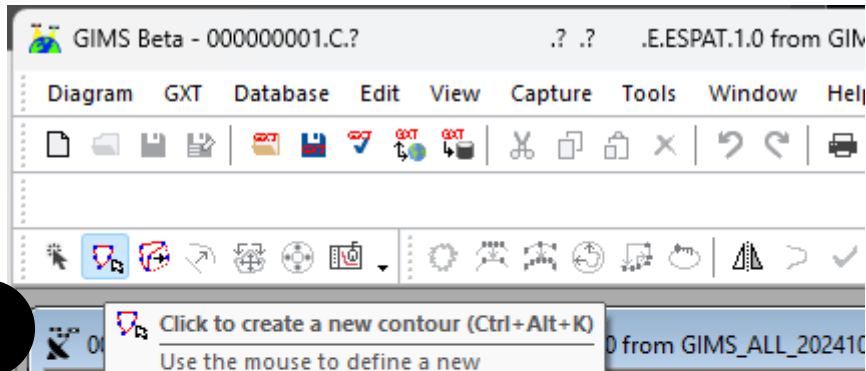
Click OK or double-click the diagram type to confirm the selection.

A small inset window shows the "New" dialog box with the following options:

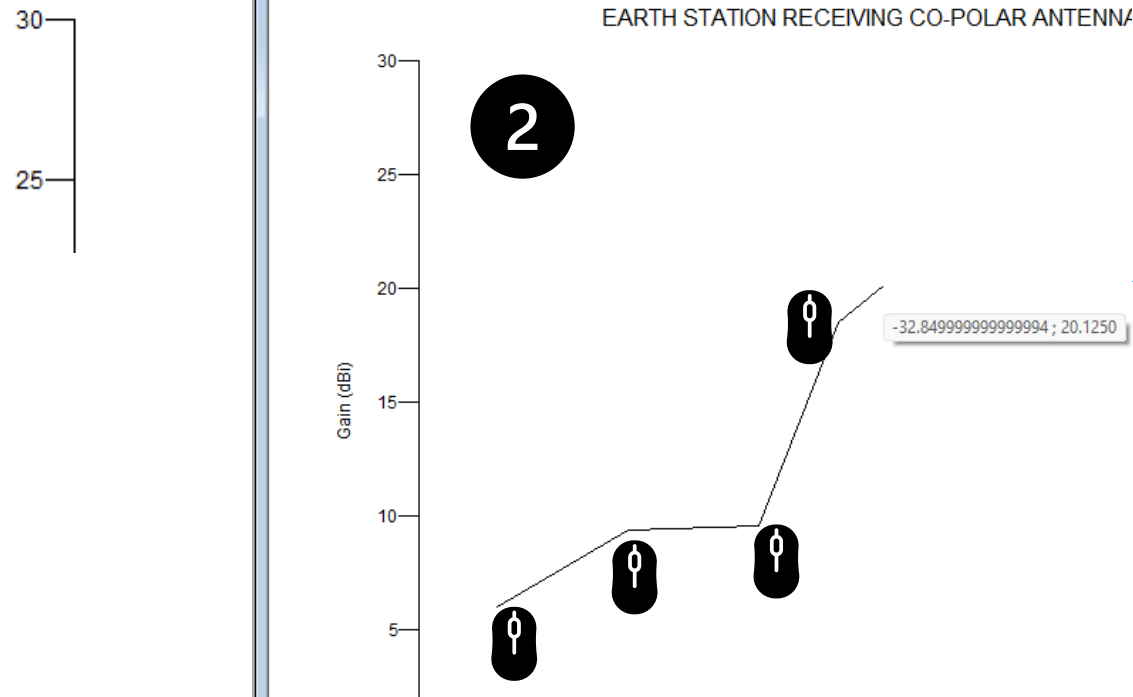
- GSO Footprint
- GSO Service Area
- GSO Gain vs GSO
- GSO Space Station Pattern
- GSO Earth Station Pattern
- NGSO Footprint
- NGSO Service Area
- NGSO Earth Station Pattern**
- NGSO Space Station Pattern

ANTENNA PATTERN – CREATE WITH MOUSE

1

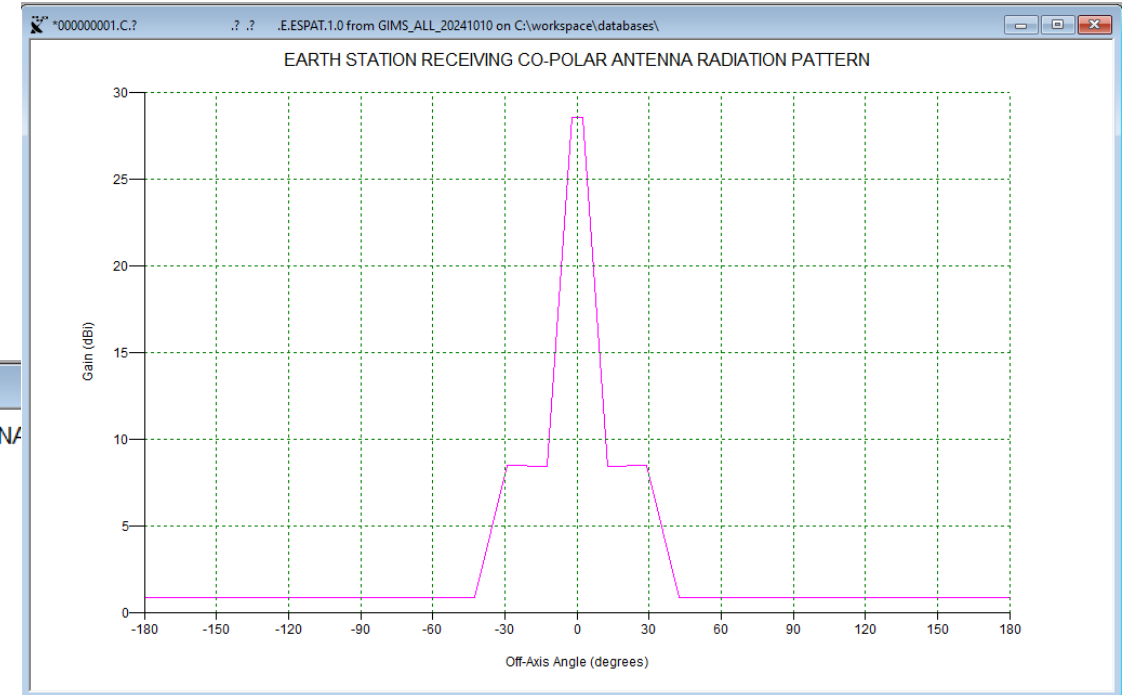


2

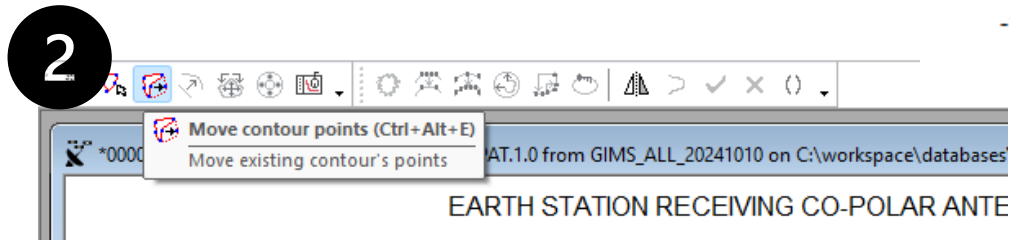
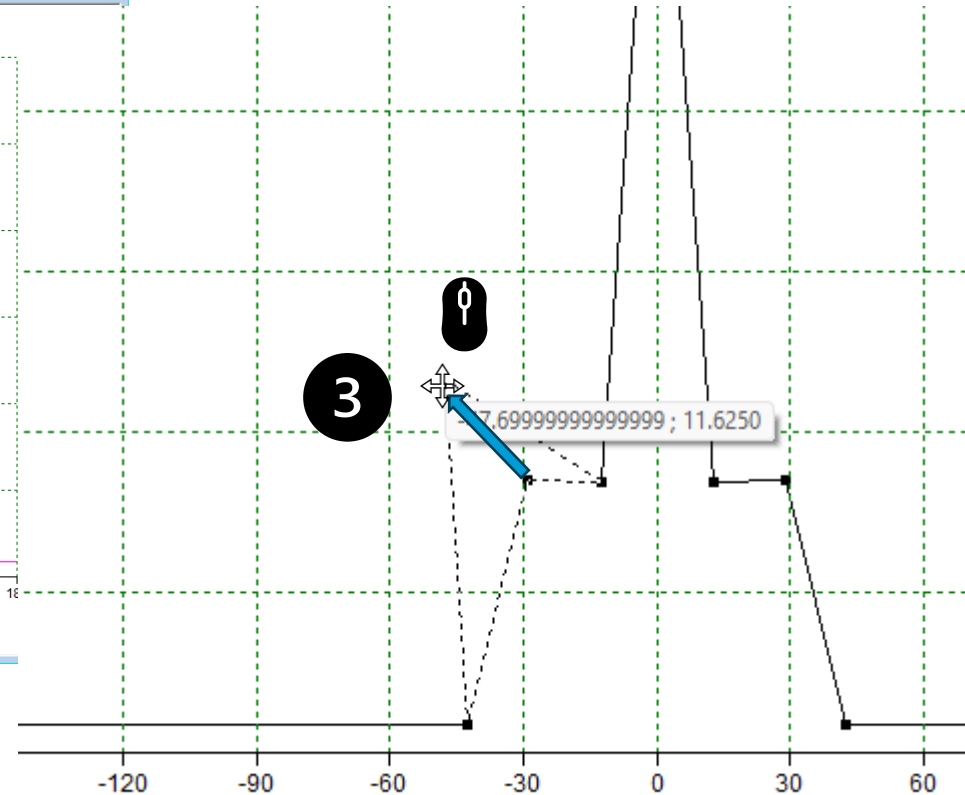
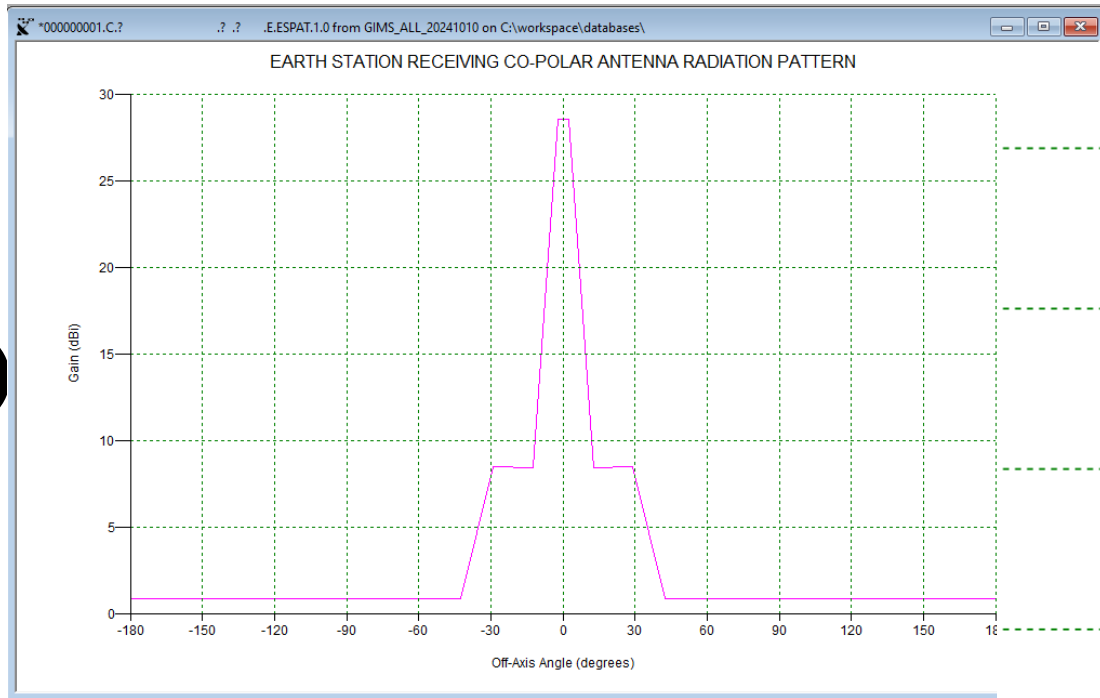


3

Double-click to end contour

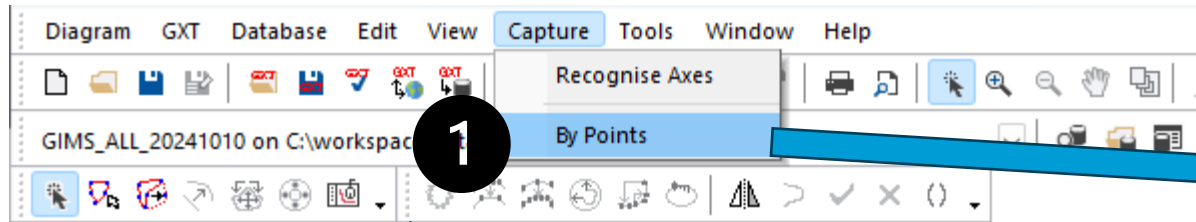


ANTENNA PATTERN – EDIT WITH MOUSE



Add points with **Ctrl** key down
Remove points with **Shift** key down

ANTENNA PATTERN – CREATE FROM TABLE



Point Capture

Enter points using the digitiser or by typing on the keyboard

	Off-axis	Gain
1	0	30
2	5	30
3	30	10
4	60	5
5		

Clear Table

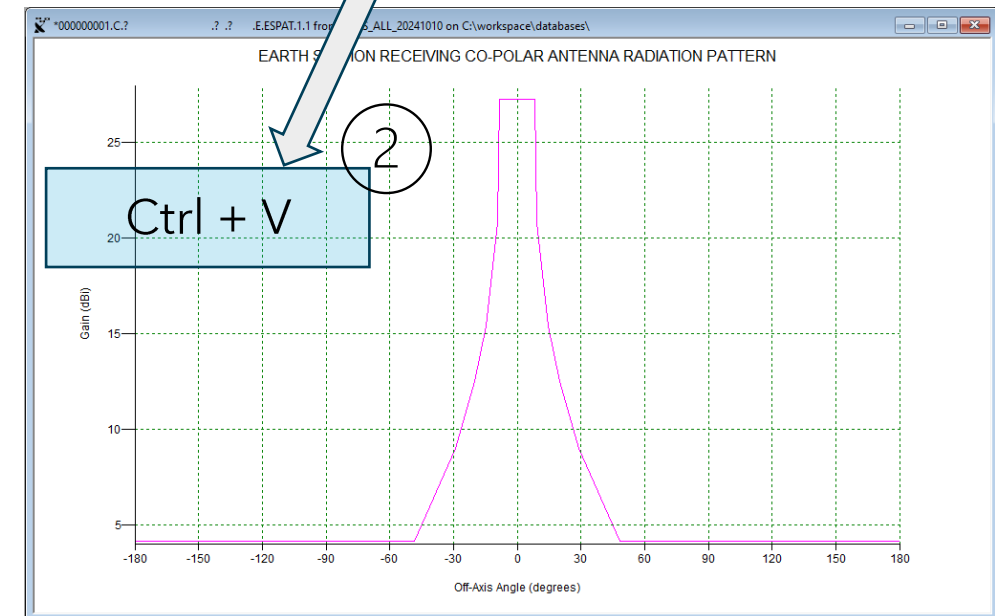
Insert from Clipboard

OK

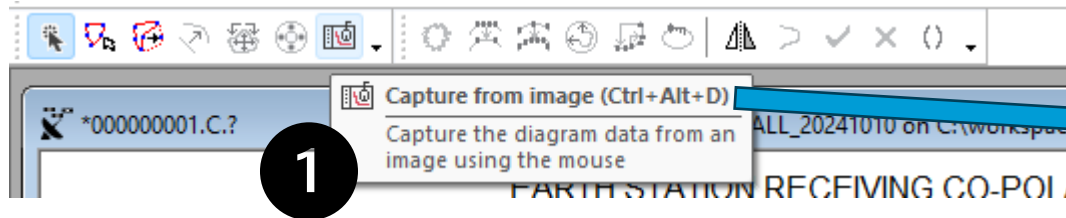
Cancel

Ctrl + C

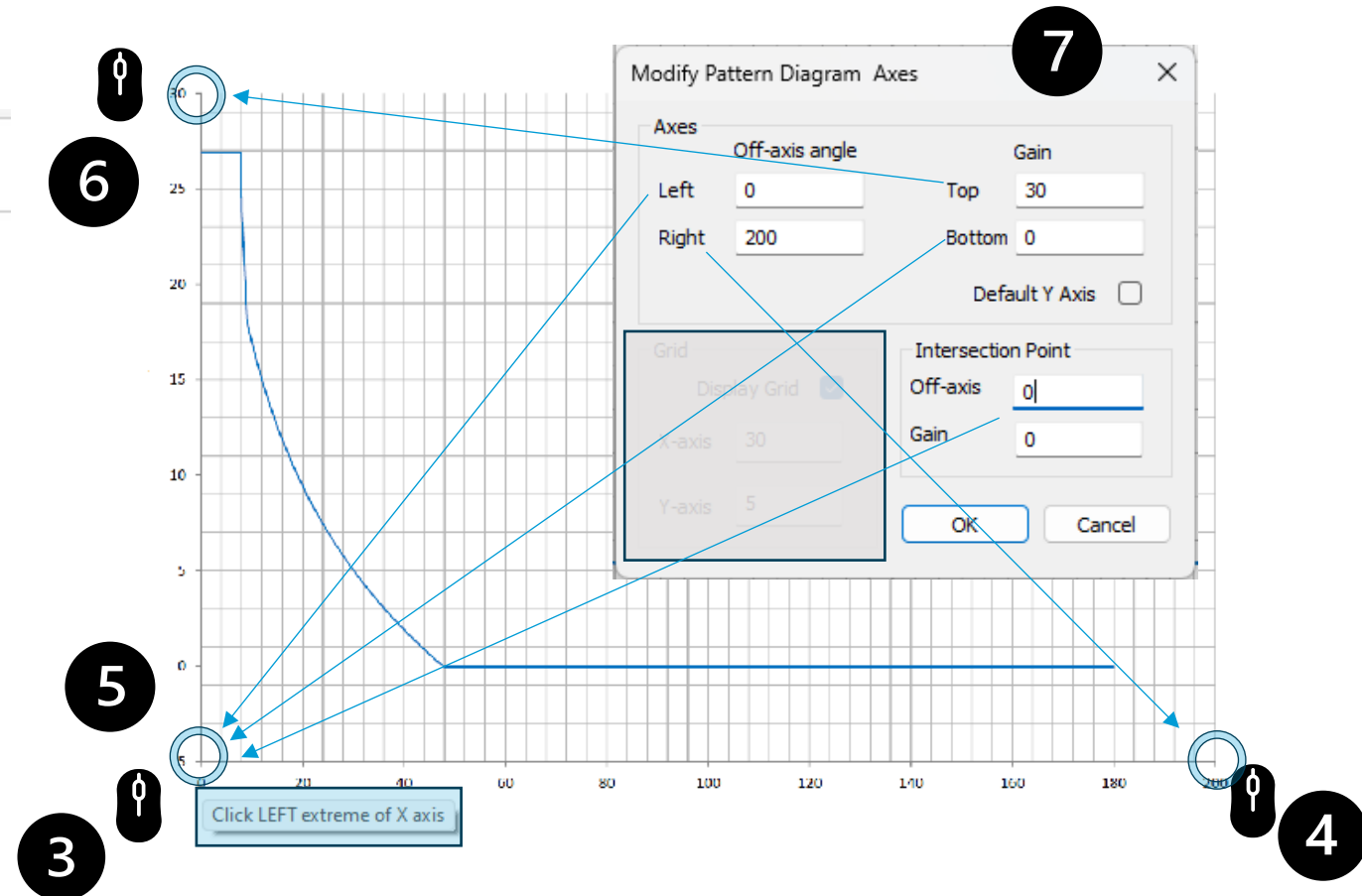
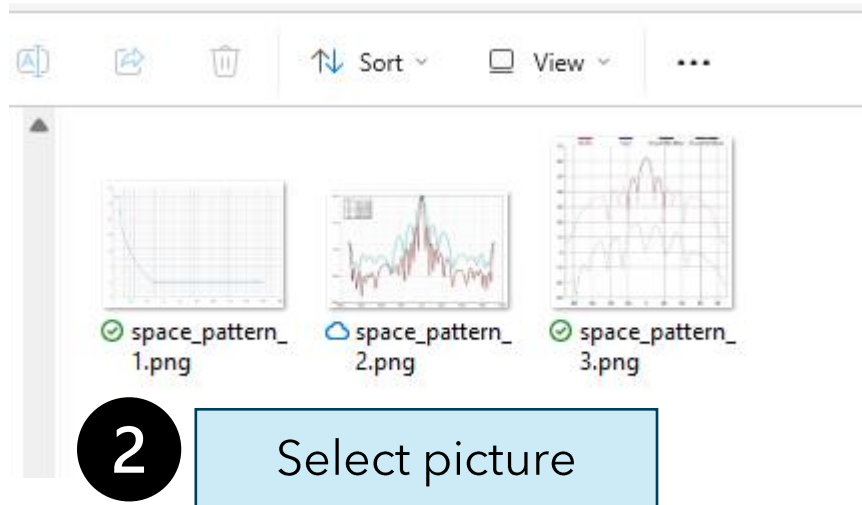
-180.00	4.14
-48.59	4.14
-29.15	9.00
-20.06	12.50
-14.73	15.36
-9.40	20.79
-8.15	27.21
8.15	27.21
9.40	20.79
14.73	15.36
20.06	12.50
29.15	9.00
48.59	4.14
180.00	4.14



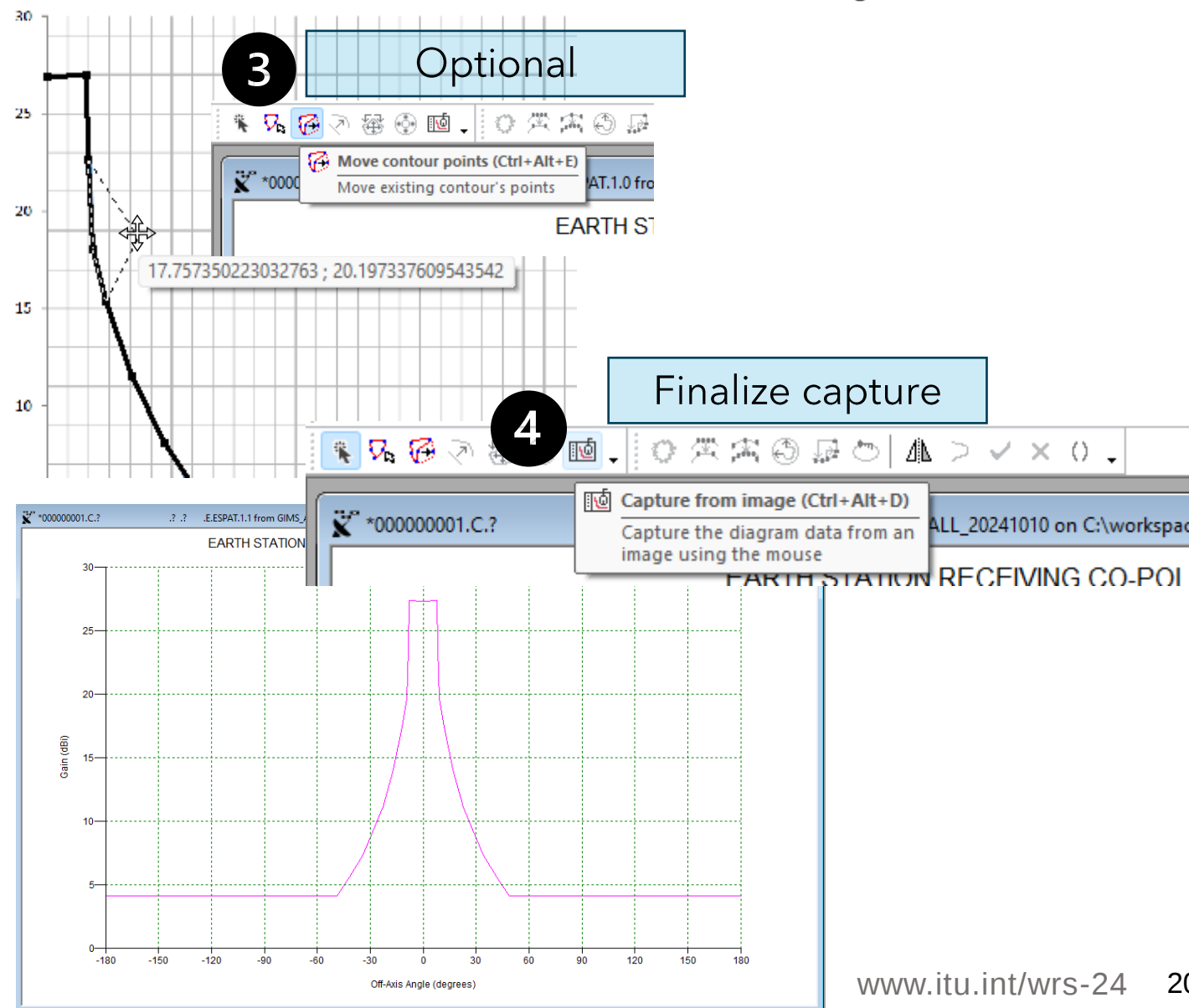
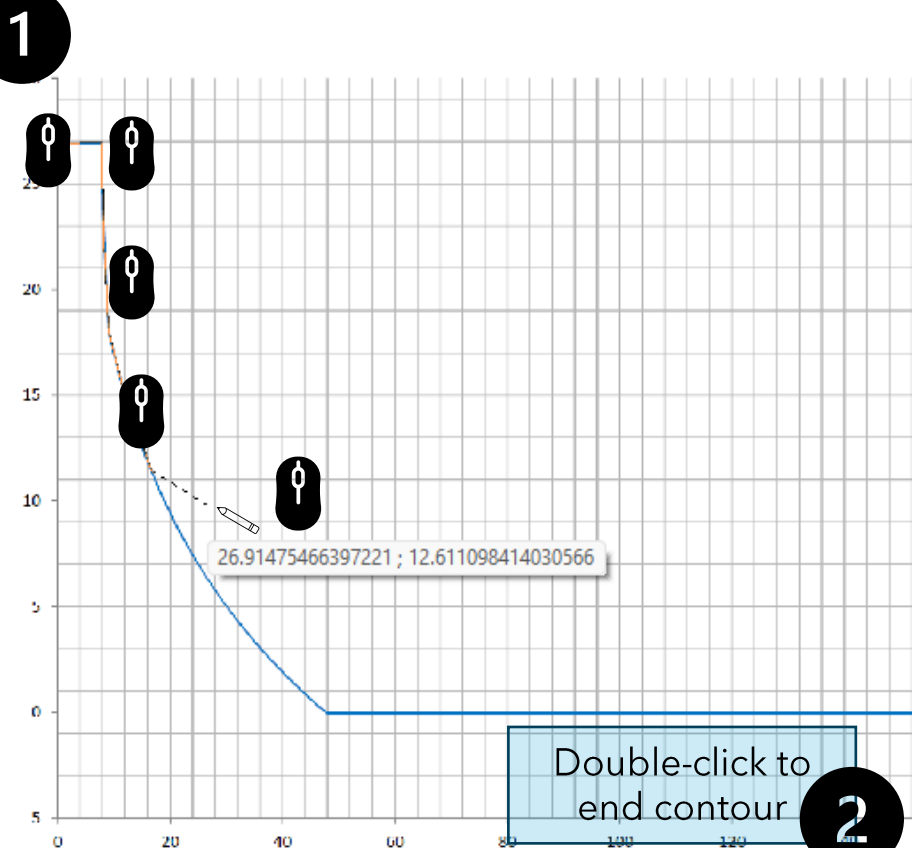
ANTENNA PATTERN – FROM PICTURE (I)



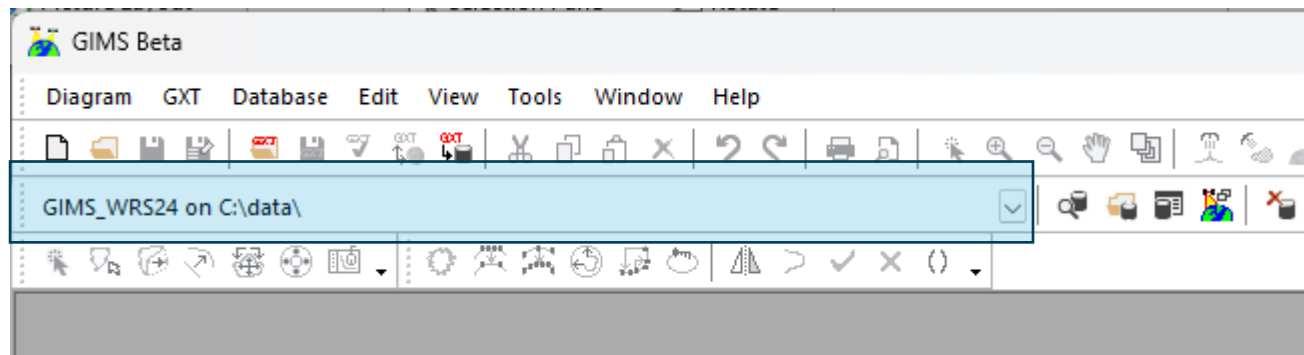
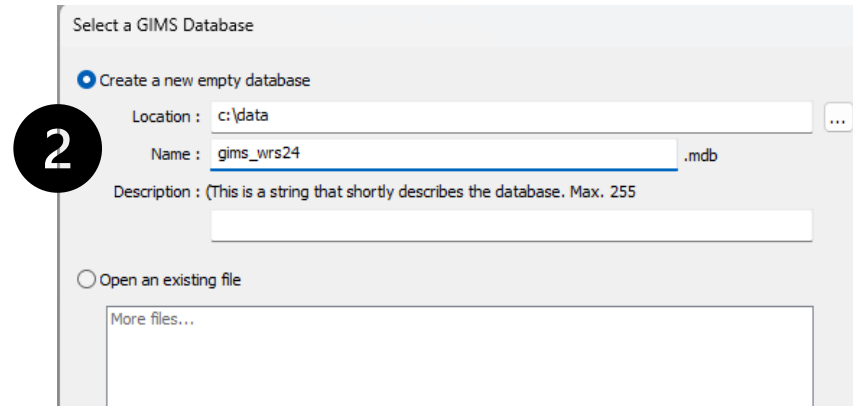
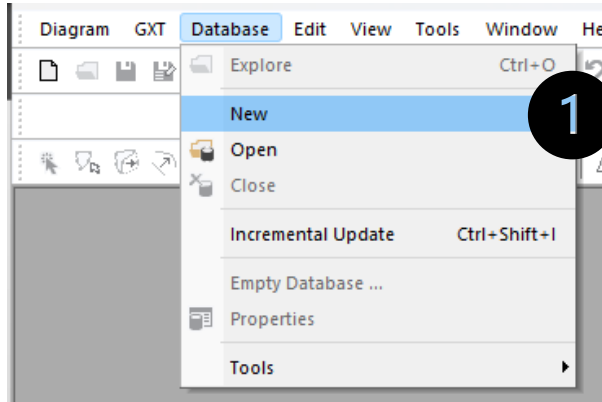
Click to enter image capture mode
Click again to leave



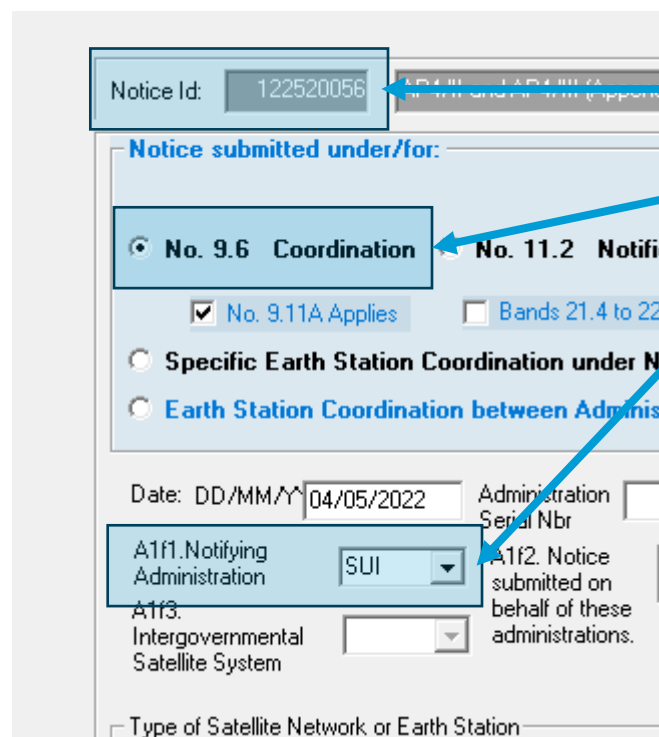
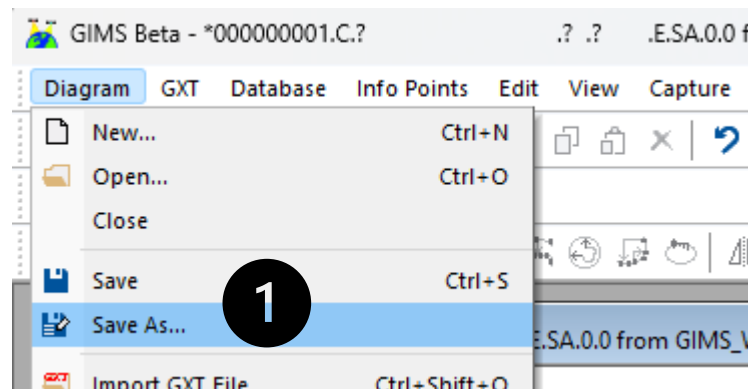
ANTENNA PATTERN – FROM PICTURE (II)



SERVICE AREA & ANTENNA PATTERN – SAVING



SERVICE AREA – SAVING



Notice Id: 122520056

Notice submitted under/for:

☒ No. 9.6 Coordination

☐ No. 11.2 Notification

☒ No. 9.11A Applies ☐ Bands 21.4 to 22

☐ Specific Earth Station Coordination under N

☐ Earth Station Coordination between Adminis

Date: DD/MM/YY 04/05/2022 Administration Serial Nbr

A1f1. Notifying Administration SUI

A1f2. Notice submitted on behalf of these administrations.

A1f3. Intergovernmental Satellite System

Type of Satellite Network or Earth Station

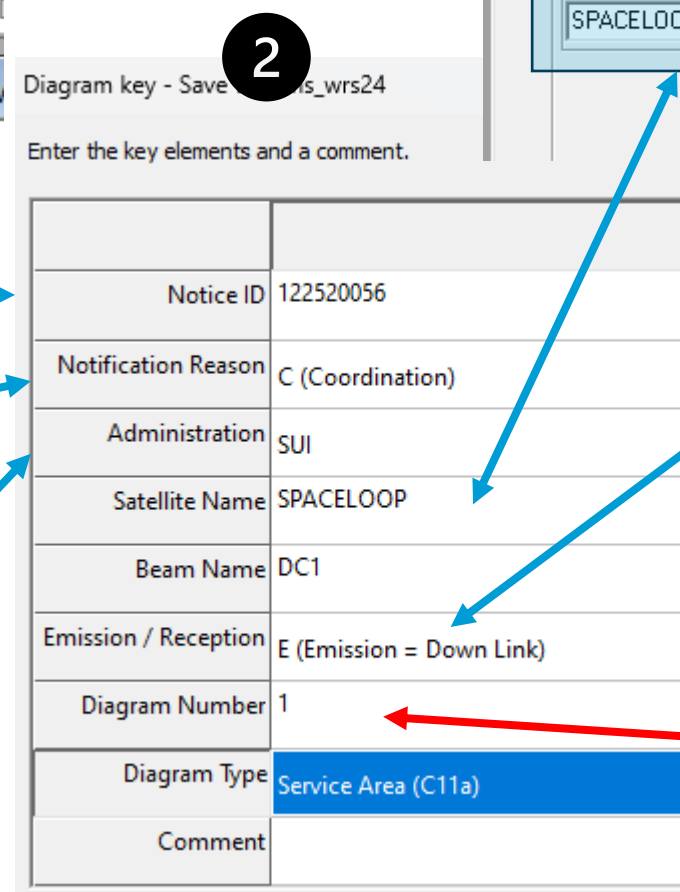
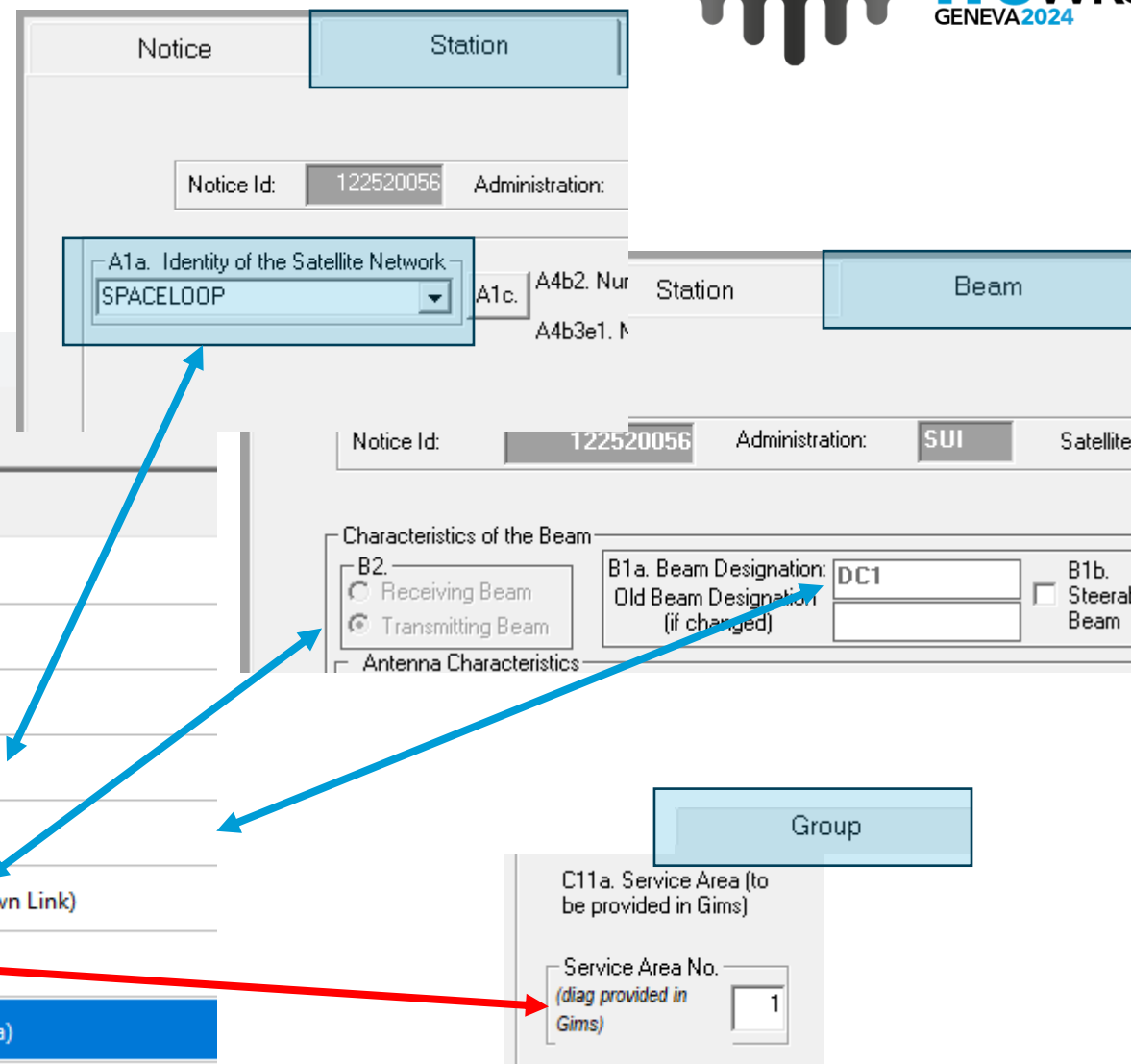


Diagram key - Save

Enter the key elements and a comment.

Notice ID	122520056
Notification Reason	C (Coordination)
Administration	SUI
Satellite Name	SPACELOOP
Beam Name	DC1
Emission / Reception	E (Emission = Down Link)
Diagram Number	1
Diagram Type	Service Area (C11a)
Comment	



Notice Station

Notice Id: 122520056 Administration:

A1a. Identity of the Satellite Network SPACELOOP

A1c. A4b2. Nur Station Beam

A4b3e1. M

Notice Id: 122520056 Administration: SUI Satellite

Characteristics of the Beam

B2. ☐ Receiving Beam ☒ Transmitting Beam

B1a. Beam Designation: DC1 B1b. Old Beam Designation (if changed)

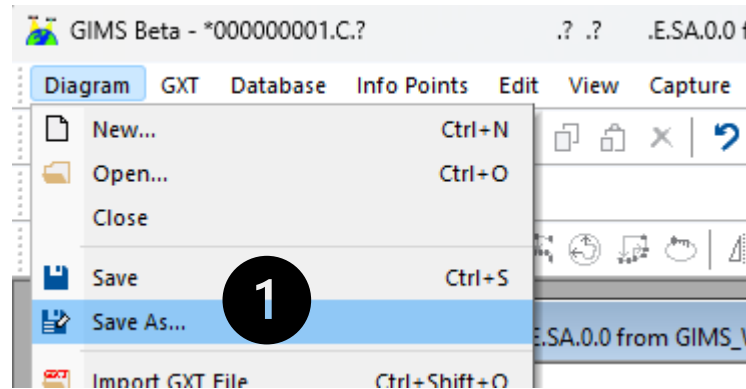
Antenna Characteristics

Group

C11a. Service Area (to be provided in Gims)

Service Area No. (diag provided in Gims) 1

ANTENNA PATTERN SPACE – SAVING



Notice Id: 122520056

Notice submitted under/for:

☒ No. 9.6 Coordination ☐ No. 11.2 Notification

☒ No. 9.11A Applies ☐ Bands 21.4 to 22

☐ Specific Earth Station Coordination under N ☐ Earth Station Coordination between Adminis

Date: DD/MM/YY 04/05/2022 Administration Serial Nbr

A1f1. Notifying Administration SUI A1f2. Notice submitted on behalf of these administrations.

A1f3. Intergovernmental Satellite System

Type of Satellite Network or Earth Station

Diagram key - Save to g..._wrs24

Enter the key elements and a comment.

Notice ID	122520056
Notification Reason	C (Coordination)
Administration	SUI
Satellite Name	SPACELOOP
Beam Name	DC1
Emission / Reception	E (Emission = Down Link)
Diagram Type	Space Station Radiation Pattern (B3c1)
Comment	

Notice Station

Notice Id: 122520056 Administration:

A1a. Identity of the Satellite Network SPACELOOP

A1c. A4b2. Nur A4b3e1. M

Notice Station Beam

Notice Id: 122520056 Administration: SUI Satellite

Characteristics of the Beam

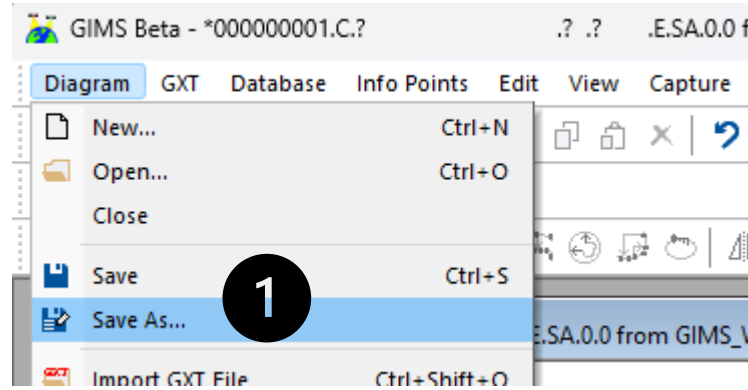
B2. ☐ Receiving Beam ☒ Transmitting Beam

B1a. Beam Designation: DC1 B1b. Beam Designation (if changed)

B1b. ☐ Steerat Beam

Antenna Characteristics

ANTENNA PATTERN EARTH – SAVING



Notice Id: 122520056

Notice submitted under/for:

☒ No. 9.6 Coordination ☐ No. 11.2 Notification

☒ No. 9.11A Applies ☐ Bands 21.4 to 22

☐ Specific Earth Station Coordination under N

☐ Earth Station Coordination between Adminis

Date: DD/MM/YY 04/05/2022 Administration Serial Nbr

A1f1. Notifying Administration SUI A1f2. Notice submitted on behalf of these administrations.

A1f3. Intergovernmental Satellite System

Type of Satellite Network or Earth Station

Diagram key - Save to gims **2**

Enter the key elements and a comment.

Notice ID	122520056
Notification Reason	C (Coordination)
Administration	SUI
Satellite Name	SPACELOOP
Beam Name	DC1
Emission / Reception	E (Emission = Down Link)
Diagram Number	1
Diagram Type	Earth Station Radiation Pattern (C10d5a)
Comment	

Notice Station

Notice Id: 122520056 Administration:

A1a. Identity of the Satellite Network SPACELOOP

A1c. A4b2. Nur A4b3e1. M Station Beam

Notice Id: 122520056 Administration: SUI Satellite

Characteristics of the Beam

B2. ☐ Receiving Beam ☒ Transmitting Beam

B1a. Beam Designation: DC1 B1b. Old Beam Designation (if changed) B1b. Steerat Beam

Antenna Characteristics

Assoc Earth Station

Antenna Radiation Pattern C10d5a1. Co-polar Radiation Pattern Id: or diagram no in Gims database 1