



Earth Station Coordination/Notification and Tools



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Two-step Process



Coordination

Submission of Appendix 4 data to the affected ADM's



Notification

Submission of Appendix 4 data to BR



Coordination of Earth Stations



9.6 Administrations shall effect coordination before notifying to the BR or brings into use any frequency assignment

9.15 Coordination of a Specific or Typical Earth Station of non-GSO in respect of Terrestrial Stations (associated with Footnote - 9.11A)

9.17 Coordination of any Specific Earth Station or Typical Mobile Earth Station in frequency bands above 100 MHz, in respect of Terrestrial Stations, *with the exception of the coordination under 9.15*

9.17A Coordination of any Specific Earth Station in respect of other Earth Stations operating in the opposite direction of transmission (ODT), or any Typical Mobile Earth Station in respect of Specific Earth Station (ODT)

9.21 Specific Earth Station of a service required to seek agreement of other administrations (under Footnotes)



Coordination of Earth Stations



- No. **9.29**: *Requests for coordination under 9.15 to 9.19 shall be **sent by the requesting administration** to the identified administrations, **together with** the appropriate information listed in Appendix 4 to the RR*
- SpaceCap software can be used for the **capture of information required for coordination requests** with the affected Administrations and the resulting file can be sent to these affected Administrations
- When coordination is completed, the **same file can be converted to a notification notice** to be submitted to the Bureau **including obtained coordination agreements**



Notification of an Earth station



- **Any frequency assignment to a transmitting station and to its associated receiving stations shall be notified to the Bureau if (No. 11.2)**
 - Assignment is capable of causing harmful interference; or
 - Assignment is used for international radiocommunication; or
 - Assignment is subject to a world or regional frequency allotment or assignment plan which does not have its own notification procedure; or
 - if that assignment is subject to the coordination procedure of Article 9; or
 - It is desired to obtain international recognition; or
 - Non-conforming assignment seeking to be recorded for information purposes only
- **Similar requirements for receiving earth station (No. 11.9)**



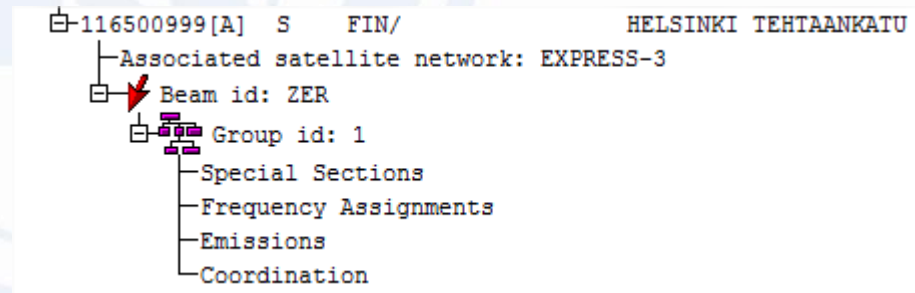
Exercise: **Capture an E/S Coordination Request**



Overview

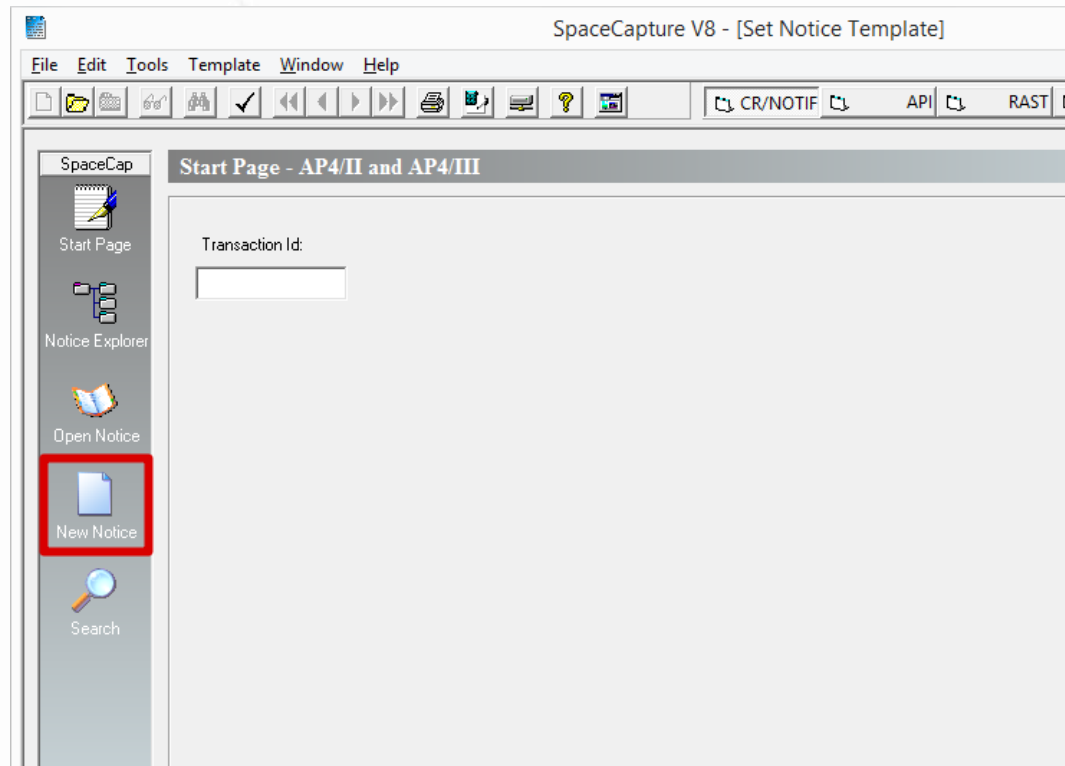


- We will be creating a **new notice** with sufficient data to be used for
 - Capture and analyze the coordination filing and
 - Effect the coordination process
- **Capturing of:**
 - Notice level data
 - Station level data
 - Beam level data
 - *Group level data*





Create a New Notice



- Launch SpaceCap and click on **New Notice**



Specify Notice Type



SpaceCapture V8

File Edit Tools View Window Help

CR/NOTIF API RAST PLAN RS49/552

Specific Earth Station Notice:1

Notice Station Beam Attachments

Notice Id: 1 AP4/II and AP4/III (Appendix 4 - Annex 2A) 15.12.2016 Status 01

Notice submitted under:

No. 9.6 Coordination No. 11.2 Notification First Notification Resubmission

No. 9.11A Applies Bands 21.4 to 22 GHz Bands 21.4 to 22 GHz Special Procedure

No. 9.7A Specific Receive GSD FSS Earth stn Coordination

No. 9.17 Earth Station Coordination amongst Administrations

Date: DD.MM.YY 15.12.2016 Administration Serial Nbr

A1F1. Notifying Administration: FIN

A1F2. Notice submitted on behalf of these administrations.

Notice intended for:

Addition Modification Suppression

BR Identification No. of Station to be modified/suppressed

Type of Satellite Network or Earth Station:

GeoStationary Satellite Network Specific Earth Station Typical Earth Station

NonGeoStationary Satellite Network

More...

- Select **No. 9.17** and **Specific Earth Station**



Enter Station-level Data



SpaceCapture V8

File Edit Tools View Window Help

CR/NOTIF API RAST PLAN RS49/552

Specific Earth Station Notice:1

Notice **Station** Beam Attachments

Notice Id: 1 Administration: Status: 01 Date: 15.12.2016

A1e1. Type of Station
 Typical Specific

A1e2. Earth Station Name: HELSINKI TEHTAANKATU

A1e3a. Country: FIN

A1e3b. Geographical Coordinates
Longitude: Degrees 24 E/W E Min 57 Sec 13
Latitude: Degrees 60 N/S N Min 9 Sec 31

A4c1. Associated Space Station: EXPRESS-3
A4c2. Nominal Orbital Longitude (if geostationary): 11 W E/W

A7b1. Min Elevation Angle (GSO): 15.4 °

A7e. Table of Minimum Antenna Elevation Angles (NGSO)

A16b Commitment to meet PFD limits (applicable bands 13.75-14 GHz) Yes No N/A
A18a Commitment of aircraft earth station (applicable bands 14-14.5 GHz) Yes No N/A

A7d. Altitude: 31 Metres

A7c. Operating Azimuthal Angles (GSO)
1. From: 219.8 ° 2. To: 220 °

A7a. Table of Horizon Elevation/Distance
A7a. Horizon Elevation Diagram attached. See Attachment No.

Current DB : C:\BR_SOFT\DATA\SPACECAP_V8.MDB value clockwise from the true north for the beginning limit of an azimuthal sector expressed in degrees

- Fill in indicated fields



A7a - Horizon Elevation Data



Azimuth	A7a1 Elevation Angle °	A7a2 Distance km (optional)
0	.0	
90	.0	
180	.0	
270	.0	

Current DB : C:\BR_SOFT\DATA\SPACECAP_V8.MDB

value clockwise from the true north for the beginning limit of an azimuthal sector expressed in degrees

- Click on **A7a** button to fill in data in the table



Beam-level Data



The screenshot shows the SpaceCapture V8 interface. The main window is titled "Specific Earth Station Notice:1" and has tabs for Notice, Station, Beam, Group, and Attachments. The "Beam" tab is selected. The "Notice Id" is 1, "Administration" is blank, and "Station Name" is HELSINKI TEHTAANKATU. Under "Characteristics of the Antenna", "Receiving Earth Station" is selected. "B1.a. Beam Designation" is ZER. "B5. Earth Station Antenna Characteristics" includes: "a. Maximum Isotropic Gain" (34.3 dBi), "b. Beamwidth" (2.9 Degrees), "A7f. Antenna Diameter" (blank), "d. Dgso" (blank), and "A10a. E Stn Coordination diagram" (1). "Antenna Radiation Pattern" shows "B5c. Co-polar Radiation Pattern Id" (12) and "A-25*LOG(FI) ==> APENST806V01". An "Attachment Wizard" dialog is open in the bottom right, showing "Attachment No." (1), "Attachment Type" (File), "File Name" (NAME), and "Attachment Description" (attachment for the horizon elevation diagram). The "Save" button is highlighted.

- Capture shown data



Group-level Data



SpaceCapture V8

File Edit Tools View Window Help

CR/NOTIF API RAST PLAN RS49/552

Specific Earth Station Notice:1

Coordination Notice | Special Section Station | Attachments Beam | **Group** | Emissions | Frequencies

Notice: 1 Station Name: HELSINKI TEHTAANKATU EAnt Id: ZER R Group Id: 1 Split Grp Id:

3. Observed Frequencies and Related Characteristics

Add Mod Sup of the group BR Identification of the Group to be modified/suppressed Page No. BR Data

Characteristics Common to a Group of Frequencies **General Characteristics**

C3a. Assigned Frequency Bandwidth: 1000 (kHz)

C4a. Cls	Stn	C4b. Nat	Srv
TC		CP	

C6. Polarization: Type: CL Circular Indirect Polarization

C5b. Receiving System: Noise Temperature: 400 Kelvins

- Capture indicated fields



Operating Agency



SpaceCapture V8

File Edit Tools View Window Help

CR/NOTIF API RAST PLAN RS49/552

Specific Earth Station Notice:1

Coordination Notice	Special Section Station	Attachments Beam	Group	Emissions	Frequencies
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Notice: 1 Station Name: HELSINKI TEHTAANKATU EAnt Id: ZER R Group Id: 1 Split Grp Id:

3. Observed Frequencies and Related Characteristics

Add Mod Sup of the group BR Identification of the Group to be modified/suppressed Page No. BR Data

Characteristics Common to a Group of Frequencies General Characteristics

A3a. Operating Administration or Agency
029 ... EMBASSY OF RUSSIA, HELSINKI

A3b. Responsible Administration
A ... FINNISH COMMUNICATIONS REGULATORY AUTHORITY

To apply this information to other groups, select the beam or notice option.

Apply to current group only Apply to all groups in this beam Apply to all groups in this notice

- A3a and A3b are Notifying ADM specific entries



Emissions



SpaceCapture V8

File Edit Tools View Window Help

CR/NOTIF API RAST PLAN RS49/552

Specific Earth Station Notice:1

Coordination Notice | Special Section Station | Attachments Beam | Group | **Emissions** | Frequencies

Notice Id: 1 Adm: FIN Station Name: HELSINKI TEHTAANKATU EAnt Id: ZER R Group Id: 1

Emissions Received by the Assigned Frequencies

C7a. Designation of Emission	C8e1. C/N objective (total - clear skn) (dB)	C8e2. Atch No. C/N
▶ 1M00G7wBT	10.0	



Frequencies



SpaceCapture V8

File Edit Tools View Window Help

CR/NOTIF API RAST PLAN RS49/552

Specific Earth Station Notice:1

Coordination Notice	Special Section Station	Attachments Beam	Group	Emissions	Frequencies
---------------------	-------------------------	------------------	-------	-----------	-------------

Notice Id: 1 Adm: FIN Station Name: HELSINKI TEHTAANKATU EAnt Id: ZER R Group Id: 1

C2a1. Assigned Frequencies	k/M/GHz
3941.260000	M
3942.260000	M



Special Sections



SpaceCapture V8

File Edit Tools View Window Help

CR/NOTIF API RAST PLAN RS49/552

Specific Earth Station Notice:1

Notice Coordination Station **Special Section** Beam Attachments Group Emissions Frequencies

Notice Id: 1 Adm: FIN Station Name: HELSINKI TEHTAANKATU EAnt Id: ZER R Group Id: 1

Information Common to List of Groups in this Beam

-A13-	
Special Section AR 11/A (RR 1042)	759
Special Section AR 11/C (RR 1060)	2294
Special Section ART. 14 (RR 16 10)	
Special Section API/A (9.1)	
Special Section CR/C (9.6)	
Special Section AP30-30A/F/C	

Other Special Sections	
Reference	Number

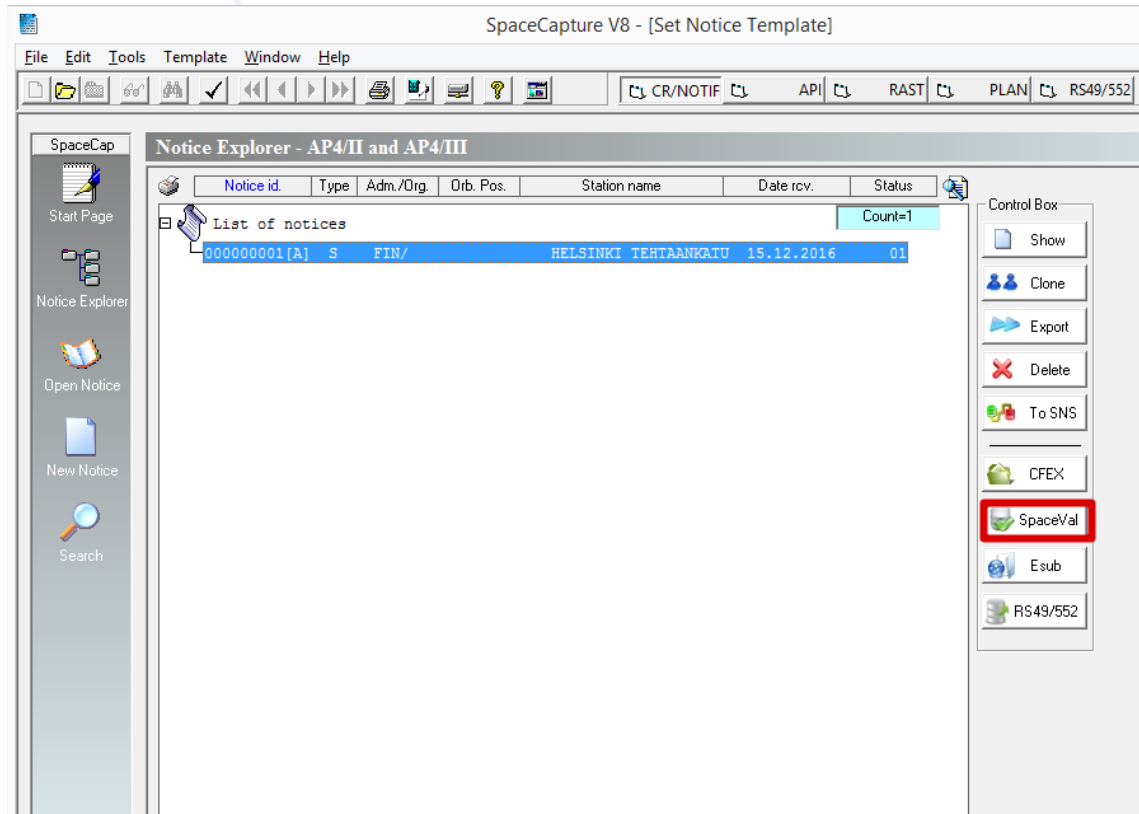
To apply Special Section data to other groups, select the beam or notice option.

Apply to current group only Apply to all groups in this beam Apply to all groups in this notice

- Apply as appropriate to this group/Beam or full notice



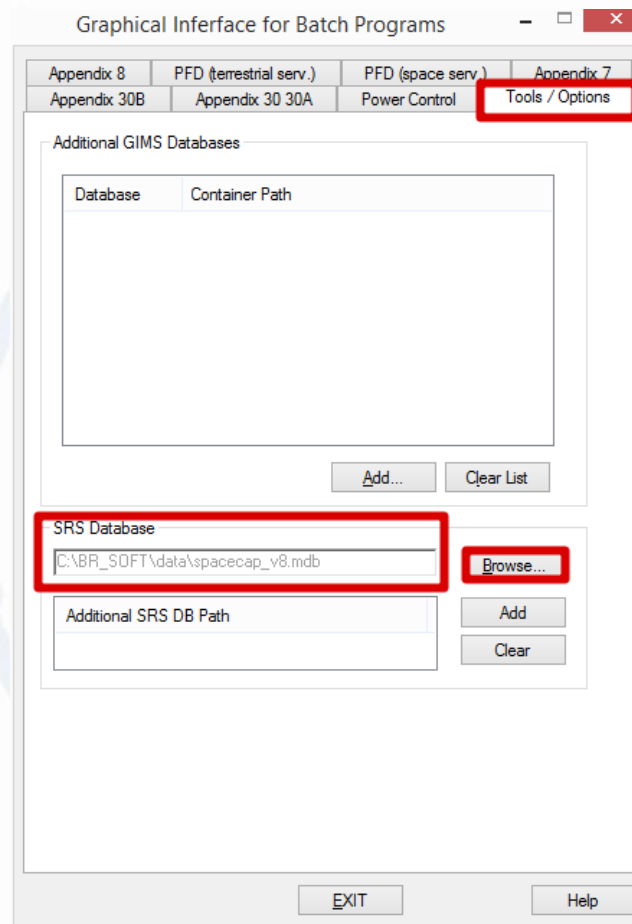
Capturing Done



- **CANNOT Validate 9.17 notice types!**



Generate coordination area diagrams with AP7 software



- Start **GIBC** from SAM
- Make sure that **IDWM** is installed



GIBC: Switch to Appendix 7



Graphical Interface for Batch Programs

Appendix 30B	Appendix 30 30A	Power Control	Tools / Options
Appendix 8	PFD (terrestrial serv.)	PFD (space serv.)	Appendix 7

Network ID:

Warning Error Progress

Message	Module
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Calculation Output

Out DB: C:\BR_TEX_RESULTS\APP7\ESCC.MDB

RTF Report Generation

C:\BR_TEX_RESULTS\APP7\ESCC.MDB

Print Auxiliary Scale (km)

Version

3.5.0.0 Appendix 7

- Important to use **same Network ID** as in captured notice



GIBC: Create Report



Graphical Interface for Batch Programs

Appendix 30B	Appendix 30 30A	Power Control	Tools / Options
Appendix 8	PFD (terrestrial serv.)	PFD (space serv.)	Appendix 7

Network ID:

Warning Error Progress

Message	Module
Calling batch pilot at 12:43:19...	GIBC
Formatting data for calculation: ntc_id = 1...	Progress inc
Loading data from SNS for ntc_id = 1...	Progress inc
Reading RefDb and defining diagrams for ntc_id = 1...	Progress inc
DIAGRAM 1: 2.1_TABLE8. RECEIVING GSO ES IN FIXED...	Progress inc

Calculation Output

Out DB: C:\BR_TEX_RESULTS\APP7\1_161215_124319.mdb

RTF Report Generation

C:\BR_TEX_RESULTS\APP7\1_161215_124319.mdb

Print Auxiliary Scale (km)

Version

3.5.0.0 Appendix 7



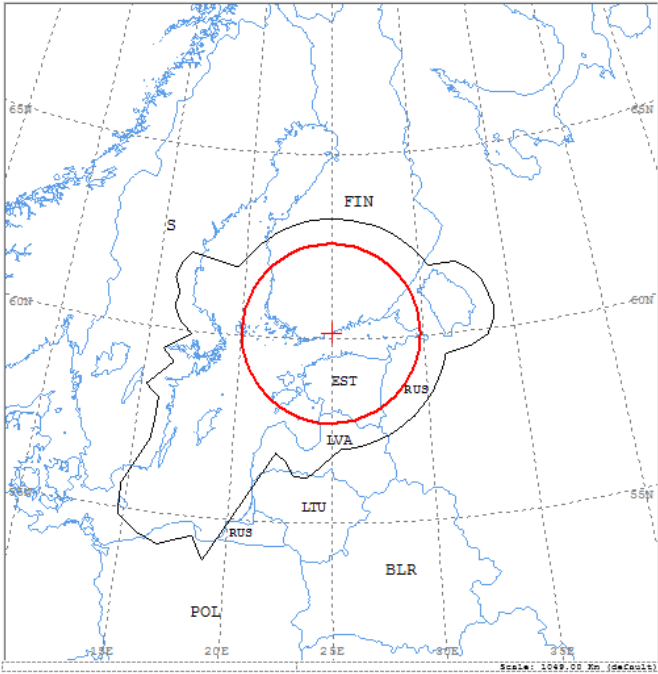
Generated Report



VERSION:3.2.0.0/Appendix 7/Win-3.2.0.0/Freq-3.2.0.0/Cli-3.1.0.0/Rep-1.2.0.0/SMS-3.1.0.0/APT-3.1.0.0/Rac-3.2.0.1

Diagram 1: 2.1_TABLES. RECEIVING GSO ES IN FIXED-SATELLITE SERVICE W.R.T. TRANSMITTING TERRESTRIAL STATIONS. TS: Fixed, mobile

Notice ID: 1 Earth station name: HELSINKI TENTAMATU
 Administration/Geographical area: FIN/FIN Earth station position: 02485713609031
 Satellite orbital position: -11.00 Satellite name: EXPRESS-3
 Frequency band: 3940-7800-3942.7800 MHz



+ ES position
 Main Model
 Main Mode2

ANALYSIS DATE AND TIME: 2016-12-12 12:43:19

VERSION: 3.2.0.0/Appendix 7/Win-3.2.0.0/Freq-3.2.0.0/Cli-3.1.0.0/Rep-1.2.0.0/SMS-3.1.0.0/APT-3.1.0.0/Rac-3.2.0.1

Diagram 1: 2.1_TABLES. RECEIVING GSO ES IN FIXED-SATELLITE SERVICE W.R.T. TRANSMITTING TERRESTRIAL STATIONS. TS: Fixed, mobile

Notice ID: 1 Earth station name: HELSINKI TENTAMATU Earth station position: 02485713609031 PHASE: 0
 ADMIN/GEA AREA: FIN/FIN MAIN OPERATIONAL MODE: X
 SATELLITE NAME: EXPRESS-3 SATELLITE ORBITAL POSITION: -11.00 DEG
 ANTENNA AZIMUTH: 219.90 DEG ANTENNA ELEVATION: 15.35 DEG
 FREQUENCY BAND: 3940.7800-3942.7800 MHz ASSIGNED FREQUENCY: 3942.78 MHz PERCENTAGE OF TIME: 0.001 %
 MAXIMUM ANTENNA GAIN: 34.20 DBI MAXIMUM POWER DENSITY: - DBM/MI NOISE TEMPERATURE: 400.0 K
 ANTENNA PATTERN: APEN2500EVC1
 2.1_TABLES Model: FIM_000000

TRANSMISSION LOSS MODE 1: 188.9 DB (DOES NOT INCLUDE MGR. CORR. AND ANT. GAIN)

TRANSMISSION LOSS MODE 2: 188.9 DB

AZIMUTH	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115
OFF-AXIS	137.7	142.3	146.7	151.0	155.0	158.7	161.5	163.9	164.6	163.8	161.7	158.6	154.9	150.8	146.3	142.1	137.5	132.9	128.2	123.5	118.7	114.0	109.2	104.4
MGR. ELEV.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MGR. CORR.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ANT. GAIN	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
COORDINATION DISTANCE (KM)																								

MODE 1

0.0 DB

243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243
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MODE 2

0.0 DEG

269	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269	269
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AZIMUTH	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235
OFF-AXIS	99.3	94.7	89.9	85.1	80.3	75.3	70.7	65.9	61.1	56.3	51.6	46.9	42.3	37.7	33.3	29.0	25.0	21.3	18.2	16.1	15.4	16.2	16.3	21.4
MGR. ELEV.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MGR. CORR.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ANT. GAIN	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-9.1	-7.6	-5.9	-4.2	-2.5	-1.2	-0.7	-1.2	-2.6	-4.3
COORDINATION DISTANCE (KM)																								

MODE 1

0.0 DB

354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354
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MODE 2

0.0 DEG

270	271	271	271	271	271	271	272	272	272	272	272	272	272	272	273	273	273	273	273	273	273	273	273	273
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AZIMUTH	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355
OFF-AXIS	22.1	22.2	22.5	22.9	23.3	23.7	24.2	24.7	25.2	25.6	26.1	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.1	30.7	31.4	32.1	32.8	33.5
MGR. ELEV.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MGR. CORR.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ANT. GAIN	-6.0	-7.4	-8.1	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
COORDINATION DISTANCE (KM)																								

MODE 1

0.0 DB

636	590	581	553	458	513	426	461	453	476	502	500	488	346	343	343	343	343	343	343	343	343	343	343	343
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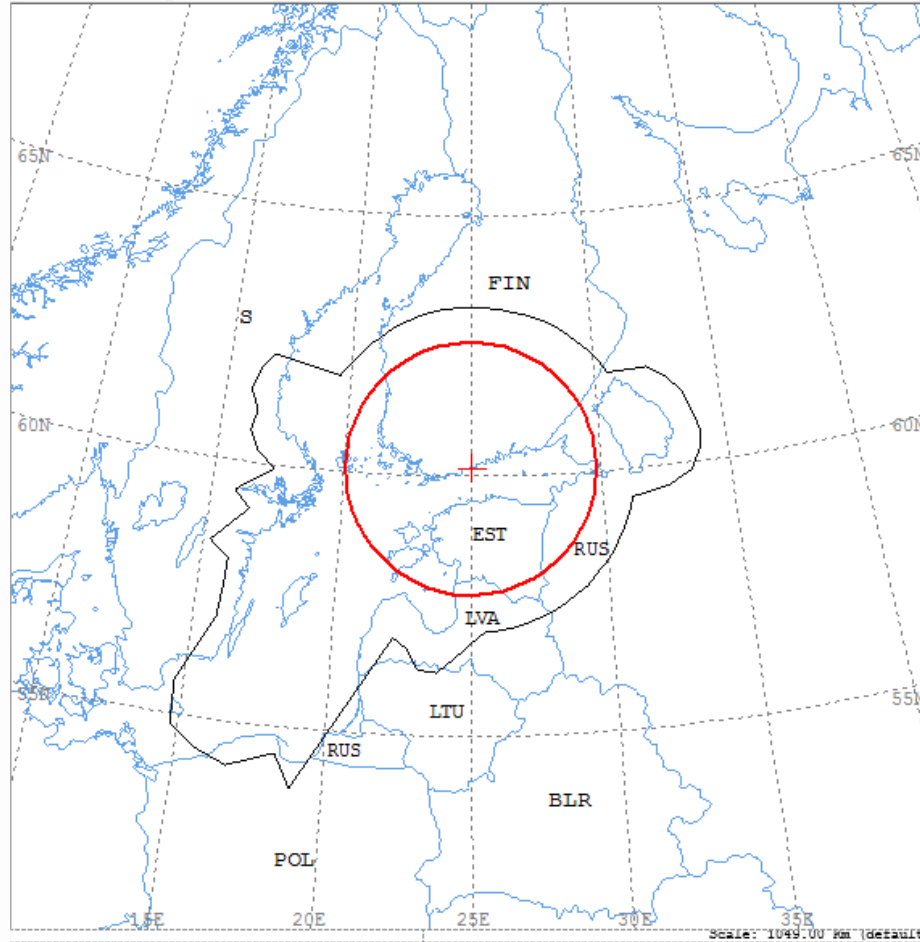
MODE 2

273	273	273	273	273	273	272	272	272	272	272	272	271	271	271	271	271	270	270	270	270	270	269	269	269
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PROBABLY AFFECTED COUNTRIES: DNK EST LTU LVA POL RUS S



Contours





Affected Administrations



ANALYSIS DATE AND TIME: 2016-12-15 12:43:19
 VERSION: 2.5.0.0Appendix / /Flt-3.2.0.0/Frm-3.3.0.0/Clc-3.1.0.0/Exp-1.2.0.0/SNS-3.1.0.0/APTF-3.1.0.0/Ref-3.2.0.1

Diagram 1: 2.1_TABLE8. RECEIVING GSO ES in FIXED-SATELLITE SERVICE W.R.T. TRANSMITTING TERRESTRIAL STATIONS. TS: fixed, mobile

NOTICE ID: 1 EARTH STATION NAME: HELSINKI TEHTAANKATU EARTH STATION POSITION: 024E571360N0931 PHASE: D
 ADM/GEO_AREA: FIN/FIN RAIN CLIMATICAL_ZONE: E
 SATELLITE_NAME: EXPRESS-3 SATELLITE_ORBITAL_POSITION: -11.00 DEG
 ANTENNA_AZIMUTH: 219.90 DEG ANTENNA_ELEVATION: 15.38 DEG
 FREQUENCY_BAND: 3940.7600-3942.7600 MHZ ASSIGNED_FREQUENCY: 3941.76 MHZ PERCENTAGE_OF_TIME: 0.0017 %
 MAXIMUM_ANTENNA_GAIN: 34.30 DBI MAXIMUM_POWER_DENSITY: - DBW/HZ NOISE_TEMPERATURE: 400.0 K
 ANTENNA_PATTERN: APENST06V01
 2.1_TABLE8 Model: PLM_DUCTING

TRANSMISSION LOSS MODE 1: 198.9 DB (DOES NOT INCLUDE HOR. CORR. AND ANT. GAIN)
 TRANSMISSION LOSS MODE 2: 156.9 DB

AZIMUTH	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115
OFF-AXIS	137.7	142.3	146.7	151.0	155.0	158.7	161.8	163.9	164.6	163.8	161.7	158.6	154.9	150.8	146.5	142.1	137.5	132.9	128.2	123.5	118.7	114.0	109.2	104.4
HOR.ELEV.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HOR.CORR.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ANT.GAIN	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
COORDINATION DISTANCE (KM)																								
MODE 1																								
0.0 DB	343	343	343	343	348	349	351	351	351	355	355	355	435	462	483	491	498	495	477	428	354	354	354	354
MODE 2																								
0.0 DEG	269	269	269	269	269	268	268	268	268	268	268	268	269	269	269	269	269	269	269	269	270	270	270	270

AZIMUTH	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235
OFF-AXIS	99.5	94.7	89.9	85.1	80.3	75.5	70.7	65.9	61.1	56.3	51.6	46.9	42.3	37.7	33.3	29.0	25.0	21.3	18.2	16.1	15.4	16.2	18.3	21.4
HOR.ELEV.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HOR.CORR.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ANT.GAIN	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-9.1	-7.6	-5.9	-4.2	-2.5	-1.2	-0.7	-1.2	-2.6	-4.3
COORDINATION DISTANCE (KM)																								
MODE 1																								
0.0 DB	354	354	354	354	354	354	354	354	354	354	354	354	375	408	446	448	412	401	791	744	828	844	849	785
MODE 2																								
0.0 DEG	270	271	271	271	271	271	272	272	272	272	272	272	273	273	273	273	273	273	273	273	273	273	273	273

AZIMUTH	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355
OFF-AXIS	25.1	29.2	33.5	37.9	42.5	47.1	51.8	56.5	61.3	66.0	70.8	75.6	80.5	85.3	90.1	94.9	99.7	104.5	109.3	114.1	118.9	123.7	128.4	133.1
HOR.ELEV.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HOR.CORR.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ANT.GAIN	-6.0	-7.6	-9.1	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
COORDINATION DISTANCE (KM)																								
MODE 1																								
0.0 DB	636	590	561	583	488	513	426	461	483	476	502	500	488	346	343	343	343	343	343	343	343	343	343	343
MODE 2																								
0.0 DEG	273	273	273	273	273	272	272	272	272	272	272	271	271	271	271	271	270	270	270	270	270	269	269	269

PROBABLY AFFECTED COUNTRIES: DNK EST LTU LVA POL RUS S

- This is the list of ADM to forward your coordination request



Contacting Affected Administrations



- **Cover Letter**

- **Email attachment containing:**
 - ESName.mdb (the file we just captured)
 - Coordination contour diagrams generated using AP7 software
 - Any other attachments or notes in Word or PDF format



Exercise:
**Studying Scenarios Coordination Contours
Around Earth Stations
Using GIBC**



Change Notice Type



SpaceCapture V8

File Edit Tools View Window Help

CR/NOTIF API RAST PLAN RS4

Specific Earth Station Notice:1

Notice	Station	Beam	Attachments
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Notice Id: 1 AP4/II and AP4/III (Appendix 4 - Annex 2A) 15.12.2016 Status 01

Notice submitted under:

No. 9.6 Coordination **No. 11.2 Notification** First Notification Resubmission

No. 9.11A Applies Bands 21.4 to 22 GHz Bands 21.4 to 22 GHz Special Procedure

No. 9.7A Specific Receive GSO FSS Earth stn Coordination

No. 9.17 Earth Station Coordination amongst Administrations

Date: DD.MM.YY 15.12.2016 Administration Serial Nbr []

A1f1. Notifying Administration FIN A1f2. Notice submitted on behalf of these administrations. [] +

A1f3. Intergovernmental Satellite System [] x

Notice intended for:

Addition Modification Suppression

BR Identification No. of Station to be modified/suppressed []

Type of Satellite Network or Earth Station:

GeoStationary Satellite Network **Specific Earth Station** Typical Earth Station

NonGeoStationary Satellite Network



Update Coordination Agreements



SpaceCapture V8

File Edit Tools View Window Help

CR/NOTIF API RAST PLAN RS49/55

Specific Earth Station Notice:1

Notice	Station	Beam	Group	Emissions	Frequencies
Coordination	Special Section	Attachments			

Notice Id: 1 Adm: FIN Station Name: HELSINKI TEHTAANKATU EAnt Id: ZER R Group Id: 1

A5/A6. Coordinated Obtained or Agreement Requested												
Provision	Status	Adm/Org	Adm/Org	Adm/Org	Adm/Org	Adm/Org	Adm/Org	Adm/Org	Adm/Org	Adm/Org	Adm/Org	Adm/Org
9.17	Obtain	DNK/	EST/	LTU/	LVA/	POL/	RUS/	S/				

To apply coordination to other groups, select the beam or notice option.

Apply to current group only Apply to all groups in this beam Apply to all groups in this notice



Enter Date of Bringing into Use



SpaceCapture V8

File Edit Tools View Window Help

CR/NOTIF API RAST PLAN RS49/552

Specific Earth Station Notice:1

Coordination Notice | Special Section Station | Attachments Beam | **Group** | Emissions | Frequencies

Notice: 1 Station Name: HELSINKI TEHTAANKATU EAnt Id: ZER R Group Id: 1 Split Grp Id:

3. Observed Frequencies and Related Characteristics

Add Mod Sup of the group BR Identification of the Group to be modified/suppressed Page No. BR Data

Characteristics Common to a Group of Frequencies **General Characteristics**

A2a. Date Bringing into use
01.12.2017

A3a. Operating Administration or Agency
029 ... EMBASSY OF RUSSIA, HELSINKI

A3b. Responsible Administration
A ... FINNISH COMMUNICATIONS REGULATORY AUTHORITY

To apply this information to other groups, select the beam or notice option.

Apply to current group only Apply to all groups in this beam Apply to all groups in this notice



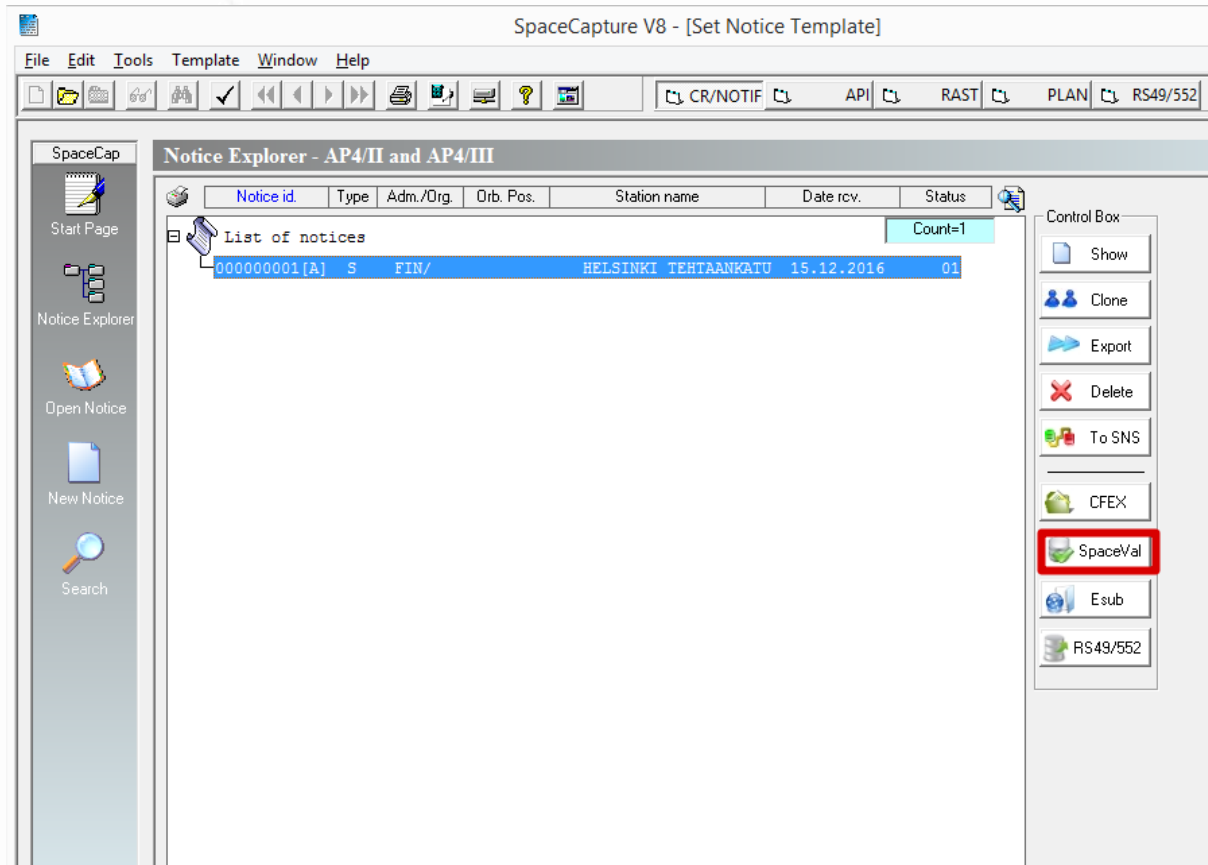
Before submitting the notification



- **Check the following:**
 - Associated space station **must be already notified**
 - Provide the correct name used in BR databases
 - Check also the beam names/ if the frequency bands are covered by the bands used by the space station
- **Use Spacecap to convert the notice from No. 9.17 to No. 11.2**
- **Use Spacecap to update the status of coordination of the earth station**
- **Run Spaceval to ensure that there are no fatal errors**



Launch SpaceVal



- **Mandatory prior to submitting to BR**



Validation Results



SNS Validation Errors

Rule Report First Prev Next Last Space Rules Earth Rules Plan Rules Items Summary Fatal Export

Validation Report for 1 User SINANIS created on 15.12.2016 12:56:47 with SpaceVal 8.0
C:\BR_SOFT\DATA\SPACECAP_V8.MDB
Ntc ID: 1 Adm: FIN Stn name: EXPRESS-3 Action:A Status:01 D_RCV: 15.12.2016

Fatal Errors: Warnings:

Beam	E/R	Grp id	Table	Field	Value	Row no	Val err	Rule	Severit	Ap4_Ref	Text
											VALIDATION COMPLETED; v8.0; NO ERRORS FOUND

- No fatal errors



Common Errors



- Space station name, beam name, frequency band **do not correspond** to those of the Space Station
- Missing **horizon elevation angle**
- Missing **minimum angle of elevation**
- Missing **coordination area diagram**
- Missing **antenna diameters** when required
- Missing **antenna radiation patterns**
- Missing **coordination agreements**



Common Receivability Issues



- Frequencies of S/S should match

BR Space Query and Extract System - [QuickQuery Result for Network(s): 97500286]

File View Window Help

List of Unique Frequencies Within Network for all Beams (total count: 54)
Network ID: 97500286 Adm: RUS Satellite name: EXPRESS-3 Orbital Pos: -11.00°

Frequency (MHz)	BandWidth (kHz)	Minimum of Band (MHz)	Maximum of Band (MHz)	Class(es) of Stn	Beam	Beam	Beam
3425.00000	36000	3407.000000	3443.000000	EC	E/OGE	E/SER	E/ZER
3475.00000	36000	3457.000000	3493.000000	EC	E/OGE	E/SER	E/ZER
3525.00000	36000	3507.000000	3543.000000	EC	E/OGE	E/SER	E/ZER
3575.00000	36000	3557.000000	3593.000000	EC	E/OGE	E/SER	E/ZER
3625.00000	36000	3607.000000	3643.000000	EC	E/OGE	E/SER	E/ZER
3675.00000	36000	3657.000000	3693.000000	EC	E/OGE	E/SER	E/ZER
3725.00000	36000	3707.000000	3743.000000	EC	E/OGE	E/SER	E/ZER
3775.00000	36000	3757.000000	3793.000000	EC	E/OGE	E/SER	E/ZER
3825.00000	36000	3807.000000	3843.000000	EC	E/OGE	E/SER	E/ZER
3875.00000	36000	3857.000000	3893.000000	EC	E/OGE	E/SER	E/ZER
3925.00000	36000	3907.000000	3943.000000	EC	E/OGE	E/SER	E/ZER
3975.00000	36000	3957.000000	3993.000000	EC	E/OGE	E/SER	E/ZER
4025.00000	36000	4007.000000	4043.000000	EC	E/OGE	E/SER	E/ZER
4075.00000	36000	4057.000000	4093.000000	EC	E/OGE	E/SER	E/ZER
4125.00000	36000	4107.000000	4143.000000	EC	E/OGE	E/SER	E/ZER
4175.00000	36000	4157.000000	4193.000000	EC	E/OGE	E/SER	E/ZER

- Beam names of E/S should match those of the S/S in the opposite direction



Related Notification Publications



Part I-S

- When notice is found to be complete, it will be published in Part I-S, which will constitute the acknowledgement to the notifying administration of receipt of its notice (No.11.28).

Part II-S

- Assignments, after detailed technical and regulatory examination, that are found to be favourable will be published in a Part II-S and recorded in the MIFR.

Part III-S

- Assignments, after detailed technical and regulatory examination, that are found to be unfavourable will be published in a Part III-S.



Reasons for unfavorable findings

Part III-S



Notes for return of notices for earth station

Provision	Examples of paragraphs	Resubmission Within 6 months
<p>A N - X/9.17(X)</p>	<p>With respect to the frequency assignment groups Nos. (...) of your earth station (...), it is noted that the <u>coordination procedure under No. 9.17 has not been shown as completed with the Administrations of (...) since the coordination area of your earth station includes the territories of those Administrations</u> (see coordination contours attached). Thus, an unfavorable finding with respect to No. 11.32 has been reached and the notice in question is being returned to you in conformity with No. 11.37.</p> <p>Should the notice <u>be resubmitted with the indication that coordination has been successfully completed with the Administration(s)</u> mentioned above, a favorable finding might result.</p> <p>However, these being frequency assignments for reception, your Administration may be prepared to accept the interference resulting from existing and future terrestrial stations of the countries concerned. In this event, should your Administration resubmit the notice concerned and insist upon its reconsideration, the assignment will be recorded in the Master Register; symbol "H" will be inserted in Column 13B2 as well as AP5 PARA 6E(III) in the column reserved for coordination information.</p>	<p>Yes</p>
<p>A N - X/9.7(X)</p> <p>No SS (subject to coord.)</p>	<p>With regard to the frequency assignment groups Nos. (...) of your earth station (...), it is noted that the <u>corresponding frequency assignments of the associated space station (...) have not yet been communicated to the Radiocommunication Bureau</u> for recording. Thus, these frequency assignments have been given an <u>unfavourable</u> finding with respect to No. 11.32 (see paragraph 2.1.2.1 of the Rules of Procedure relating to No. 11.32) and the notice in question is being returned to you in conformity with No. 11.37.</p> <p>Once the corresponding assignments of the associated space station have been notified and recorded in the Master Register, it will be possible to examine again your earth station notice.</p>	<p>Yes</p>
<p>A N - X/9.7(X)</p> <p>Outside SA</p>	<p>With respect to the frequency assignments groups Nos. (...) of your earth station (...), it is noted that the <u>station is outside the service area of the transmitting/receiving beam (...) of the associated space station (...)</u>. Consequently, your earth station frequency assignments have been given an unfavorable finding with respect to No. 11.32 (see paragraph 2.1.3 of the Rules of Procedure relating to No. 11.32) and the notice in question is being returned to you in conformity with No. 11.37.</p>	<p>Yes</p>
<p>N</p> <p>X/ROP RCV4.4</p>	<p>With regard to the frequency assignments groups Nos. (...) of your earth station (...), it is noted that the <u>associated space station (...) does not have any valid publication in the Radiocommunication Bureau</u>.</p> <p>As stated in paragraph 2.1.2.1 of Rules of Procedure relating to No. 11.32, starting from the principle that the leading element of a space network is the space station and that it would be misleading to record in the Master Register earth stations for which a space station (network) is not recorded, the Radio Regulation Board decided that an earth station cannot be recorded in the Master Register before its associated space station.</p> <p>In view of the above, according to Rules of Procedure, paragraph 4.4 of "Rules concerning the <u>Receivability</u> of forms of notice generally applicable to all notified assignments submitted to the Radiocommunication Bureau in application of the Radio Regulatory Procedures relating to space services" the subject notice is not receivable.</p>	<p>Yes</p>



Submission to the Bureau



- **Rename the mdb file to ADM_ESName.itu**
- **Create a zip file ADM_ESName.zip containing**
 - ESName.itu
 - Coordination contour diagrams generated using AP7 software
 - Any other attachments or notes in Word or PDF format

- **Send email with attachment ADM_ESName.itu to BRMAIL@ITU.INT**

- **Send confirmation telefax to BR at +41 22 730 5785 within seven days from the email submission**

Thank you!

Akim Falou-Dine Akim.Falou-Dine@itu.int