



Space Workshop Request for Coordination – Capture and Validation

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Request for Coordination

– Radio Regulations

- Section II of Article 9 : Procedure for effecting coordination
- No.9.30:
 - Requests for coordination made under Nos. 9.7 to 9.14 and 9.21 shall be sent by the requesting administration to the Bureau, together with the appropriate information listed in Appendix 4 to these Regulations.

Request for Coordination

– Actions by the Bureau

- **No.9.34** On receipt of the **complete** information sent under No. **9.30** or No. **9.32** the Bureau shall promptly:
 - **9.35 a)** examine that information with respect to its conformity with No. **11.31**;
 - **9.36 b)** identify in accordance with No. **9.27** any administration with which coordination may need to be effected;
 - **9.37 c)** include their names in the publication under No. **9.38**;
 - **9.38 d)** publish, as appropriate, the complete information in the BR IFIC within four months. Where the Bureau is not in a position to comply with the time-limit referred to above, it shall periodically so inform the administrations, giving the reasons therefor.
 - **9.40 e)** inform the administrations concerned of its actions and communicate the results of its calculations, drawing attention to the relevant BR IFIC.
- **No. 9.40A** If the information is found to be **incomplete**, the Bureau shall immediately seek from the administration concerned any clarification required and information not provided.
 - **See also** §3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9 of Rules of Procedure on Receivability

Request for Coordination

– Information required and format

- Annex 2 of Appendix 4
 - 3 separate columns for requests for coordination
 - Notification or coordination of a geostationary-satellite network
 - Notification or coordination of a non-geostationary-satellite network
 - Note additional requirements for NGSO that are subject to No.9.11A, 22.5C, 22.5D and 22.5F
 - Notification or coordination of an earth station
- Resolution 55
 -shall be submitted in electronic format compatible with the BR electronic notice form capture software (Spacecap)

Request for Coordination

– Common problems

- Missing Confirmation fax
- Some frequency assignments not covered by API
- Regional limitations for some frequency assignments
- Missing diagrams
- Missing antenna diameters when required
- Missing 0 dBi relative gain contours for steerable beams
- Did not supply a statement of commitment and a description of the method required under ROP relating to No.21.16 for steerable beams.

Software for submission

- Software

- Spacecap – for capturing the information
- Spaceval – for validating the information
- Spacequery – for viewing the validation report
- Spacepub – for viewing/printing detailed information
- GIMs – for capturing and viewing graphical information

- Database

- Must be mdb in SNS format for alphanumeric data, and GIMs mdb format for GIMs data

Exercise to capture a request for coordination for a Geostationary satellite network

Data to be captured

- Provision – No.9.6 Coordination
- Notifying administration – CHL
- Type of Satellite Network – Geostationary Satellite network

Data to be captured

- Name of satellite network: ITUSAT
- Nominal Orbital Longitude: 70 ° W
- Longitudinal Tolerance to West: 0.1°
- Longitudinal Tolerance to East: 0.1°
- Inclination Excursion: 0.05°
- Compliance with off-axis power limitations: YES

RECEIVING BEAM KR1 DATA

Maximum Isotropic Gain: 35 dBi

Pointing Accuracy: 0.2°

Antenna Gain Contours Diagram No. 1

Antenna Gain vs Orbit Longitude Diagram No. 2

Beam KR1/R

First Group

- Group Data

Assigned Frequency Bandwidth: 72000 kHz

Class of Station: EC

Nature of Service: CV

Polarization: Vertical

Receiving System Noise Temperature: 500 K

Service Area Number: 1

Service Area Diagram Number: 3

Beam KR1/R First Group

Emissions Data for this Group

Designation of Emission: 70M00G7W--

Maximum Peak Power: 36.4 dBW

Maximum Power Density: -42 dBW/Hz

Minimum Peak Power: -3.5 dBW

Minimum Power Density: -82 dBW/Hz

C/N objective: 7 dB

Beam KR1/R First Group

Frequency Data for this Group

Assigned Frequency:

14.058 GHz

Beam KR1/R

First Group

Associated Earth Station for this Group

Type of Station:	Typical
Associated Earth Station Name:	T1
Class of Station:	TB
Nature of Service:	CV
Maximum Isotropic Gain:	60.4 dBi
Beamwidth:	0.16°
Diameter of Antenna:	9m
Antenna Radiation pattern:	REC-580-6

TRANSMITTING BEAM DATA FOR KT1

Maximum Isotropic Gain: 35 dBi

Pointing Accuracy 0.2°

Antenna Gain Contours Diagram No. 4

Beam KT1/E Group Data

First Group

Assigned Frequency Bandwidth:	72000 kHz
Class of Station:	EC
Nature of Service:	CV
Polarization:	Vertical
Maximum Total Peak Power:	21 dBW
Contiguous Bandwidth:	72000 kHz
Service Area Number:	1
Service Area Diagram Number:	5

Beam KT1/E

First Group

General Characteristics of First Group

Operating Agency:

001

Responsible Administration:

A

Special Sections for this group

API/A

1234

Beam KT1/E First Group

Emissions Data for this Group

Designation of Emission:	72M0G7W--
Maximum Peak Power:	21
Maximum Power Density:	-57.4
Minimum Peak Power:	15.4
Minimum Power Density:	-63
C/N objective:	7

Beam KT1/E First Group
Frequency Data for this Group

Assigned Frequency:

12.08 GHz

Beam KT1/E

First Group

Associated Earth Station for this Group

Type of Station:	Typical
Associated Earth Station Name:	R1
Class of Station:	TC
Nature of Service:	CV
Maximum Isotropic Gain:	32.8 dBi
Beamwidth:	4.1°
Diameter of Antenna:	0.45m
Receiving System Noise Temperature:	120 K
Antenna Radiation pattern:	REC-580-6

Beam KT1/E - Group Data

Second Group

Assigned Frequency Bandwidth:	2000 kHz
Class of Station:	ER
Nature of Service:	CV
Polarization:	Vertical
Maximum Total Peak Power:	-10.5 dBW
Contiguous Bandwidth:	2000 kHz
Service Area Number:	1
Service Area Diagram Number:	5

Beam KT1/E - Emissions Data

Second Group

Designation of Emission:	300KG9X--
Maximum Peak Power:	-10.5 dBW
Maximum Power Density:	-65.2 dBW/Hz
Minimum Peak Power:	-25.5 dBW
Minimum Power Density:	-80.2 dBW/Hz
C/N objective:	10 dB

Beam KT1/E - Frequency Data

Second Group

Assigned Frequency:

11.71 GHz

Beam KT1/E

Second Group

- Associated Earth Station

Type of Station:	Typical
Associated Earth Station Name:	R1
Class of Station:	TR
Nature of Service:	CV
Maximum Isotropic Gain:	32.8 dBi
Beamwidth:	4.1°
Diameter of Antenna:	0.45m
Receiving System Noise Temperature:	120 K
Antenna Radiation pattern:	REC-580-6

Spacecap

- Launch spacecap
 - File -> New database -> create a new database “CRC ITUSAT.mdb”
 - Select “CR/Notif” Tab at the top
 - Select icon “New Notice” on the left
 - Start entering the information

Spacecap

SpaceCapture V7

File Edit Tools View Window Help

CR/NOTIF API RAST PLAN R549/552

GeoStationary Notice:1

Notice Station Beam Strapping Noise Gamma Attachments

Notice Id: 1 AP4/II and AP4/III (Appendix 4 - Annex 2A) 01.11.2012 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.YYYY 06.11.2012 Administration Serial Nbr A

A1f1. Notifying Administration CHL 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

NonGeoStationary Satellite Network Typical Earth Station

More...

Current DB : C:\CRC\CRC ITUSAT.mdb 11:03 15.11.2012

ational
ommunication



GeoStationary Notice: 1

Notice

Station

Beam

Strapping

Noise Gamma

Attachments

Notice Id: 1 Administration: CHL Status: 01 Date: 01.11.2012

A1a. Identity of the Satellite Network ITUSAT

A4a. For GeoStationary Satellites Only

 1. Nominal Orbital Longitude
Degrees

70 W

E/W

2. Longitudinal tolerance (degrees)

a. To West 0.1 b. To East 0.1

2c. Inclination Excursion

0.05 °

 A16a. Commitment to meet off-axis power limitations (applicable bands 12.75-13.25 GHz, 13.75-14.5 GHz and 29.5-30 GHz)
 Yes No N/A

 A17a. Commitment to meet power-flux density limits (applicable bands 1164-1215 MHz)
 Yes No N/A

 A18a. Commitment of aircraft earth station (applicable bands 14-14.5 GHz)
 Yes No N/A

A17b,c,d,e Power Flux Density

 $\text{dB} \left(\frac{\text{W}}{\text{m}^2} \right)$

List of Available Beams

 Beam KR1

 Beam KT1



GeoStationary Notice: 1

Attachments

Notice

Station

Beam

Group

Strapping

Noise Gamma

Notice Id:

1

Administration:

CHL

Satellite Network:

ITUSAT



Characteristics of the Beam

B2.

 Receiving Beam

 Transmitting Beam

B1a. Beam Designation:

KR1

Old Beam Designation
(if changed)
 B1b.
Steerable
Beam

 Add
 Mod
 Sup
of the
Beam

 Beam has
Sensors

Antenna Characteristics

B3a1. Maximum
Isotropic Gain
+/- dBi

35

B3d. Pointing
Accuracy
Degrees +/-

0.2

B3b1. Antenna Gain Contours
Diagram. See Attachment No.

1

B3e. Antenna Gain vs Orbit
Longitude Diagram. See
Attachment No.

2

List of Available Groups

Group 1 Page No.

Antenna Radiation Pattern

B3c1. Co-polar

Radiation Pattern Id:

Diagram attached. See
Attachment no.:

Coordination | Special Section | Assoc Earth Station | Assoc Space Station | Strapping | Noise Gamma |
 Attachments |
 Notice | Station | Beam | **Group** | Emissions | Frequencies |

Notice: Satellite Network: Beam Id: Group Id: 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

(kHz)

- No Sensors
 Active Sensors
 Passive Sensors

C4a. Cls Stn	C4b. Nat Srv
EC	CV

C6. Polarization

Type

If linear, provide angle

C2c. compliance with No. 4.4 of the Radio Regulations

C5a. Receiving System

Noise Temperature Kelvins

C11a. Service Area as List of Countries or Geographic designations



x

Service Area

Number

Service Area Diagram. See Attachment No.

Remarks

Coordination	Special Section	Assoc Earth Station	Assoc Space Station	Strapping	Noise Gamma
Attachments					
Notice	Station	Beam	Group	Emissions	Frequencies

 Notice: Satellite Network: ITUSAT Beam Id: KR1 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

 A2b. Period of Validity Years

A3a. Operating Administration or Agency

001 ... COMPANIA INTERNACIONAL DE RADIO CHILE, S.A.

A3b. Responsible Administration

A ... SUBSECRETARIA DE TELECOMUNICACIONES

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



Attachments

Notice	Station	Beam	Group	Emissions	Frequencies
Coordination	Special Section	Assoc Earth Station	Assoc Space Station	Strapping	Noise Gamma

Notice Id: Adm: Satellite Network: Beam Id: Group Id:

Information Common to List of Groups in this Beam

A13.

Special Section AR11/A (RR1042)	<input type="text" value="1234"/>
Special Section AR11/C (RR1060)	<input type="text"/>
Special Section ART.14 (RR1610)	<input type="text"/>
Special Section API/A (9.1)	<input type="text"/>
Special Section CR/C (9.6)	<input type="text"/>
Special Section AP30-30A/F/C	<input type="text"/>

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

Attachments	Station	Beam	Group	Emissions	Frequencies
Notice	Special Section	Assoc Earth Station	Assoc Space Station	Strapping	Noise Gamma
Coordination					

Notice Id: Adm: Satellite Network: Beam Id: Group Id:

C10b2. Type of Station Typical Specific

C10b1. Associated Earth Station Name

of the station
 Add
 Mod
 Sup

Old Station Name (if changed)

C10d1. Cls Stn	C10d2. Nat Srv
▶ TC	CV

C10d. Antenna Characteristics

3. Maximum Isotropic Gain: +/- dBd
 4. Beamwidth: Degrees
 7. Diameter: Meters
 9. Dgso: Meters

C8g1. Max Aggregate Power: dBW
 C8g2. Aggregate Bandwidth: kHz
 C8g3. Bandwith Corresponds to Aggr Bandwidth

Antenna Radiation Pattern

C10d5a1. Co-polar Radiation Pattern Id:
[REC-580-6 ==> APEREC015V01](#)
 C10d5a2. Diagram attached. See Attachment no.:
 or diagram no in Gims database:

SpaceCap

-  Start Page
-  Notice Explorer
-  Open Notice
-  New Notice
-  Search

Notice Explorer - AP4/II and AP4/III

Notice id.	Type	Adm./Org.	Orb. Pos.	Station name	Date rcv.	Status
List of notices Count=1						
000000001[A]	G	CHL/	70W	ITUSAT	06.11.2012	01
<ul style="list-style-type: none"> Beam id: KR1 <ul style="list-style-type: none"> Group id: 1 Beam id: KT1 <ul style="list-style-type: none"> Group id: 2 Group id: 3 						

- Control Box
-  Show
 -  Clone
 -  Export
 -  Delete
 -  To SNS
 -  CFEX
 -  SpaceVal
 -  Esub

SpaceCap

- Start Page
- Notice Explorer
- Open Notice
- New Notice
- Search

Notice Explorer - AP4/II and AP4/III

Notice id.	Type	Adm./Org.	Drb. Pos.	Station name	Date rcv.	Status
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List of notices Count=1

000000001[A]	G	CHL/	70W	ITUSAT	05.11.2012	01
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- Beam id: KR1
 - Group id: 1
- Beam id: KT1
 - Group id: 2
 - Group id: 3

- Open Notice
- Show Selected Entity
- View History
- Print Notice
- Export Notice(s)
- Clone
- Delete
- Renumber Notice Id
- Modify Notice Action Code
- Modify Date of Receipt
- Paginate Groups
- Sort Frequencies
- Structure Groups
- Delete Notice and Grp Links
- Create Regulatory Dates
- Cost Recovery Analysis (Dec 482 C2008)
- Cost Recovery Analysis (Use Findings)
- Run SR5Fixdb for notice

- Control Box
- Show
 - Clone
 - Export
 - Delete
 - To SNS
 - CFEX
 - SpaceVal
 - Esub

SpaceCapture V7 - [Set Notice Template]

File Edit Tools Template Window Help

CR/NOTIF API RAST PLAN RS49/552

SpaceCap

Start Page

Notice Explorer

Open Notice

New Notice

Search

Notice Explorer - AP4/II and AP4/III

Notice id.	Type	Adm./Org.	Orb. Pos.	Station name	Date rcv.	Status
0000						

Cost Recovery Analysis

Cost Recovery Analysis (Dec 482 C2008)

Analysis run at: 11:16:26 on 15.11.2012

Notice id: 1

Satellite Network: ITUSAT

Services: EC,ER

Provisions: 9.7,9.11A,AP30#7.1

Category: C2

Cost Recovery Units: 3

Estimate of Cost Recovery Fee

Start Fee: CHF 9'620 (< 100 units)

Current DB : C:\CRC\CRC ITUSAT.mdb 11:16 15.11.2012

Spaceval

- Launch spaceval
 - Click on Open
 - Browse and select the database that you have captured
 - Select notice ID
 - Click on Validate
 - Click on Report
 - launches Spacequery

Space Validation 7.0 (12/11/2012)

Operator Id: MORETS

Database Info

Location:

Notice Id

Error Message Level Selection

Show fatal messages only Show all messages

Validation Options

Straps not provided - optional under Appendix 4 (WRC-2007)

Check frequency overlap using assigned frequency bandwidth

Cross validation with Gims mdb file

Gims database:

Click on the <Explorer> button to select and open a database

Open

Validate

Report

Help

Exit

Spacequery

– validation report (with errors)

QuickQuery Result for Network(s): 1

Validation Report for Network: 1 On: 22.11.2012 @ 15:13:16 By Operator: L00 (crc_itusat_with errors.mdb)

Network ID: 1 Adm: CHL Satellite name: ITUSAT Orbital Pos: -70.00°

Applicability code(s): axis

Validation Message Counts: Total: 9, Fatais: 8, Warnings: 0; Message Option: All

Beam Name	E / R	Group ID	Row No	Item Number	Rule ID	Severity Code	Table Name	Field Name	Field Value	Validation Error Message
				0		A				VALIDATION COMPLETED; v7.0; ERRORS F/W: 8/0
KR1	R	1		604	1	F	grp	prd_valid		Value missing
KT1	E	2		604	1	F	grp	prd_valid		Value missing
KT1	E	3		604	1	F	grp	prd_valid		Value missing
KR1	R	1	1	669	4.1	F	emiss	design_emi	70M00G7W-	Invalid the fifth character
KR1	R	1	1	669	4.2	F	emiss	design_emi	70M00G7W-	Invalid the sixth character
KR1	R	1	1	669	4.3	F	emiss	design_emi	70M00G7W-	Invalid the seventh character
KR1	R	1	1	706	3	F	e_srvcls	stn_cls	TB	Symbol not valid for satellite group class-of-station
KR1	R	1	1	706	4	F	e_srvcls	stn_cls	TB	Symbol missing for satellite group class-of-station (EC)

Corrections of fatal errors

- Period of validity
 - Group tab -> General characteristics tab
 - For the field Period of Validity, enter “15” years
 - Select “*apply to all groups in the notice*”
- Designation of Emissions
 - Emission tab
 - Error in designation of emission 70M00G7W
 - Change to 70M0G7W (refer to Appendix 1 for details on symbols)
- Earth Station class of station
 - Associated earth station tab
 - Earth station class of station must correspond to Space station class of station
 - Change TB to TC

Spacequery

– validation report (no errors)

BR Space Query and Extract System >>>> 7.0 BETA <<<< - [QuickQuery Result for Network(s): 1]

File View Window Help

Validation Report for Network: 1 On: 14.11.2012 @ 16:56:09 By Operator: LOO (chl_itusat_test v7 clean.mdb)

Network ID: 1 Adm: CHL Satellite name: ITUSAT Orbital Pos: -70.00°

Validation Message Counts: Total: 1, FataIs: 0, Warnings: 0; Message Option: All

Beam Name	E / R	Group ID	Row No	Item Number	Rule ID	Severity Code	Table Name	Field Name	Field Value	Validation Error Message
				0		I				VALIDATION COMPLETED; v7.0; NO ERRORS FOUND

SRS: INGRES Production

Spaceval

- Cross validation with Gims mdb

Space Validation 7.0 (12/11/2012)

Operator Id: MORETS

Database Info

Location:

Notice Id

Error Message Level Selection

Show fatal messages only Show all messages

Validation Options

Straps not provided - optional under Appendix 4 (WRC-2007)

Check frequency overlap using assigned frequency bandwidth

Cross validation with Gims mdb file

Gims database:

Open

Validate

Report

Help

Exit

Click on the <Explorer> button to select and open a database

Spacepub

The screenshot displays the SpacePub v7.0.0 application window. The title bar reads "Publications" and includes standard window controls. The menu bar contains "File", "Tools", and "Help". The toolbar features icons for file operations and a search function. A navigation bar at the top shows tabs for "API", "CR / NOTIF" (selected), "PLAN", "RASTRO", and "RES49 / RES552". The main workspace is titled "Create Documents" and contains a dropdown menu for document selection, currently showing "000000001". To the right, the "Print Selection" panel is active, showing options for "TSUM" (selected) with a sub-menu set to "External". Other options include "Filter Beams/Freq.", "Legend", "Graphics", "Coord. info.", "Cost Recovery" (checked), "Line spacing", and "Partial merge". Below this, the "IFIC DVD-ROM" section offers radio button options for "Network data in transaction (CR/C)" and "Last Special Section published", each with associated checkboxes for "Legend" and "Remarks and graphics". The status bar at the bottom indicates the "Current Database: C:\CRC\CRC ITUSAT.mdb" and includes a "Create Doc." button with a gear icon. The bottom-most status bar shows "F1 for Help.", "Format A4", "NUM", "CAPS", "16:40", and "15.11.2012".

Publications

File Tools Help

API CR / NOTIF PLAN RASTRO RES49 / RES552

SpacePub v7.0.0

Publications

Create Documents

AP4/II & AP4/III

000000001

Print Selection

- TSUM External Filter Beams/Freq.
- Legend Cost Recovery
- Graphics Line spacing
- Coord. info. Partial merge

IFIC DVD-ROM

- Network data in transaction (CR/C)
 - Legend
- Last Special Section published Legend Remarks and graphics

Current Database: C:\CRC\CRC ITUSAT.mdb

Create Doc.

Graphics
ITU only

F1 for Help. Format A4 NUM CAPS 16:40 15.11.2012

Submission to Bureau

- Create a zip file ITUSAT.zip containing
 - CRC ITUSAT.mdb
 - ITUSAT GIMS.mdb
 - Any other attachments or notes in Word or PDF format
- Change the file extension from “.zip” to “.itu”
- Send email with attachment ITUSAT.itu to BRMAIL@ITU.INT
- Send confirmation telefax to BR at +41 22 7305785

Questions?

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BR/SSD/SPR