



30<sup>TH</sup> WORLD RADIOCOMMUNICATION SEMINAR

24 – 28 October 2022

Geneva, Switzerland

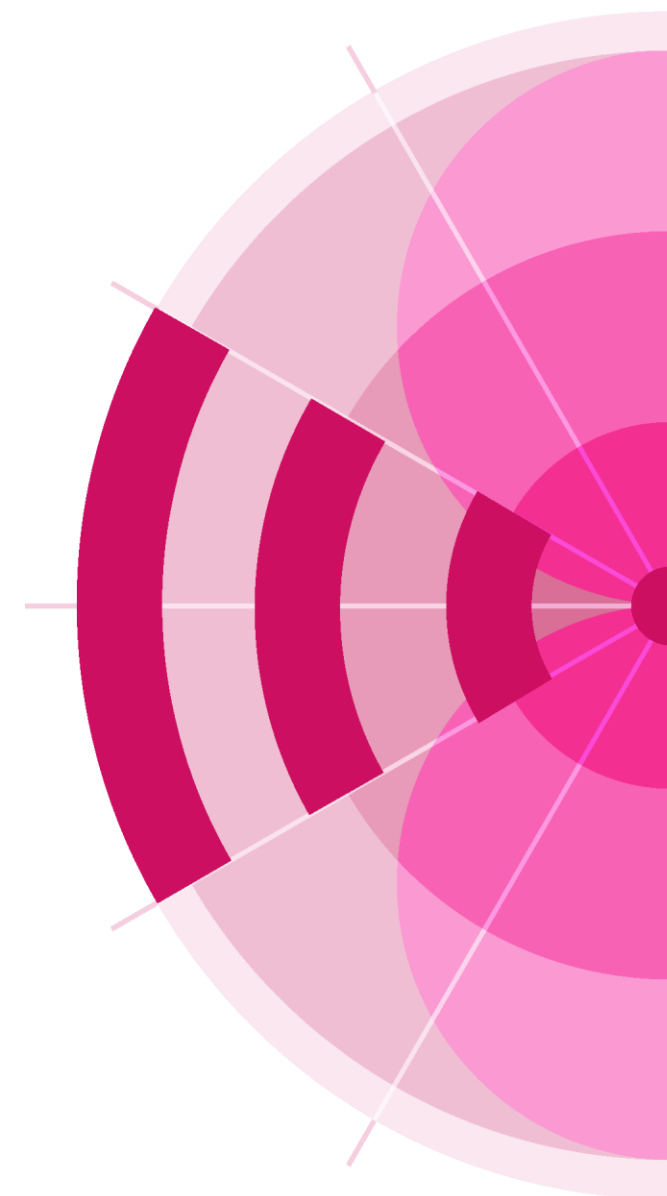
# ITU SpaceExplorer

Pilot application to explore satellite filings data

By Veronique Glaude, BR Space Services Department

[www.itu.int/go/wrs-22](http://www.itu.int/go/wrs-22)

#ITUWRS



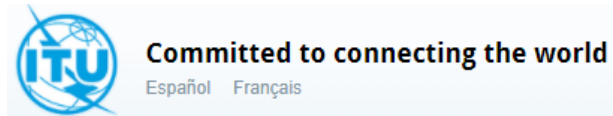
## BR Space Data Exploration Experience

**From**



**New BR project:**

**ITU SpaceExplorer**



Space Network List (SNL)



**BR project:**

# ITU SpaceExplorer

- **Integrated exploration**  
a new user experience of BR Space Data
- **Data visualization**  
with the dashboard approach: a quick analysis to extract information from data
- **Continuity of use**  
key functionalities are maintained and new ones added
- **Personal space available**  
save explorations on demand and reuse them

# ITU SpaceExplorer – Phase 1



Welcome Page



List of satellite filings on BR publications (in RED)



List of satellite filings on SNS data (in BLUE )



**New! Dashboard** of a satellite network



**New! *My Space Explorer***

# Access ITU SpaceExplorer Pilot

<https://www.itu.int/go/ITUSpaceExplorer>

On the welcome page,  
you can already make choices to access  
the information quickly

The screenshot shows the ITU Space Explorer website. At the top, there is a navigation bar with the ITU logo and links for Space Explorer, Networks Explorer, Special Explorer, Temporary Explorer, My Space Explorer, and Query Builder. On the right side of the navigation bar, there are links for BETA, FEEDBACK, and Sign In. Below the navigation bar, the page title is "Home > Networks Explorer" and the version information is "Up to latest BR IFIC No 2981 / 04.10.2022". The main content area includes a description of the ITU Space Explorer, a disclaimer, and an "Explore by" section. The "Explore by" section has two tabs: "Space Network System (SNS)" and "BR Space Publications". Under the "SNS" tab, there are three dropdown menus for "Notifying Administration", "Network Organization", and "Satellite Network Name". Below these are four search buttons: "Search All Space Stations", "Search Earth Stations", "Search Radio Astronomy", and "Search Space Stations In Latest BR IFIC". To the right of the search buttons, there is a section for "Proceed directly with active SNS Notice ID" with an input field for "SNS Notice ID" and a "GO" button. The footer contains links for Privacy Notice, Support, and Help, along with the version information and copyright notice.

Choose to query:  
the active data  
in the “SNS database”  
OR the history of  
publications  
in the “BR Space  
Publications”

Before starting  
exploring!



# Lists in RED BR Space Publications

The exploration in list  
format with criteria  
on the history of publications

4 filters types  
options -  
expandable

The screenshot shows the ITU Space Explorer interface. The top navigation bar includes the ITU logo and links for Space Explorer, Networks Explorer, Special Explorer, Temporary Explorer, My Space Explorer, and Query Builder. A dark red button in the top right corner contains the text "BETA | FEEDBACK" and icons for help and sign in.

The main content area is titled "Home > Networks Explorer > List View" and includes a "Legend" link. On the right side, it indicates "Up to latest BR IFIC No 2981 / 04.10.2022".

The interface is divided into two main sections: a left sidebar for filters and a right main table for results.

**Filters (Identity section):**

- Explore Space Networks or Systems by: Space Network System (SNS) **BR Space Publications**
- Satellite Network: Notifying Administration: S (Sweden)
- Network Organization
- Satellite Network Name
- Radio Status: All, **Non-Plan Only**, Plan Only

**Publications section:**

- Type of Satellite Network
- Regulatory Process

**Table of Results:**

Details	SNS Notice ID	Notifying Adm / Network Org	Satellite Network Name	GSO Location East (+) or West (-) Degrees	Notice Date of Receipt	BR IFIC Publication
<input checked="" type="checkbox"/>	121520021	S	SIRIUS-5E-11	5.00	29.01.2021	CR/C/5485
<input checked="" type="checkbox"/>	120545269	S	MIST		16.11.2020	API/B/1633
<input checked="" type="checkbox"/>	116540580	S	SMMSAT-7R	159.00	19.05.2016	API/A/11738
<input checked="" type="checkbox"/>	116520450	S	SMMSAT-7R	159.00	27.12.2016	CR/C/4311
<input checked="" type="checkbox"/>	121590062	S	SMMSAT-7R	159.00	14.09.2021	RES49/2398
<input checked="" type="checkbox"/>	121500187	S	SMMSAT-7R	159.00	14.09.2021	PART I-S
<input checked="" type="checkbox"/>	121520021	S	SIRIUS-5E-11	5.00	29.01.2021	CR/E/2383
<input checked="" type="checkbox"/>	120512086	S	BEYOND-ATLAS-1		06.02.2020	PART III-S
<input checked="" type="checkbox"/>	120500028	S	BEYOND-ATLAS-1		06.02.2020	PART II-S
<input checked="" type="checkbox"/>	121500187	S	SMMSAT-7R	159.00	14.09.2021	PART III-S

At the bottom of the table, there are navigation controls: "Results: 493", "Rows per page: 10", "Results: 481-490 of 493", and "Page: 49 / 50".



# List in BLUE Space Network System (SNS) databases

The exploration in list  
format with criteria  
on the “active” networks

5 filters types  
options -  
expandable

Home > Networks Explorer > List View Up to latest BR IFIC No 2981 / 04.10.2022

**Identity** Results: 54

Explore Space Networks or Systems by

Space Network System (SNS) BR Space Publications

Satellite Network

Notifying Administration  
S (Sweden) ▼

Network Organization ▼

Satellite Network Name ▼

All Non-Plan Only Plan Only

**Type of Satellite Network** ▼

**Frequency Characteristics** ▼

**Regulatory Process** ▼

**Regulatory Dates** ▼

Details	SNS Notice ID	Notifying Adm / Network Org	Satellite Network Name	GSO Location East (+) or West (-) Degrees	Notice Type	Notification Reason	Provision
<input checked="" type="checkbox"/>	116523107	S	SMMSAT-7R_1	159.00	G	C	9.6
<input checked="" type="checkbox"/>	116523108	S	SMMSAT-BR_1	165.00	G	C	9.6
<input checked="" type="checkbox"/>	117545307	S / NOT	MATS		N	A	9.1/A
<input checked="" type="checkbox"/>	117500254	S	SEAM		N	N	11.2
<input checked="" type="checkbox"/>	118520315	S	SIRIUS-16W-1	-16.00	G	C	9.6
<input checked="" type="checkbox"/>	118520377	S	SIRIUS-5E-9	5.00	G	C	9.6
<input checked="" type="checkbox"/>	119545046	S	BEYOND-ATLAS-1		N	A	9.1/A
<input checked="" type="checkbox"/>	120500028	S	BEYOND-ATLAS-1		N	N	11.2
<input checked="" type="checkbox"/>	120520082	S	SIRIUS-5E-10	5.00	G	C	9.6
<input checked="" type="checkbox"/>	120545145	S	BIUSAT		N	A	9.1/A

Results: 54 Rows per page: 10 Results: 41-50 of 54 Page: 5 / 6





**NEW!**



Click “details” to view the **Dashboard of one network**

Home > Networks Explorer > List View

ITU | Space Explorer | Networks Explorer | Special Explorer | Temporary Explorer | My Space Explorer | Query Builder

BETA | FEEDBACK | ? | ? | Sign In

Up to latest BR IFIC No 2981 / 04.10.2022

Legend

Results: 493

Details	SNS Notice ID	Notifying Adm / Network Org	Satellite Network Name
	121520021	S	SIRIUS-5E-11
	120545269	S	MIST
	116540580	S	SMMSAT-7R
	116520450	S	SMMSAT-7R

Results: 493 | Rows per page: 10 | Results: 481-490 of 493 | Page: 49 / 50



# NEW in ITU SpaceExplorer!

Access to the satellite network data through a concept of dashboard



Home > SMMSAT-7R Up to latest BR IFIC No Z981 / 04.10.2022

### Identity

Satellite Network Name: SMMSAT-7R

Satellite Network Previous Name: —

Administration: S (Sweden)

Network Organization: —

Space Plan/Non-Plan bands: Non-Plan

Type of Satellite Network: Geostationary (159 East)

### Regulatory Status Tracking

Active Status: Active

In Master Register (MIFR): No

Brought into use: No

Suspension of use: No

Date of Receipt of First Submission: 19.05.2016

Earliest Regulatory Date Limit to Bring Into Use: 19.05.2023

BR IFIC Date of Latest Publication: 08.02.2022

### Publications in BR IFIC Space

Earliest Publication Date: 07.06.2016

Latest Publication Date: 08.02.2022

<b>2</b> API	<b>5</b> COORDINATION
<b>2</b> NOTIFICATION	<b>1</b> OTHER

### Related Notices Information

Notice ID	Provision	Notice Date of Receipt
1.116520450	9.6	27.12.2016

### Network Structure Navigation

	Min	Frequency	Max
Emission (Tx)	7'250 MHz		76'000 MHz
Reception (Rx)	7'900 MHz		86'000 MHz
Inter-Satellite Link (ISL)	7'250 MHz		76'000 MHz

### Overview of Emissions Characteristics

**9**  
SERVICES

### Coordination Requirements & Examination Results

<b>31</b> AFFECTED ADMINISTRATIONS	<b>0</b> UNFAVORABLE FINDINGS
---------------------------------------	----------------------------------

### Due Diligence

Under development: Not applicable

### Associated Stations

<b>165</b> EARTH STATIONS	<b>0</b> SPACE STATIONS
------------------------------	----------------------------

Public 3 cards

TIES account 5 cards

Please Sign In

[LOGIN TIES](#) [LOGIN BR STAFF](#)





# NEW in ITU SpaceExplorer

## Public 3 cards – click for more information

### Identity

Satellite Network Name: SMMSAT-7R

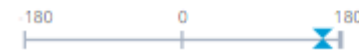
Satellite Network Previous Name: —

Administration: S (Sweden)

Network Organization: —

Space Plan/Non-Plan bands: Non-Plan

Type of Satellite Network: Geostationary (159 East)



### Regulatory Status Tracking

Active Status: Active

In Master Register (MIFR): No

Brought into use: No

Suspension of use: No

Date of Receipt of First Submission: 19.05.2016

Earliest Regulatory Date Limit to Bring Into Use: 19.05.2023

BR IFIC Date of Latest Publication: 08.02.2022

### Publications in BR IFIC Space

Earliest Publication Date: 07.06.2016

Latest Publication Date: 08.02.2022

<b>2</b> API	<b>5</b> COORDINATION
<b>2</b> NOTIFICATION	<b>1</b> OTHER



**ITUWRS**  
GENEVA2022





# NEW in ITU SpaceExplorer

## Public 3 cards – click for more information



Identity

Satellite Network SMMSAT-7R  
Name:

Satellite Name > Identity  
SMMSAT-7R  
Geostationary (159 East)  
S

Export

Satellite Network Name: SMMSAT-7R

Satellite Network Previous Name: —

Administration: S (Sweden)

Network Organization: —

Responsible Administration:

- SWEDISH POST AND TELECOM AGENCY (PTS)  
P.O. BOX 5398  
S-102 49 STOCKHOLM  
TELEFAX +46 8 6785505  
TELEX 054 40777 RADCON S

Operator:

- V3GS COMMUNICATIONS SWEDEN AB

Space Plan/Non-Plan bands: Non-Plan

Type of Satellite Network: Geostationary (159 East)

Regulatory Status Tracking

Active Status: Active

In Master Register (MIFR): No

Brought into use: No

Suspension of use: No

Date of Receipt of First Submission: 19.05.2016

Date limit to bring into use: 19.05.2023

Brought into use: No

Suspension: No

Resumption process: No

In Master Register (MIFR): No

Satellite Name > Regulatory Status Tracking  
SMMSAT-7R  
Geostationary (159 East)  
S

Export

CLOSE

Publications in BR IFIC Space

Satellite Name > Publications in BR IFIC Space  
SMMSAT-7R  
Geostationary (159 East)  
S

Results: 10 Export

SNS Notice ID	Satellite Network Name	Notice Date of Receipt	BR IFIC Publication	BR IFIC Publication Special Section	BR IFIC Publication Revision	BR IFIC/WIC Number	BR IFIC/WIC Date	Link to BR IFIC database
1500187	SMMSAT-7R	14.09.2021	PART III-S			2964	08.02.2022	↗
1500187	SMMSAT-7R	14.09.2021	PART I-S			2958	02.11.2021	↗
1590062	SMMSAT-7R	14.09.2021	RES49	2398		2957	19.10.2021	↗
6540580	SMMSAT-7R	19.05.2016	API/A	11738	M 1	2953	24.08.2021	↗
6520450	SMMSAT-7R	27.12.2016	CR/C	4311	M 2	2953	24.08.2021	↗
6520450	SMMSAT-7R	27.12.2016	CR/D	3411		2862	23.01.2018	↗
6520450	SMMSAT-7R	27.12.2016	CR/E	1458		2861	09.01.2018	↗
6520450	SMMSAT-7R	27.12.2016	CR/C	4311	M 1	2850	25.07.2017	↗
6520450	SMMSAT-7R	27.12.2016	CR/C	4311		2847	13.06.2017	↗
6540580	SMMSAT-7R	19.05.2016	API/A	11738		2821	07.06.2016	↗

CLOSE





# NEW in ITU SpaceExplorer

TIES account 5 cards  
– click for more  
information

Home > SMMSAT-7R

Up to latest BR IFIC No 2981 / 04.10.2022

### Identity

Satellite Network Name: SMMSAT-7R

Satellite Network Previous Name: —

Administration: S (Sweden)

Network Organization: —

Space Plan/Non-Plan bands: Non-Plan

Type of Satellite Network: Geostationary (159 East)

### Regulatory Status Tracking

Active Status: Active

In Master Register (MIFR): No

Brought into use: No

Suspension of use: No

Date of Receipt of First Submission: 19.05.2016

Earliest Regulatory Date Limit to Bring Into Use: 19.05.2023

BR IFIC Date of Latest Publication: 08.02.2022

### Publications in BR IFIC Space

Earliest Publication Date: 07.06.2016

Latest Publication Date: 08.02.2022

2	5
API	COORDINATION
2	1
NOTIFICATION	OTHER

### Related Notices Information

API(0)	Coordination(1)	Notification(0)	Other(1)
Notice ID	Provision	Notice Date of Receipt	
1, 116520450	9.6	27.12.2016	

### Network Structure Navigation

Min Frequency Max

Emission (Tx)	7'250 MHz	76'000 MHz
Reception (Rx)	7'900 MHz	86'000 MHz
Inter-Satellite Link (ISL)	7'250 MHz	76'000 MHz

### Overview of Emissions Characteristics

9 SERVICES

### Coordination Requirements & Examination Results

31	0
AFFECTED ADMINISTRATIONS	UNFAVORABLE FINDINGS

### Associated Stations


165	0
EARTH STATIONS	SPACE STATIONS

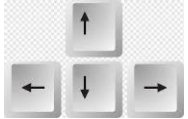


# NEW in ITU SpaceExplorer





## Dashboard – Network Structure Navigation card









2 options for navigating through the rows of the table and changing levels in the structure: **Beams > Group > Assignment**

(1) Click  OR  
(2) Use the key board arrows



Click to view and navigate all **GIMS images**

← BACK    Search by Beam Name    Results: 71/71     Reset Filters     Hide images     Show Hints     Export >

Details	Beam Name	Transmitti Receiving[	Freq. Min (MHz)	Freq. Max (MHz)	Freq. Gaps	Polarizatio	EIRP Density Max (dBW/Hz)	Gain Max	Pointir Accura	Earth Station Min. Antenna Diameter (m)	GIMS Image
	1KADR	E	17'700	21'200	Yes	CL,CR...	-57.8	46	0.1		
	D01Y	E	17'700	20'200	Yes	CL,CR...	-36.9	45	0.1		
	D04N	E	17'700	20'200	Yes	CL,CR...	-45.9	23	0.3		
	D06N	E	17'700	20'200	Yes	CL,CR...	-63.9	41	0.3		



# NEW in ITU SpaceExplorer

## Dashboard – Overview of Emissions Characteristics Card

Satellite Name > Notice > Overview of Emissions Characteristics

SMMSAT-7R 116520450  
Geostationary (159 East) Coordination  
S

Emissions Receive Beams Transmit Beams

Filter by Beam Name Results (Beams): 34/34 [Reset Filters](#)

Frequencies																	
Freq. (MHz)	Bandwidth (kHz)	Freq. Band (MHz)	Class of Station	23U27L	SBR	TBR	U01N	U03N	U07U	U09Y	UL1M	UL2M	UN1L	UN1R	UN2L	UN2R	U02L
28'850	60000	28'820 - 28'880	EC							x							
28'890	60000	28'860 - 28'920	EC							x							
28'910	60000	28'880 - 28'940	EC							x							
28'950	100000	28'900 - 29'000	EC						x								
28'950	60000	28'920 - 28'980	EC							x							
28'970	60000	28'940 - 29'000	EC							x							
28'987.5	225000	28'875 - 29'100	EC					x									
29'000	1000000	28'500 - 29'500	EC						x	x							
29'000	100000	28'950 - 29'050	EC						x								
29'010	60000	28'980 - 29'040	EC							x							
29'030	60000	29'000 - 29'060	EC							x							

3 tabs to display the same information as in SNS on line





# NEW in ITU SpaceExplorer

## Dashboard – Coordination Requirements & Examination Results Card

5 tabs to display and filter requirements

Satellite Name > Notice > Coordination Requirements & Examination Results  
SMMSAT-7R 116520450  
Geostationary (159 East) Coordination  
5

INTRODUCTION

COMMITMENTS

SUMMARY OF COORDINATION REQUIREMENTS

POTENTIALLY AFFECTED ADMINISTRATIONS

AFFECTED NETWORKS INFORMATION

LIST OF FREQUENCIES AND PROPOSED FINDINGS

Notifying Administration

Network Organization

Country

Results (Highlights): 96/96

Provision	CA	ΔT/T	Freq Band(MHz)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
9.7	✓	-	—	AUS		CHN CYP			F	G	HOL		J		LUX	MLA	NOR NRU		PNG		RUS RUS/IK			UAE USA	
9.7	-	✓	—	ARG ARM ARS ARS/ARB AUS AZE	B BEL BLR	CAN CHN CLM CYP CZE	D	E EGY ETH	F FIEUT	G GRC	HOL	I IND INS IRN IRQ ISR	J	KAZ KOR	LAO LUX	MAU MCO MEX MLA MNG	NCG NOR NRU		PAK PNG	QAT	RUS RUS/IK	SNG	THA TUR	UAE UKR USA	VTN
9.41			17'300-21'200 17'700-19'300 17'700-21'200 27'000-28'050 27'500-28'050 28'500-29'500 28'500-31'000 42'500-51'400 81'000-86'000					EGY					J	KOR											UAE
A30A#7.1			17'300-18'100 17'700-17'800 17'700-18'100	AUS	BGD	CAN CHN		EGY	F FSM	G	HOL	IND INS ISR	J	KIR KOR			NOR NZL		PNG	QAT	RUS RUS/IK				USA





# NEW in ITU SpaceExplorer

## Dashboard – Associated Stations Card

2 tabs to display and filter  
As in SNS online

Satellite Name > Notice > Associated Stations  
SMMSAT-7R 116520450  
Geostationary (159 East) Coordination  
5

Associated Earth stations Associated Space Stations

Search by Station Name

Results: 1999/1999

Reset Filters Show Hints Export Force fit table

Station Name	Country	Station Type	Longitude (Degrees)	Latitude (Degrees)	Group ID	Antenna Type	Noise Temperature (Kelvin)	Max. Isotropic Gain (dB)	Beamwidth (Degrees)	Previous Station Name	Class of Station	Nature of Service
0.33M		T			116817591	A-25*LOG(FI)		37	2.41		TC	CP
0.33M		T			116817597	A-25*LOG(FI)		37	2.41		TC	CP
0.33M		T			116817603	A-25*LOG(FI)		37	2.41		TC	CP
0.33M		T			116817609	A-25*LOG(FI)		37	2.41		TC	CP
0.33M		T			116817615	A-25*LOG(FI)		37	2.41		TC	CP
0.3M		T			116816676	A-25*LOG(FI)	200	33.9	3.4		TC	CP

# NEW: save your favorite queries In *My Space Explorer*

# First In Networks Explorer Save your query

1. In **Networks Explorer**  
Sign in as TIES user

2. **Save your filter criteria**  
to My Space Explorer

3. Click on the tab:  
**My Space Explorer**

The screenshot shows the ITU Space Explorer interface. The top navigation bar includes 'Space Explorer', 'Networks Explorer', 'Special Explorer', 'Temporary Explorer', 'My Space Explorer', and 'Query Builder'. A 'BETA | FEEDBACK' button is on the right. The main content area is titled 'Home > Networks Explorer > List View'. On the left, the 'Identity' sidebar shows filters for 'Space Network System (SNS)', 'Satellite Network' (set to 'S (Sweden)'), 'Network Organization', and 'Satellite Network Name'. Below these are radio buttons for 'All', 'Non-Plan Only', and 'Plan Only'. The main table displays search results with columns: Details, SNS Notice ID, Notifying Adm / Network Org, Satellite Network Name, GSO Location East (+) or West (-) Degrees, Notice Type, Notification Reason, Provision, Plan/Non-Plan, and Notice Date of Receipt. The table contains 6 rows of data.

Details	SNS Notice ID	Notifying Adm / Network Org	Satellite Network Name	GSO Location East (+) or West (-) Degrees	Notice Type	Notification Reason	Provision	Plan/Non-Plan	Notice Date of Receipt
	113590059	S	SIRIUS-5E-2	5.00	G	U	R549	Non-Plan	31.01.2013
	113593001	S	SIRIUS-5E-2	5.00	G	U	R5552	Non-Plan	31.01.2013
	114500015	S	SIRIUS-5E-2	5.00	G	N	11.2	Non-Plan	23.10.2015
	112500153	S	SIRIUS-5E	5.00	G	N	11.2	Non-Plan	23.10.2015
	109500400	S	SIRIUS-P	5.00	G	N	11.2	Non-Plan	23.10.2015
	115520302	S	SMMSAT-2X	-41.00	G	C	9.6	Non-Plan	28.11.2015



NEW



# My Space Explorer

Then  
Manage easily your  
personal queries



Home > My Space Explorer Up to latest BR IFIC No 2981 / 04.10.2022

Use My Space Explorer to save and share bookmarks of queries.  
Only the query (choice of filters) is saved, not the data (use Export function to save a snapshot of data).  
Bookmarks can be shared with TIES users and ITU Staff.

Search bookmark titles

**Favorite Bookmarks (1)★**

From Networks Explorer (3)

From Earth Stations (0)

From Query Builder (0)

Received Shared Bookmarks (1)

**Favorite Bookmarks**

★ < ⋮

Sweden in SNS database

From Networks Explorer

★ < ⋮

Sweden in SNS database

☆ < ⋮

Sweden in Publication History

☆ < ⋮

myquery

From Earth Stations

From Query Builder

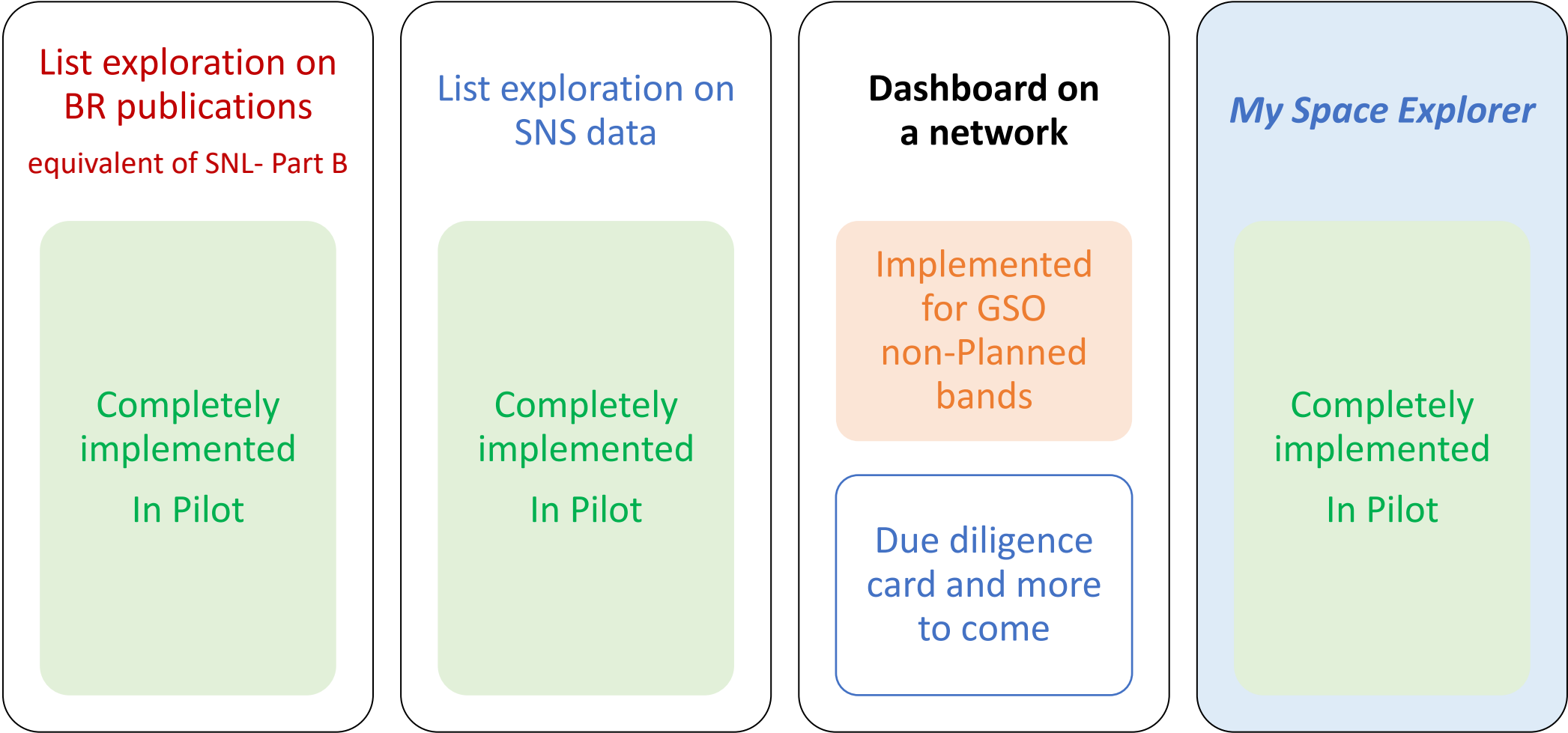
Received Shared Bookmarks

★ < ⋮

Sweden in Publication History

The bookmarks of your Staff and TIES are the s...

# ITU SpaceExplorer – Level of implementation



# ITU SpaceExplorer

— More features to come



List and dashboard  
for Earth Stations

Dashboard for  
Non-GSO



Dashboard for  
Space Plans

Radio Astronomy



QueryBuilder

Special Explorer



Temporary  
Explorer

Support Contact: [ITUSpaceExplorer@itu.int](mailto:ITUSpaceExplorer@itu.int)

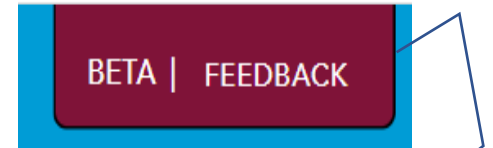
## Let us know what you need!

Please give us feedback, so we can implement content that is truly useful and helpful. Thanks!


## Need an introductory briefing?

Virtual mini-sessions how to use ITU SpaceExplorer are available. For registration email to: [ITUSpaceExplorer@itu.int](mailto:ITUSpaceExplorer@itu.int)

-- The ITU SpaceExplorer Team



On each pages,  
contact with ITU  
available by clicking on

 Show Hints

Help by clicking on “Show  
Hints” when available on  
pages



# Thank you!

ITU – Radiocommunication Bureau

Questions to [brmail@itu.int](mailto:brmail@itu.int) or [ITUSpaceExplorer@itu.int](mailto:ITUSpaceExplorer@itu.int) or [veronique.glaude@itu.int](mailto:veronique.glaude@itu.int)

ITU SpaceExplorer Pilot version 0.9.8:

<https://www.itu.int/go/ITUSpaceExplorer>

