# ITU Software tools

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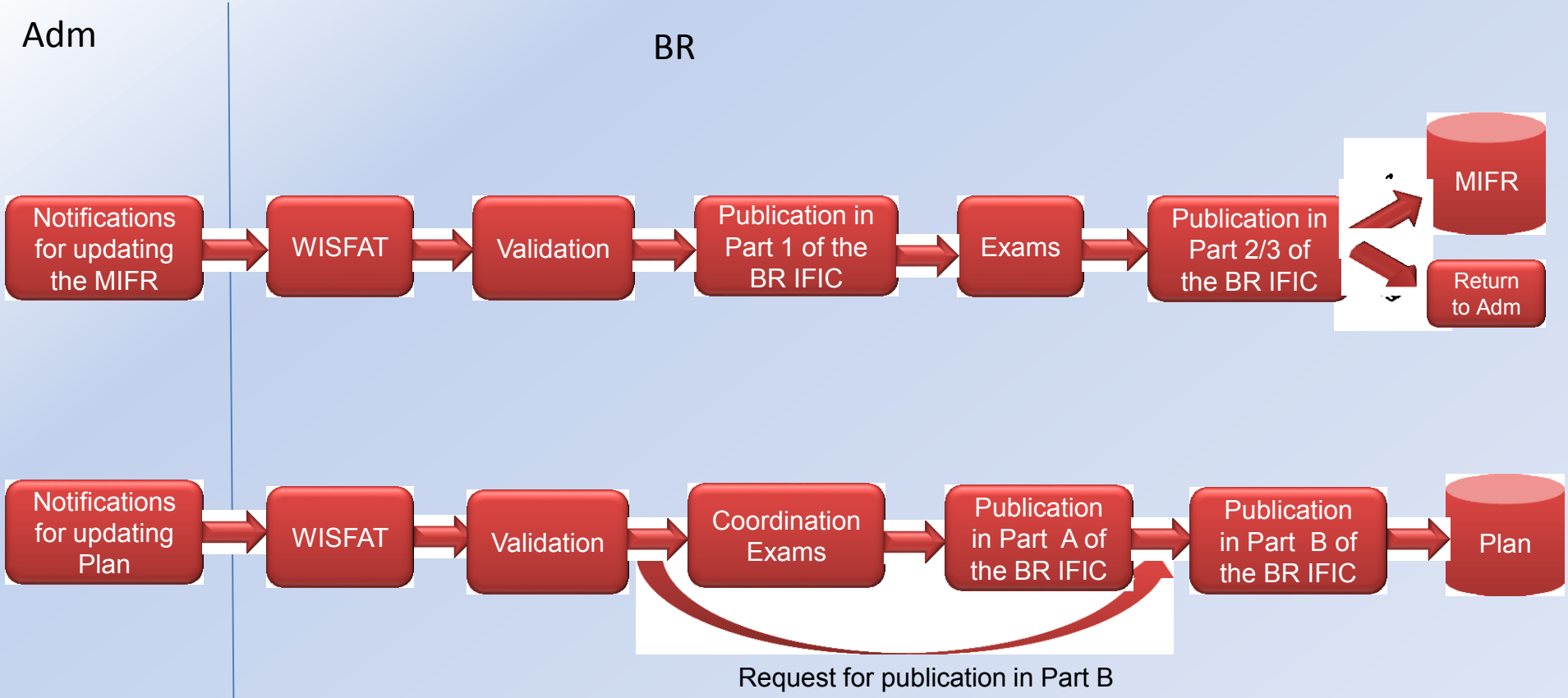
**Head of Division**
**BDT/IEE/SBD**

# Introduction

- Radio Regulations is an intergovernmental treaty, therefore administrations are bound to apply those provisions.
- Frequency assignments recorded in the MIFR with favourable findings allow for international recognition.
- Frequency assignments to **be notified** to the Bureau
  - Those capable of causing harmful interference to any service of another administration;
  - Used for International radiocommunication;
  - Subject to world or regional frequency allotment or assignment plan which does not have its own notification procedure;
  - Subject to the Art. 9 coordination procedure;
  - Request for international recognition;
  - For information only.

# Terrestrial services

# Overview of the BR processing



# Software

- TerRaQ: Software for querying the BR IFIC database:
  - Parts I, II, III or IIB and the Special Sections (Parts A, B and C);
  - Frequency assignments/allotments recorded in the Master Register and in the various plans, as well as notices currently being processed;
  - Specific queries (National extract, SQL Query, etc.).
- TerRaNV
  - Software for checking the electronic notices;
  - Complete validation is performed by the BR.
- TerRaNotices
  - Creation and validation of electronic notices;
  - Incorporates the same validations as TerRaNV.
- BR IFIC DB Manager
  - It is now possible to have different releases of the BR IFIC databases installed on one PC and choose the desired one
- Terrestrial BR IFIC Format Converter
  - Create a bridge MS Access® database to connect to the SQLite database
  - Convert BR IFIC database file from MS Access® to SQLite
  - Convert BR IFIC database file from SQLite to MS Access® (works only for the BR IFIC editions before 2808 dated 24/11/2015 because of the size of the FXM part of the BR IFIC which is bigger than the limitation of the MS Access®)

# The software tools to be used during the *Frequency Coordination* process

## 1 - BRIFIC

BR Terrestrial database ***TerRaBase***
***TerRaNotices*** (Notice generation & validation)
***TerRaQ*** for queries (linked to ***TerRaNotices***)

## 2 - eBCD

eQry
eTools

TIES users

Submit your file to the web on ***eTools*** to the ASMG compatibility Analyses :

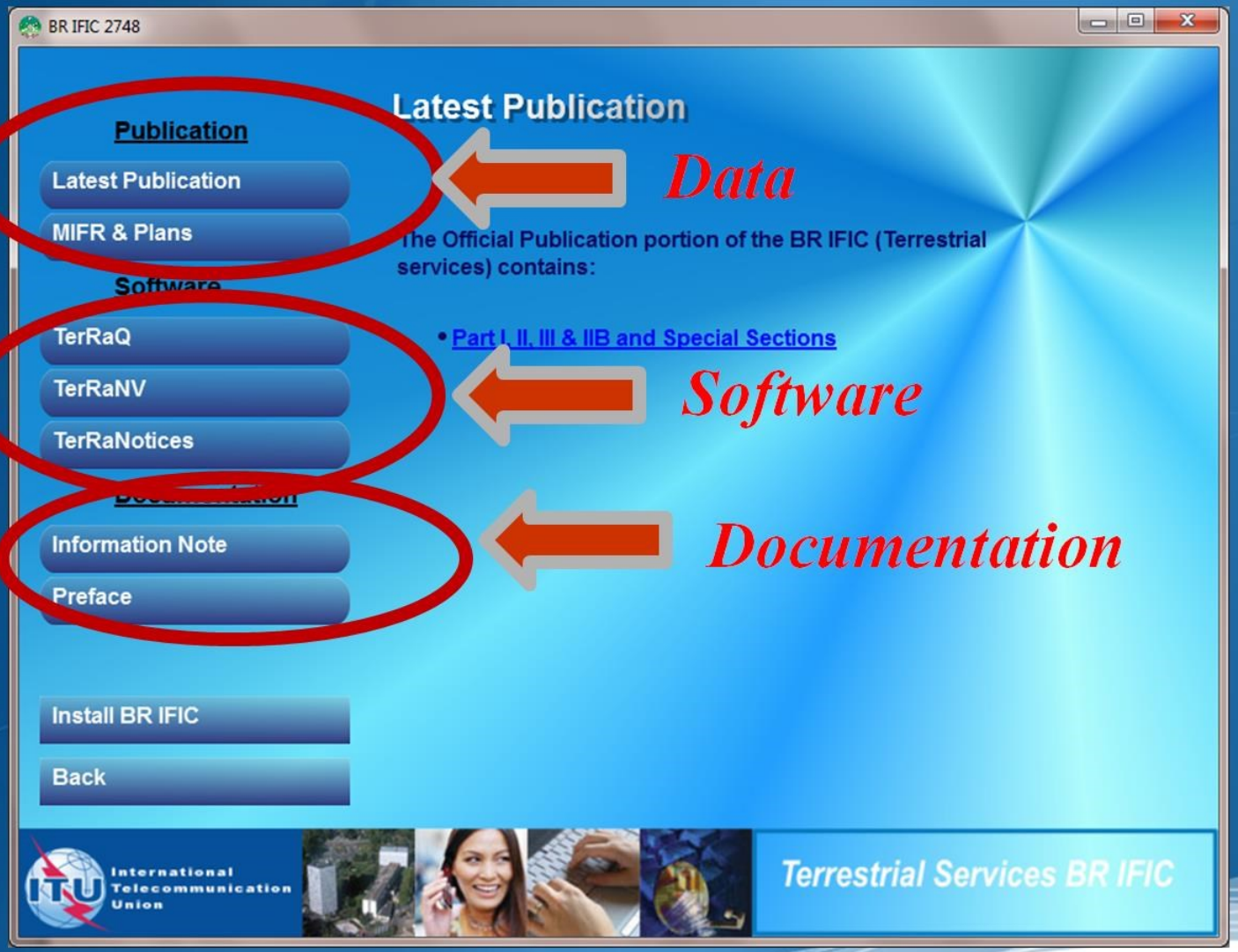
Please select the calculation type

GE06 | GE06D ASMG Compatibility Analyse

New Calculation

## 3 - GE06Calc

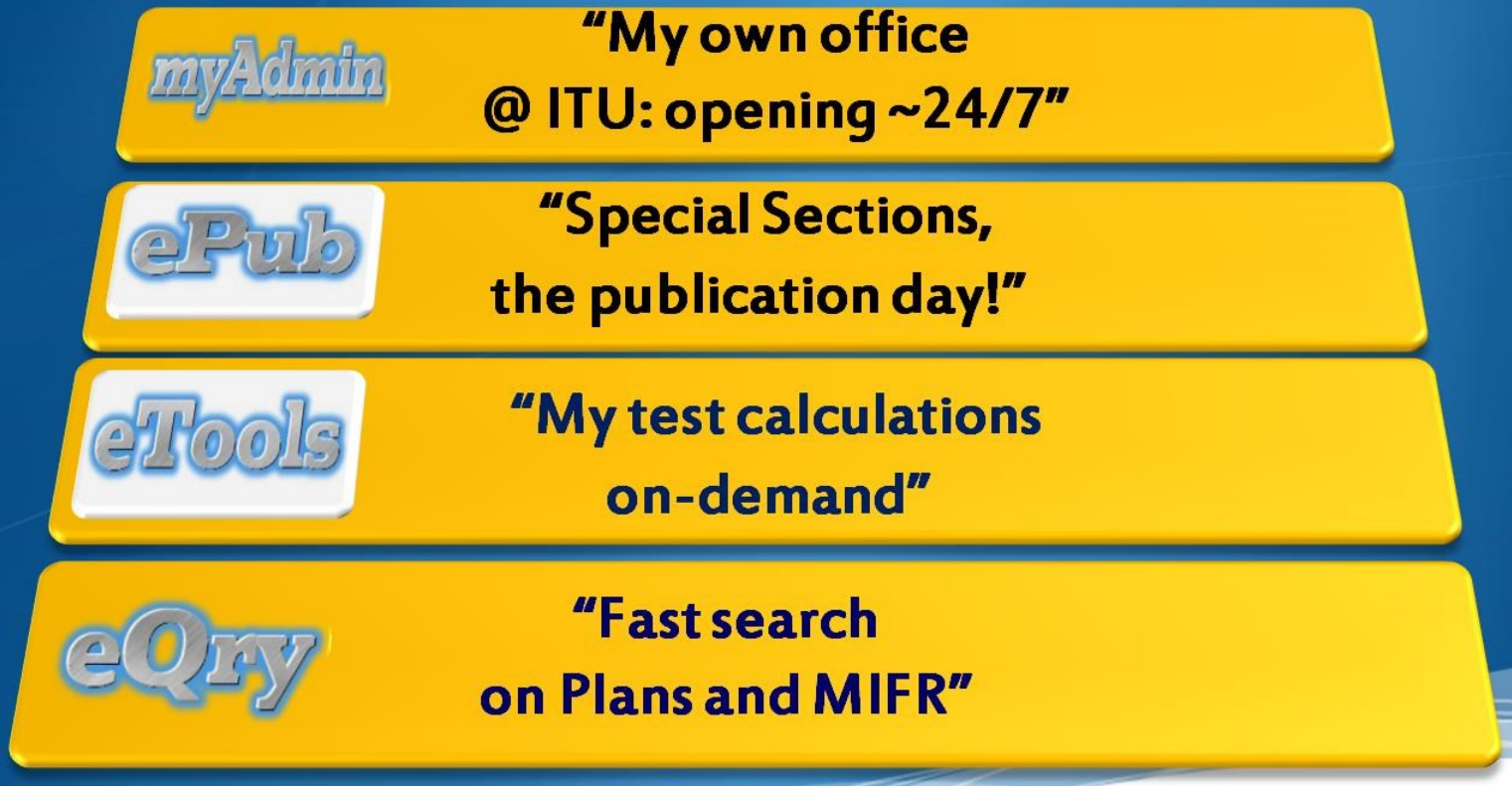
# The BRIFIC


BR IFIC 2748
Publication
Latest Publication
MIFR & Plans
Software
TerRaQ
TerRaNV
TerRaNotices
Information Note
Preface
Install BR IFIC
Back
Latest Publication
Data
The Official Publication portion of the BR IFIC (Terrestrial services) contains:
• Part I, II, III & IIB and Special Sections
Software
Documentation
International Telecommunication Union
Terrestrial Services BR IFIC

# eBCD overview

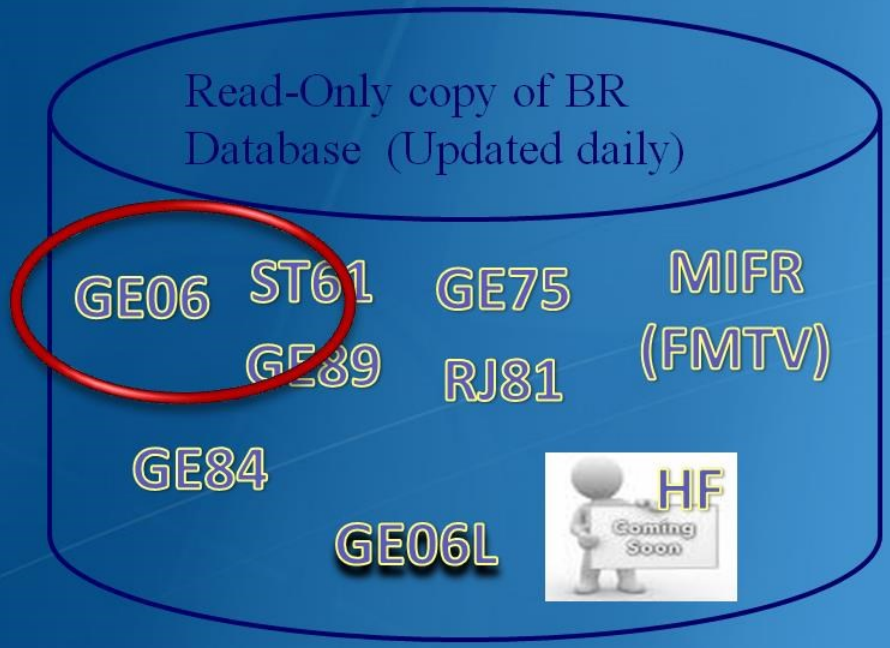
- A TIES Account is necessary.

  http://www.itu.int/en/membership/Pages/default.aspx



# eQry

## "Online search on Plans and MIFR"




## Search by:

- Administration
- Geographic Area
- Frequency
- Date of Receipt
- Administration Unique Identifier
- BR Identification Number
- Status (Recorded/Published)

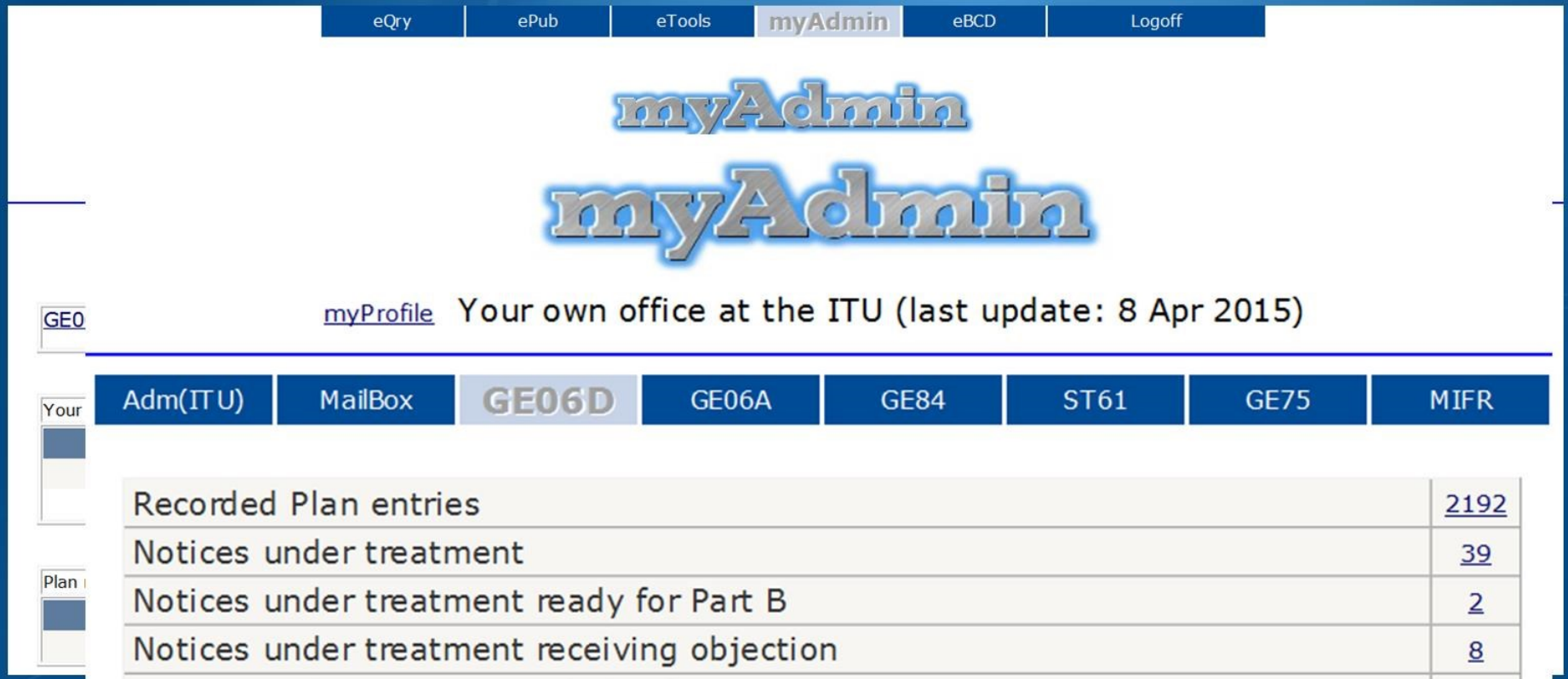
# ePub

# "Special Sections, the publication day!"

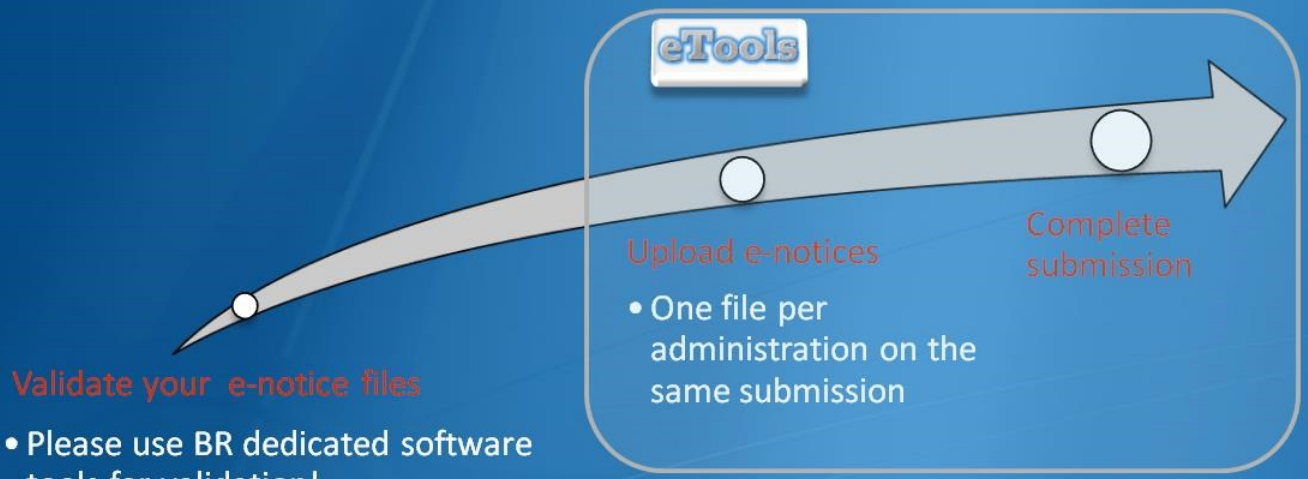
| Special Section | Part A1 | Part B1 | Part C1 | Part A2 | Part B2 | Part C2 | BR IFIC No | Publication Date | End of 40 day period | End of 75 day period |
|---|---|---|---|---|---|---|---|---|---|---|
| 103 | 27 | 986 | 201 | 4 | 1 | | 2792 | 14 Apr 2015 | 24 May 2015 | 28 Jun 2015 |
| 102 | 289 | 805 | 1 | 13 | 1 | 1 | 2790 | 17 Mar 2015 | 26 Apr 2015 | 31 May 2015 |
| 101 | 147 | 487 | 10 | 2 | 2 | | 2787 | 3 Feb 2015 | 15 Mar 2015 | 19 Apr 2015 |
| 100 | 281 | 219 | 2 | 3 | 5 | | 2785 | 6 Jan 2015 | 15 Feb 2015 | 22 Mar 2015 |
| 99 | 318 | 80 | 9 | | 3 | | 2783 | 25 Nov 2014 | 4 Jan 2015 | 8 Feb 2015 |

# myAdmin

## "My own office @ ITU: opening ~24/7"



# eTools: e-notice submission



The ITU distributed processing infrastructure will treat your test submission and inform you at completion!

***Our new server will handle 28 separate processes***

Check your TIES account!

yourTIESname@ties.itu.int

# GE06Calc Software Tool

- PC-based application for unofficial examinations to the GE06 Digital Plan
- Web-based installation from: ITU-R->Terrestrial->Broadcasting->Software->GE06Calc

  http://www.itu.int/en/ITU-R/terrestrial/broadcast/Pages/Services.aspx
- Automatic updates (checking for updates is performed only if and when the application is started)

*"On-demand test calculations"*

# eTools

| GE06 |
| --- |
| • **GE06D** Plan Modification<br>• (Coordination/Conformity)<br>• **GE06A** Coordination exam.<br>• **GE06D** Compatibility<br>• **GE06D** Compatibility (ATU)<br>• **GE06D** Compatibility (ASMG) |

| Propagation |
| --- |
| • ITU-R P.1812 Point to Point<br>• ITU-R P.1812 Point to Area<br>• ITU-R P.1546 Point to Area |

| RJ81 |
| --- |
| • Plan Modification<br>• What-if studies |

| Notice Generation |
| --- |
| • Notice Generation<br>(Export to SGML output) |

# BR terrestrial web pages

- BR Terrestrial web site:

http://www.itu.int/en/ITU-R/terrestrial/Pages/default.aspx

  - Three divisions (BCD, FMD and TPR)
- Other activities carried out:
  - Resolution 647 (rev. WRC-12) “Emergency and disaster Relief Radiocommunication”
    - Frequencies made available to use in case of Emergency;
  - Resolution 205 (rev. WRC-12) “Monitoring in the band 406-406.1 MHz” (COSPAS-SARSAT)
    - To identify and locate unauthorized emissions in the band 406-406.1 MHz that cause harmful interference to the reception of satellite emergency position-indicating radio beacons (EPIRB) signals of the COSPAS-SARSAT system.

# Online databases - Monitoring

- Regular monitoring program in bands between 2 850 kHz – 28 000 kHz
- Data received are processed and regularly published

http://www.itu.int/en/ITU-R/terrestrial/monitoring/Pages/Regular.aspx

- Monitoring station notified to the Bureau and participating in this program can be consulted:

http://www.itu.int/online/mms/mars/monitoring/l8_station_search.sh

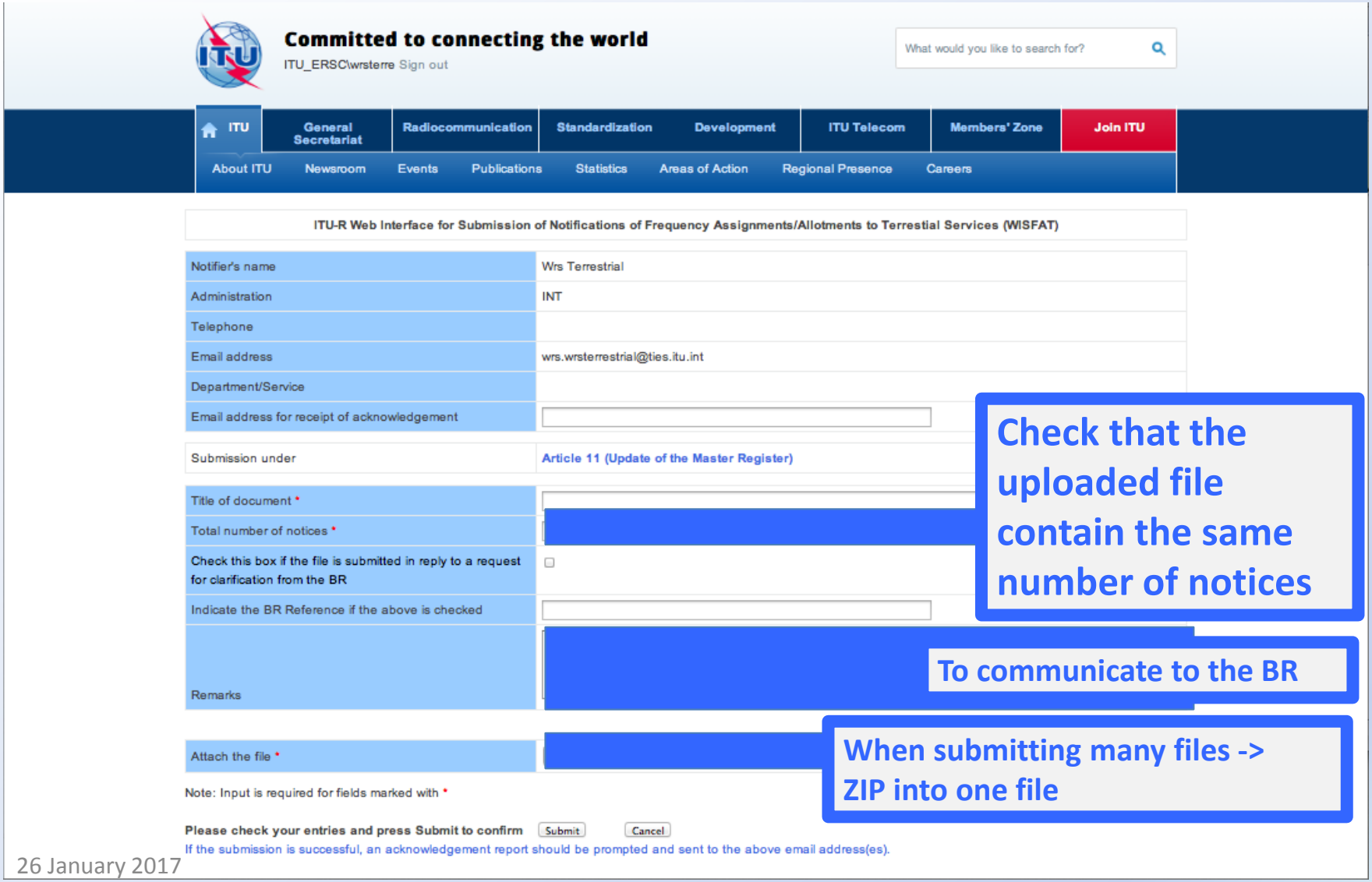
- This information is also published in List VIII

# WISFAT

- Web Interface for Submission of Frequency Assignments/Allotments for Terrestrial Services:

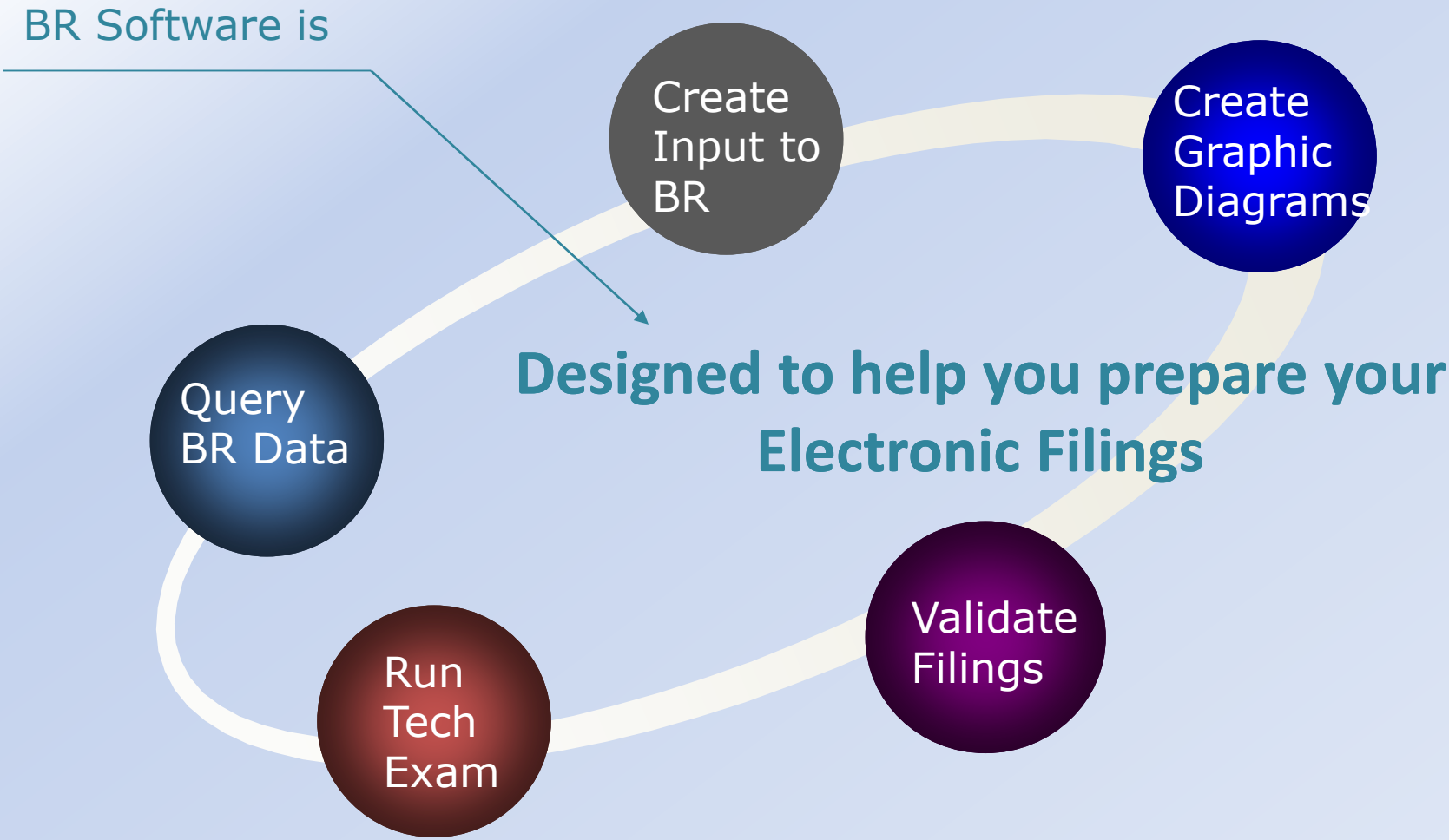
http://www.itu.int/en/ITU-R/terrestrial/tpr/Pages/Submission.aspx

# WISFAT

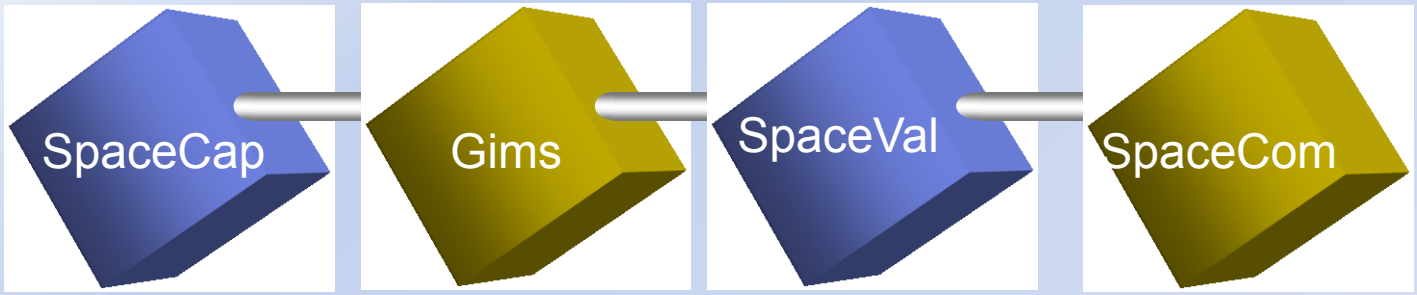

Committed to connecting the world
ITU_ERSC\wrsterre Sign out
What would you like to search for?
ITU
General Secretariat
Radiocommunication
Standardization
Development
ITU Telecom
Members' Zone
Join ITU
About ITU
Newsroom
Events
Publications
Statistics
Areas of Action
Regional Presence
Careers
ITU-R Web Interface for Submission of Notifications of Frequency Assignments/Allotments to Terrestial Services (WISFAT)
Notifier's name
Wrs Terrestrial
Administration
INT
Telephone
Email address
wrs.wrsterrestrial@ties.itu.int
Department/Service
Email address for receipt of acknowledgement
Submission under
Article 11 (Update of the Master Register)
Title of document *
Total number of notices *
Check this box if the file is submitted in reply to a request for clarification from the BR
Indicate the BR Reference if the above is checked
Remarks
Attach the file *
Note: Input is required for fields marked with *
Please check your entries and press Submit to confirm
Submit
Cancel
If the submission is successful, an acknowledgement report should be prompted and sent to the above email address(es).
Check that the uploaded file contain the same number of notices
To communicate to the BR
When submitting many files -> ZIP into one file

# Space services

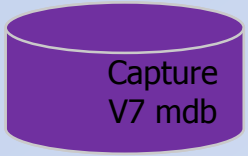
# Purpose of BR Software



# BR Software to Create BR Data

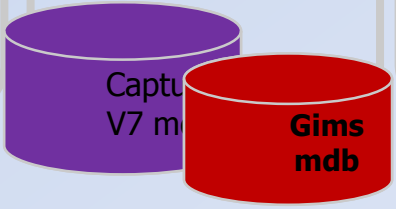



**Create AP4 data to SNS V7 formatted database**



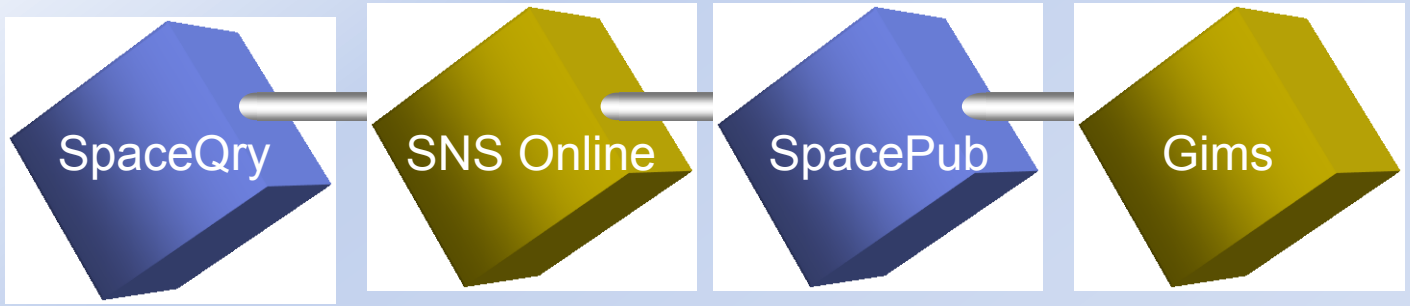

**Capture AP4 graphical data to GIMS mdb**

**Validate AP4 data and checks for presence of required AP4 graphical data**




**Capture requests for coordination**

# BR Software to Query BR Data



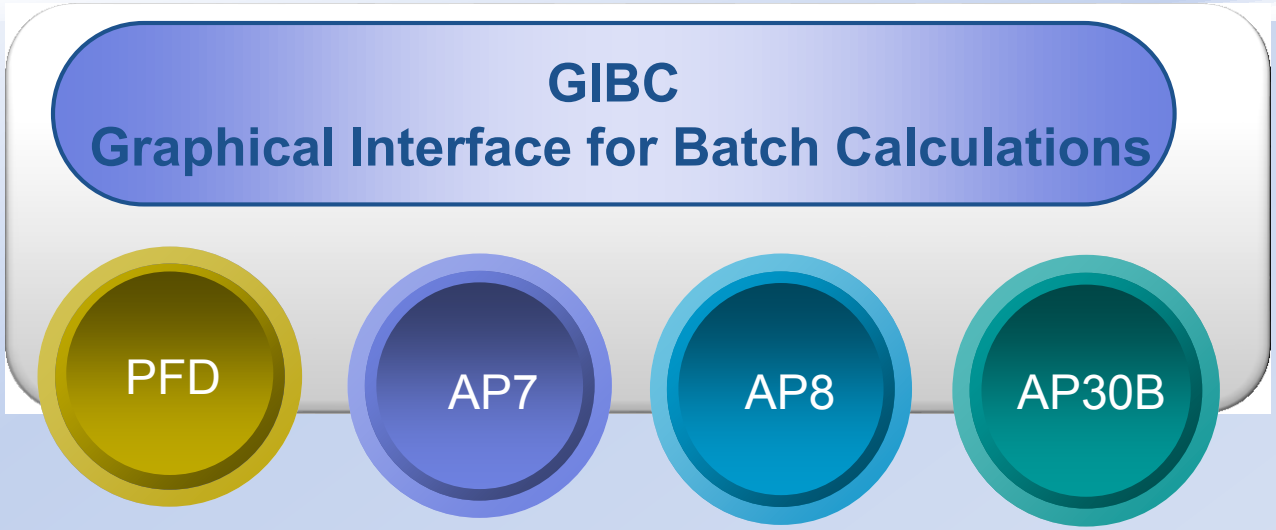

**Query** satellite and Earth stations in the space Services from -Srs_all.mdb -IFIC.mdb -Sps_all.mdb -AP30B.mdb

**Query** satellite and Earth stations in the space Services from -SNS Master on Ingres

**Print** satellite and Earth stations in the space Services from -Srs_all.mdb -IFIC.mdb -Sps_all.mdb -AP30B.mdb

**Query** for graphical data in the Gims database

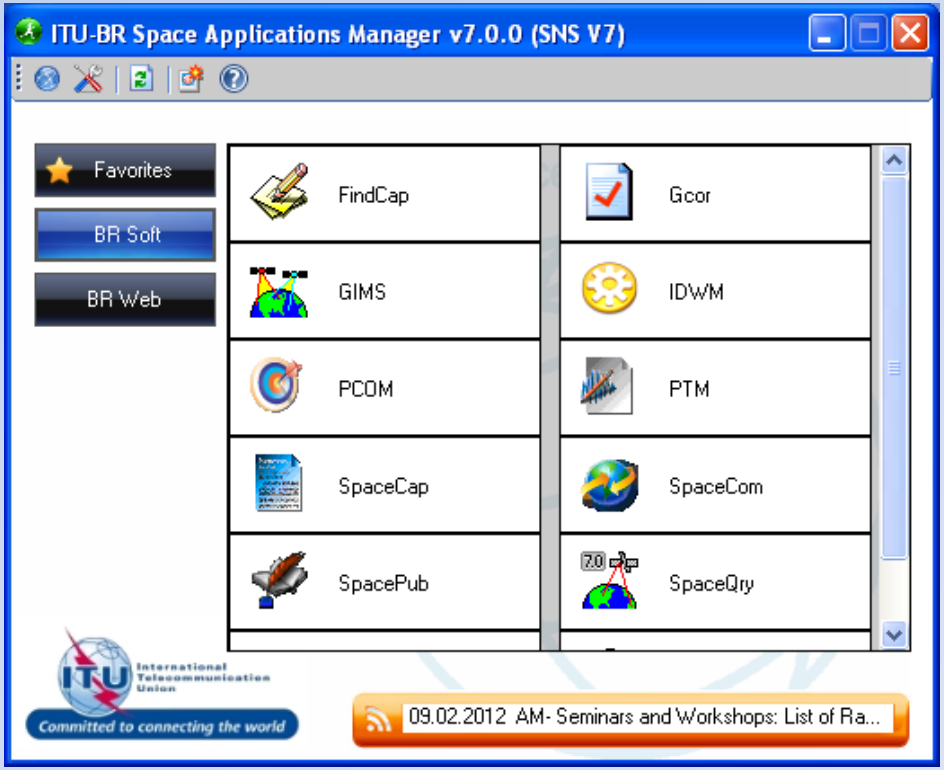
# BR Soft to Run Technical Exams

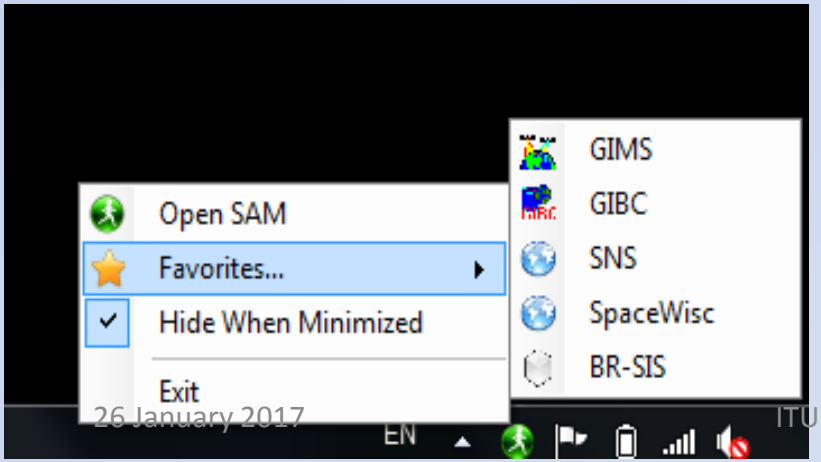



**SPS**
**the *space plans* software (formerly "MSpaceG")**

Determination of the coordination requirements for the Plans for space networks in Appendices 30, 30A of the Radio Regulations

# Space Application Manager



# Applications

PC based

- SpaceQry
- SpaceCap
- SpaceVal
- SpacePub
- SpaceCom
- GIMS
- GIBC
- SPS
- Ap7Capture

Web

- SNS-on-Line
- SNL-on-Line

Software Distribution

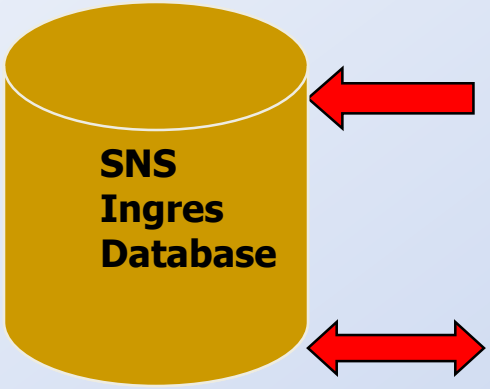
- BR IFIC DVD ROM
- Downloadable from ITU web site

# SNS Databases

## SNS Master Database On Ingres

in the Master Register

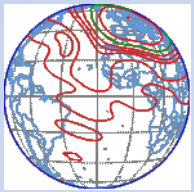
- ❑ Coordination and Notification
- ❑ Advance Publication
- ❑ Resolution 49



- Electronic Filings received by the BR
  - New assignments
  - Mod of existing
  - Delete existing
- Notifications in technical Examination

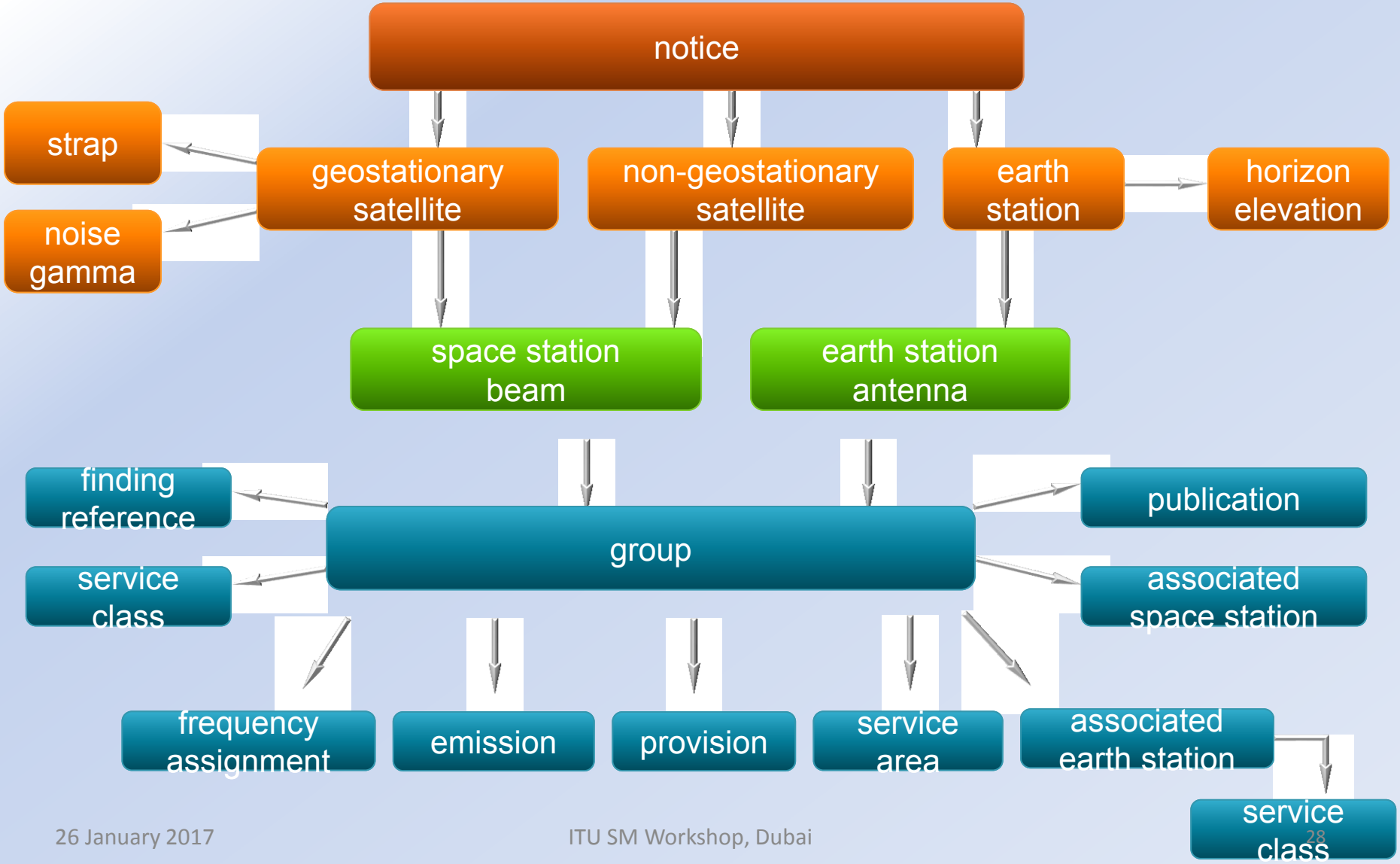
# Graphical Data

- **Gims diagrams**
  - **Appendix 4 – GSO and Non GSO Satellites**
  - **Contains Graphical data for both Non-plan and Plan**



- **ESCC Diagrams**
  - **Earth Stations Coordination Contours**

# SNS data structure

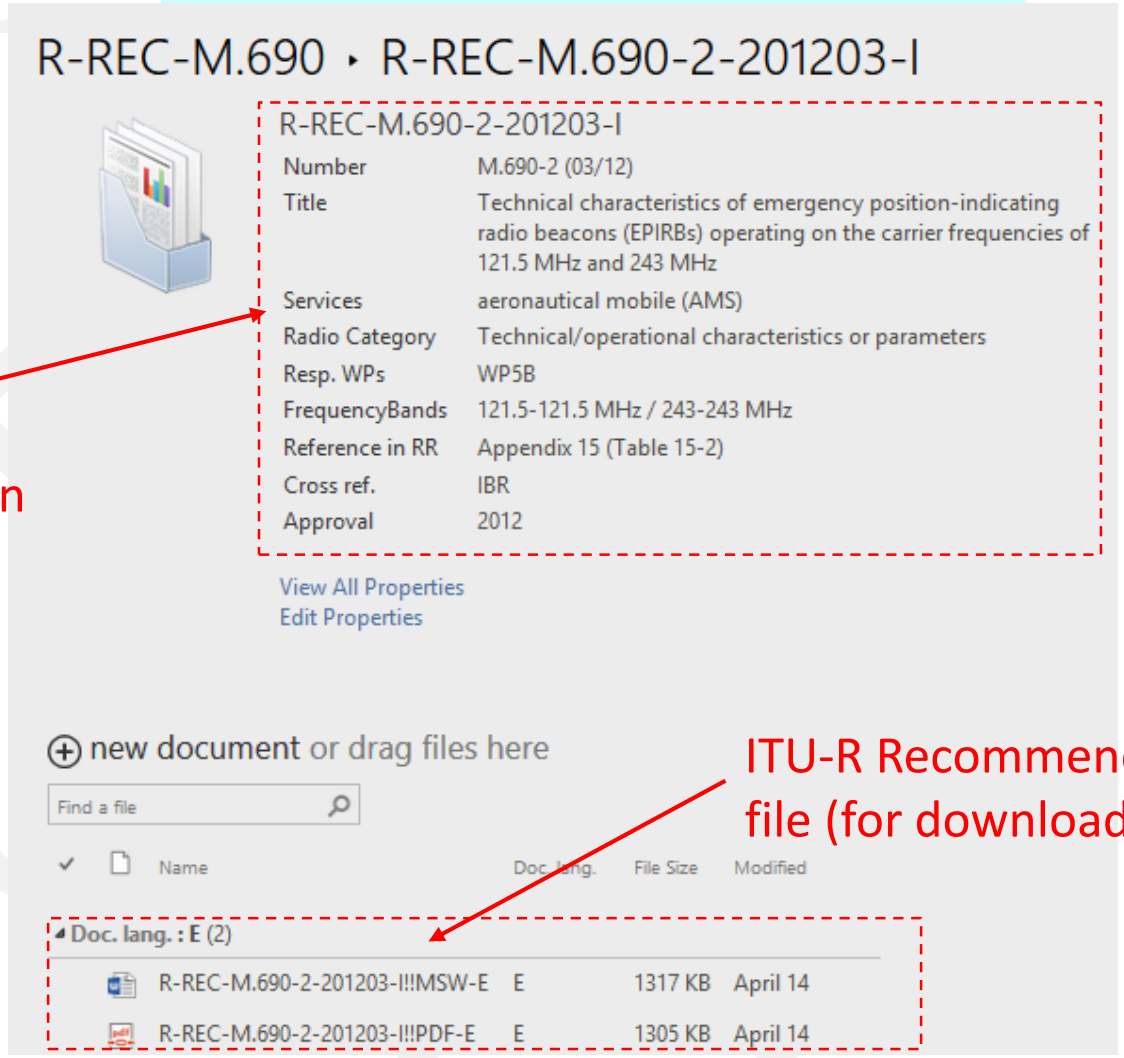


# Target documents and main search elements

- **ITU-R Recommendations**
  - Metadata Search (Search Criteria)
    "ITU-R Recommendation Series", "Radio Category", "Radio Services", "Cross Reference", "Responsible SGs/WPs" and "Approval Year"
  - Frequency Search
    Search by frequency range (min and max frequencies)
- **ITU-R Questions**
  - Metadata Search (Search Criteria)
    "Responsible SGs/WPs", "Approval Year", "Target Year" and "Category" (Resolution ITU-R 5)
- **ITU-R Reports [demo version, data verification is required]**
  - Metadata Search (Search Criteria)
    "ITU-R Recommendation Series", "Radio Category", "Radio Services", "Responsible SGs/WPs" and "Approval Year"
  - Frequency Search
    Search by frequency range (min and max frequencies)
- **ITU-R Resolutions and ITU Handbooks [under development]**

# ITU-R Recommendations Search

## ITU-R Recommendation Profile Page




Detail Profile of selected Recommendation

ITU-R Recommendation file (for download)

Digital Terrestrial
Television
Broadcasting
(DTTB)
DSO database

# Website

- Summary of the basic information from countries
- Relevant events (e.g. workshops, frequency coordination meetings, seminars)
- Relevant publications (e.g. ITU-R and ITU-D documents, roadmaps, workshop presentations)
- Relevant websites (e.g. ITU-R and ITU-D, broadcasting organizations, GE-06)
- Contacts
- Information sources (list of relevant surveys, questionnaires of the ITU-D and ITU-R and other sources)
- Accessible both form BDT and BR web pages

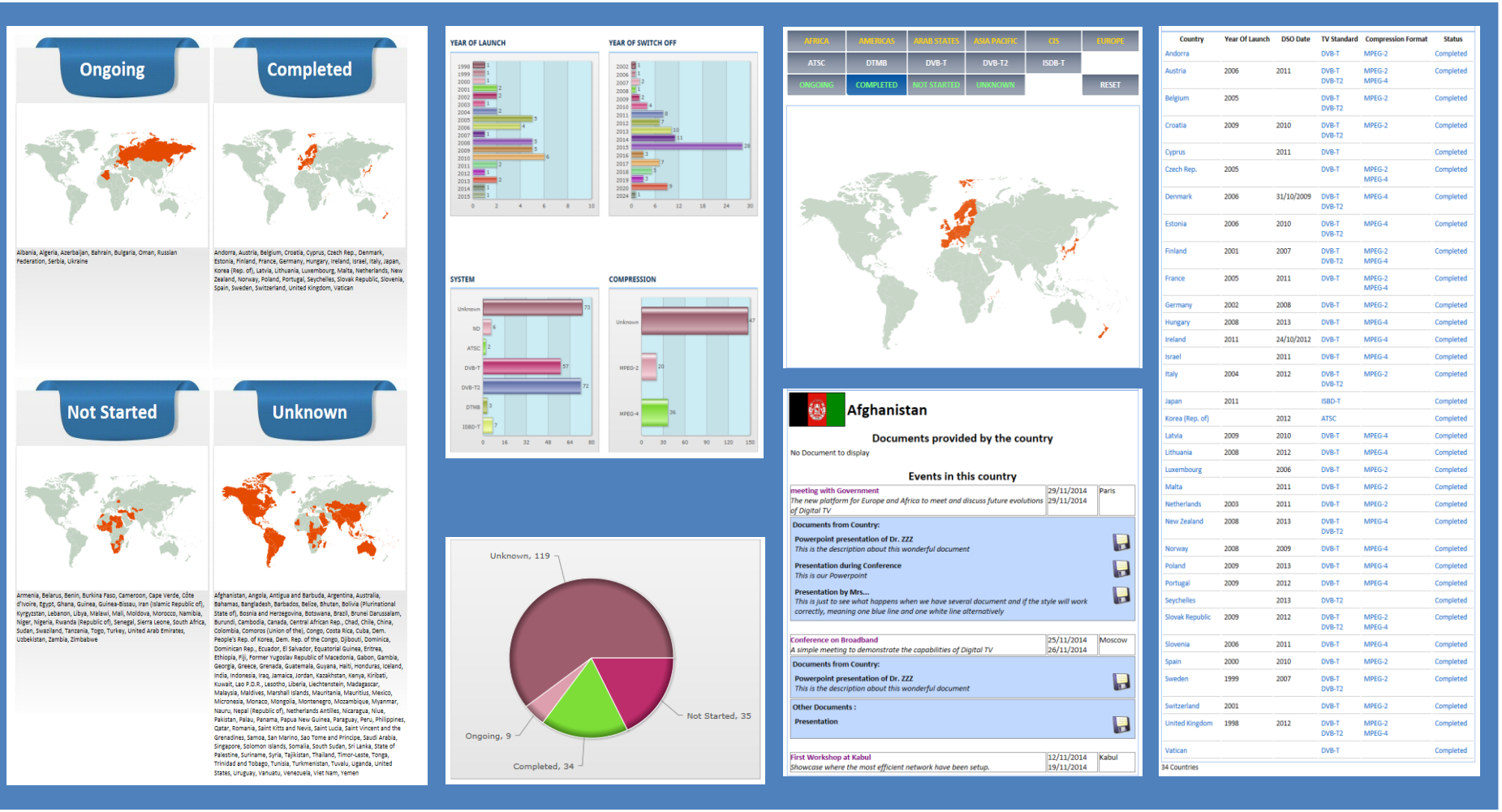
*Circular Letter BDT/IEE/SBD/DM/014 from the BDT Director (23 February 2015)*

- Given the dynamically changing status of the Digital Terrestrial Television (DTT) deployment and in order to enable all administrations to benefit from the latest status and information concerning the Digital migration, **Administrations are invited to make the necessary update to ensure that their actual status and data are correctly reflected on the portal.**

# Website

http://www.itu.int/en/ITU-D/Spectrum-Broadcasting/Pages/DSO/Default.aspx

# Website features




| Country | Year Of Launch | DSO Date | TV Standard | Compression Format | Status |
|---|---|---|---|---|---|
| Andorra | | | DVB-T | MPEG-2 | Completed |
| Austria | 2006 | 2011 | DVB-T DVB-T2 | MPEG-2 MPEG-4 | Completed |
| Belgium | 2005 | | DVB-T DVB-T2 | MPEG-2 | Completed |
| Croatia | 2009 | 2010 | DVB-T DVB-T2 | MPEG-2 | Completed |
| Cyprus | | 2011 | DVB-T | | Completed |
| Czech Rep. | 2005 | | DVB-T | MPEG-2 MPEG-4 | Completed |
| Denmark | 2006 | 31/10/2009 | DVB-T DVB-T2 | MPEG-4 | Completed |
| Estonia | 2006 | 2010 | DVB-T DVB-T2 | MPEG-4 | Completed |
| Finland | 2001 | 2007 | DVB-T DVB-T2 | MPEG-2 MPEG-4 | Completed |
| France | 2005 | 2011 | DVB-T | MPEG-2 MPEG-4 | Completed |
| Germany | 2002 | 2008 | DVB-T | MPEG-2 | Completed |
| Hungary | 2008 | 2013 | DVB-T | MPEG-4 | Completed |
| Ireland | 2011 | 24/10/2012 | DVB-T | MPEG-4 | Completed |
| Israel | | 2011 | DVB-T | MPEG-4 | Completed |
| Italy | 2004 | 2012 | DVB-T DVB-T2 | MPEG-2 | Completed |
| Japan | 2011 | | ISBD-T | | Completed |
| Korea (Rep. of) | | 2012 | ATSC | | Completed |
| Latvia | 2009 | 2010 | DVB-T | MPEG-4 | Completed |
| Lithuania | 2008 | 2012 | DVB-T | MPEG-4 | Completed |
| Luxembourg | | 2006 | DVB-T | MPEG-2 | Completed |
| Malta | | 2011 | DVB-T | MPEG-2 | Completed |
| Netherlands | 2003 | 2011 | DVB-T | MPEG-2 | Completed |
| New Zealand | 2008 | 2013 | DVB-T DVB-T2 | MPEG-4 | Completed |
| Norway | 2008 | 2009 | DVB-T | MPEG-4 | Completed |
| Poland | 2009 | 2013 | DVB-T | MPEG-4 | Completed |
| Portugal | 2009 | 2012 | DVB-T | MPEG-4 | Completed |
| Seychelles | | 2013 | DVB-T2 | | Completed |
| Slovak Republic | 2009 | 2012 | DVB-T DVB-T2 | MPEG-2 MPEG-4 | Completed |
| Slovenia | 2006 | 2011 | DVB-T | MPEG-4 | Completed |
| Spain | 2000 | 2010 | DVB-T | MPEG-2 | Completed |
| Sweden | 1999 | 2007 | DVB-T DVB-T2 | MPEG-2 | Completed |
| Switzerland | 2001 | | DVB-T | MPEG-2 | Completed |
| United Kingdom | 1998 | 2012 | DVB-T DVB-T2 | MPEG-2 MPEG-4 | Completed |
| Vatican | | | DVB-T | | Completed |

34 Countries

Committed to connecting the world

What would you like to search for?

1865 2015

ITU | General Secretariat | Radiocommunication | Standardization | Development | ITU Telecom | Members' Zone | Join ITU

About | Areas of Action | Accessibility | Join ITU-D | Partners | Projects | Publications | Regional Presence | TDAG | Study Groups

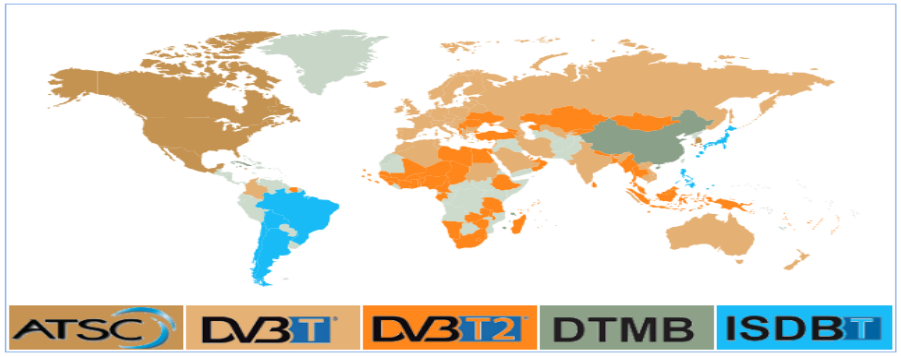
# Status of the transition to Digital Terrestrial Television Broadcasting : Data Miner

YOU ARE HERE HOME > ITU-D > SPECTRUM AND BROADCASTING > STATUS OF THE TRANSITION TO DIGITAL TERRESTRIAL TELEVISION BROADCASTING : DATA MINER

SHARE

This portal provides information on the status of the deployment of Digital Terrestrial Television (DTT)

| | | | | | |
|---|---|---|---|---|---|
| AFRICA | AMERICAS | ARAB STATES | ASIA PACIFIC | CIS | EUROPE |
| ATSC | DTMB | DVB-T | DVB-T2 | ISDB-T | GE06 |
| ONGOING | COMPLETED | NOT STARTED | UNKNOWN | | RESET |




MENU
- Home
- Summary
- Data Miner
- Figures

Related Events | Related Publications | Relevant Websites

Data Miner

- ...moros (Union of the), ...5.06.2015
- M...cco coordination meeting, Tunisia, , 16.05.2015 - 19.05.2015
- "Transition to digital technology, policy and regulation seminar" for rural broadcasting service providers , Mongolia, Ulaanbaatar, 22.04.2015 - 23.04.2015
- "Transition to digital technology, policy and regulation" for rural broadcasting service providers , Mongolia, Ulaanbaatar, 22.04.2015 - 23.04.2015
- la migration de la television vers le numerique, le choix de la norme de diffusion dans les pays membres, l'IPTV, la television numerique par satellite, la video ala demande et le deploiernent des nouvelles technologies a large bande issues du dividende numerique telles que la telephonic mobile de la quatrieme generation (4G) et le Wimax, Comoros (Union of the), ARUSHA, 11.03.2014 - 13.03.2014

Full List >

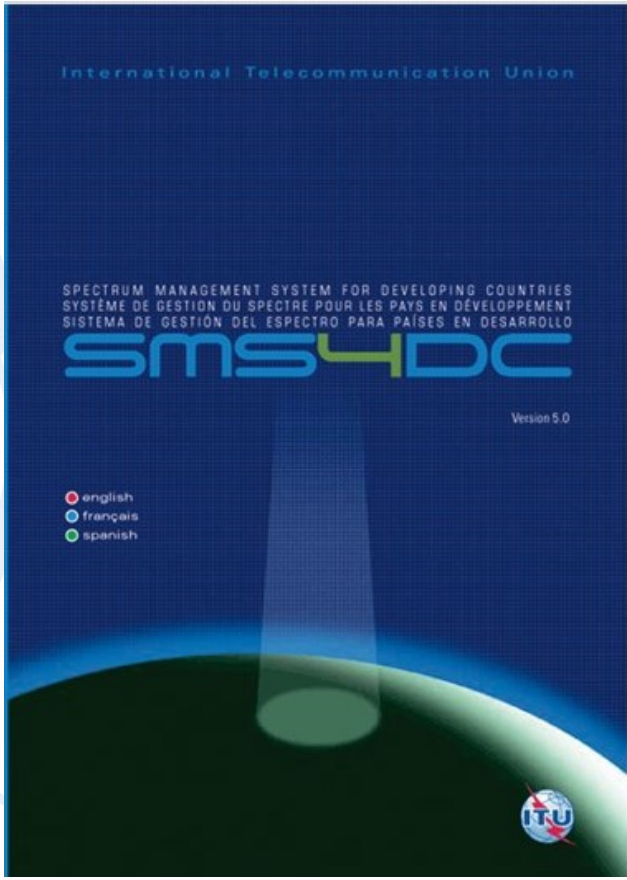
| Country | Year Of Launch | DSO Date | TV Standard | Compression Format | Status |
|---|---|---|---|---|---|
| Afghanistan | | | ND | | |
| Albania | | 17/06/2015 | DVB-T2 | MPEG-4 | Ongoing |
| Algeria | 2010 | 2015 | DVB-T<br>DVB-T2 | MPEG-2<br>MPEG-4 | Ongoing |
| Andorra | 2006 | 25/09/2007 | DVB-T | MPEG-2 | Completed |
| Angola | | | | | Ongoing |
| Antigua and Barbuda | | | | | |
| Argentina | 2010 | 2019 | ISBD-T | | |
| Armenia | 2015 | 2015 | DVB-T2 | | Ongoing |
| Australia | 2001 | 10/12/2013 | DVB-T | MPEG-2 | Completed |

International Telecommunication Union

Committed to connecting the world

# ITU Spectrum Management System for Developing Countries (SMS4DC)

- SMS4DC is software designed by ITU based on ITU recommendations
- Developed to assist the administrations of developing countries to undertake their spectrum management responsibilities more effectively;
- SMS4DC covers terrestrial fixed, mobile, sound and television broadcasting services in the bands above 30 MHz, including GE-06 as well as frequency coordination of Earth stations



# For further reading:

- ITU Handbook - Computer-Aided Techniques for Spectrum Management (CAT), 2015
- ITU Handbook on National Spectrum Management, 2015
- SMS4DC 5.0 User Guide
- ITU Handbook on Spectrum Monitoring, 2011
- Recommendation ITU-R SM.1370
- Recommendation ITU-R SM.1537
- Recommendation ITU-R SM.1604

# Thank you!

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