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BR software tools for terrestrial services



ITU - ATU REGIONAL RADIOCOMMUNICATION SEMINAR FOR AFRICA

**DAKAR, SENEGAL
27-31 MARCH 2017**

www.itu.int/go/ITU-R/seminars



Organised by:



Bangaly Fodé TRAORE
BR/TSD/BCD

Agenda



- **Overview of BR International Frequency Information Circular (BRIFIC): software and database**
- **Overview of BR online tools**
 - **Online Validation, eMIFR tools, WISFAT (official submission to the BR) for all terrestrial services**
 - **The eBCD2.0 platform for broadcasting services**
- **Compatibility Analyses Display software (CA Display)**

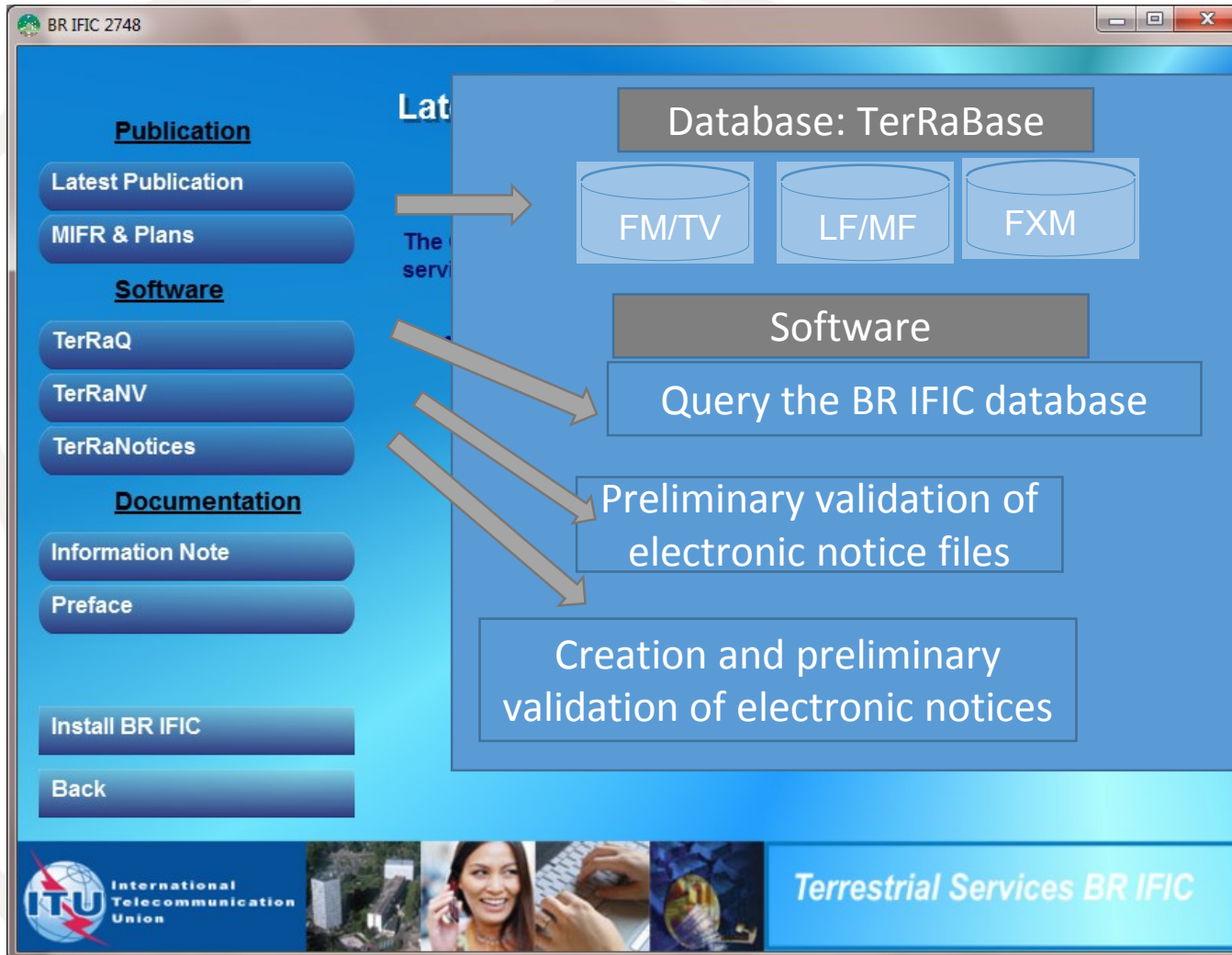
BR International Frequency information Circular

- Provide information on the frequency assignments and allotments recorded in the Master International Frequency Register and World-wide or Regional Plans, as well as on frequencies prescribed for common use.
- Published once every two weeks
- Arabic, Chinese, English, French, Russian and Spanish.

BR IFIC (Terrestrial Services)



BR IFIC Contents



The screenshot shows a web browser window titled "BR IFIC 2748". On the left is a navigation menu with sections: **Publication** (Latest Publication, MIFR & Plans), **Software** (TerRaQ, TerRaNV, TerRaNotices), **Documentation** (Information Note, Preface), **Install BR IFIC**, and **Back**. The main content area features a diagram of the system architecture. At the top is a box labeled "Database: TerRaBase" containing three database icons: "FM/TV", "LF/MF", and "FXM". Below this is a "Software" box containing "Query the BR IFIC database". Further down are two boxes: "Preliminary validation of electronic notice files" and "Creation and preliminary validation of electronic notices". Arrows point from the "Software" box to the validation boxes, and from the "Latest Publication" link to the database. The footer includes the ITU logo, a photo of a woman using a mobile phone, and the text "Terrestrial Services BR IFIC".

- Run from the DVD
- Install on PC
- More during demo session!

BR IFIC: TerRaQ

TerRaQ 2016 [PROD Live]

File View Tools Preferences Window Help

Session Queries Tracker

Query Definition [Query_1] Summary Last Run Query Results

Query Settings
Administrative Data
Frequency Data
Geographic Data
Coordination Data

Fragment(s) BR Assigned Id(s) Administration(s) Station Information Notice Information Receipt Date(s)

For this query, select assignments and / or notices notified by the following Administrations

Available Administrations: AFG, AFS, AGL, ALB, ALG, AND, ARG, ARM, ARS, ATG, AUS

Selected Administrations: MEX

Specify unique identifier(s) given by the Administration

Unique Id given by the Administration

Query_1: 303 rows Sorting by [Identifier assigned by the BR - ASC]

List view World map view Spectrum occupancy

Show problematic items only (no validation applied) Check all Uncheck all

	Identifier assigned by the BR	Fragment	Administration	Unique identifier given by the Administration	Receipt Date	Assigned Frequency	Geographic Coordinates	Intent	Geographic Area	Class of Station	Site Name
1	117006940	NTFD_RR	MEX	TVXHCD00P00CAM0022	24/01/2017	521 MHz	91°50'31"W - 18°39'21"N	RECORDED	MEX	BT	CD DEL CARMEN CAMP
2	117006941	NTFD_RR	MEX	TVXHAN00P00CAM0022	24/01/2017	521 MHz	90°34'41"W - 19°49'11"N	RECORDED	MEX	BT	CAMPECHE CAMP
3	117006942	NTFD_RR	MEX	TVXHOC00P00CHP0032	24/01/2017	581 MHz	92°06'04"W - 16°54'32"N	RECORDED	MEX	BT	OCOSINGO CHIS
4	117006943	NTFD_RR	MEX	TVXHCSA00P00CHP0015	24/01/2017	479 MHz	92°41'19"W - 16°44'12"N	RECORDED	MEX	BT	SAN CRISTOBAL DE LAS CASA CHIS
5	117006944	NTFD_RR	MEX	TVXHCSA00C01CHP0015	24/01/2017	479 MHz	92°43'30"W - 15°52'20"N	RECORDED	MEX	BT	Angel Albino Corzo CHIS
6	117006945	NTFD_RR	MEX	TVXHCSA00C02CHP0015	24/01/2017	479 MHz	93°00'48"W - 16°42'30"N	RECORDED	MEX	BT	Chiapa de Corzo CHIS
7	117006946	NTFD_RR	MEX	TVXHCSA00C03CHP0015	24/01/2017	479 MHz	93°43'18"W - 16°41'42"N	RECORDED	MEX	BT	Cintalapa CHIS
8	117006947	NTFD_RR	MEX	TVXHCSA00C04CHP0015	24/01/2017	479 MHz	93°22'28"W - 16°46'01"N	RECORDED	MEX	BT	Ocozocuahtla CHIS
9	117006948	NTFD_RR	MEX	TVXHCSA00C05CHP0015	24/01/2017	479 MHz	91°58'56"W - 17°30'33"N	RECORDED	MEX	BT	Palenque CHIS
10	117006949	NTFD_RR	MEX	TVXHCSA00C06CHP0015	24/01/2017	479 MHz	93°12'30"W - 15°41'29"N	RECORDED	MEX		117006948 - MEX - 479 MHz - 6M00
11	117006950	NTFD_RR	MEX	TVXHCSA00C07CHP0015	24/01/2017	479 MHz	92°42'55"W - 17°08'31"N	RECORDED	MEX		Details Allocations details
											Broadcasting station, television

Notice file and TerRaNotices



```

<Untitled>* - T01|ADD
<HEAD>
t_adm=SUI
</HEAD>
<NOTICE>
t_notice_type=T01
t_fragment=GE84
t_action=ADD
t_freq_assgn=89.000000
t_long=+0070955
t_lat=+471046
t_site_name=SONCEBOZ HAUTE JOUX
t_erp_v_dbw=13
t_hgt_agl=20
t_site_alt=1118
t_bdwidth=300
t_polar=V
t_tran_sys=4
t_eff_hgtmax=594
t_ctry=SUI
t_remarks=Art 4,Art 5
<ANT_DIAGR_V>
t_attn@azm0=0
t_attn@azm10=0
t_attn@azm20=0
t_attn@azm30=0
t_attn@azm40=0
t_attn@azm50=0
t_attn@azm60=0
t_attn@azm70=0
t_attn@azm80=1
t_attn@azm90=2
t_attn@azm100=3
t_attn@azm110=5
t_attn@azm120=7
t_attn@azm130=9
t_attn@azm140=11
t_attn@azm150=13
t_attn@azm160=14
t_attn@azm170=14
t_attn@azm180=14
t_attn@azm190=14
t_attn@azm200=14
t_attn@azm210=13
t_attn@azm220=11
t_attn@azm230=9
t_attn@azm240=7
t_attn@azm250=5
t_attn@azm260=3
t_attn@azm270=2
t_attn@azm280=1
t_attn@azm290=0
t_attn@azm300=0
t_attn@azm310=0
t_attn@azm320=0
t_attn@azm330=0
t_attn@azm340=0
t_attn@azm350=0
</ANT_DIAGR_V>
<ANT_HGT>
t_eff_hgt@azm0=166
t_eff_hgt@azm10=257
t_eff_hgt@azm20=303
    
```

TerRaNotices 1.2 (BR IFIC 2841) - [<Untitled>* - T01*]

File Tools View Language Options Window Help

Notice browser: Notice type Description
 <Untitled>*
 Head se... SUI
 T01|AD...

Date of notification: [] ID1/ Assignment's unique identifier: []

Fragment: Article 11 Addition Modification ...

GE84 ST61

Assignment characteristics: **Antenna characteristics**

Station information:
 4A/ Antenna site name: SONCEBOZ HAUTE JOUX
 4B/ Geographic area: SUI
 4C/ Longitude: 7° 9' 55" E
 Latitude: 47° 10' 46" N
 9EA/ Altitude of site above sea level: 1118 m
 3A1/ Call sign: []
 3A2/ Station identification: []

Emission characteristics:
 1A/ Assigned frequency: 89 MHz
 7AB/ Necessary bandwidth: 300 kHz
 9D/ Polarization: V
 8BH/ Horizontal e.r.p.: [] dBW
 8BV/ Vertical e.r.p.: 13 dBW
 7D/ Transmission system: 4

Antenna characteristics:
 9/ Antenna directivity: D
 9EB/ Maximum Effective Antenna Height: 594 m
 9E/ Height of Antenna Above Ground Level: 20 m

Coordination successfully completed with the following administrations

Available administrations	Selected administrations
AFG	D
AFS	F
AGL	
ALB	
ALG	

13C/ Notified remarks: Art 4,Art 5

T01

Online Validation

The [Online Validation](#) tool allows administrations to validate their notice file, before official submission via WISFAT

The processing system is currently **ONLINE**
Contact: brtpr_dp@itu.int

New Validation Logout

Refresh

Jobs History for user: manara

Test Packages 31412: click to show all

Job summary [Delete](#)

job id	job name	job status
31412	ugatest	Completed

Job Input

Adm	E-notice file	Number of Notices
UGA	UGAtest.txt	1

Job Output

Parse status: **T_PARSE_HAS_WARNINGS**

Total number of errors: 4

Total number of warnings: 1

Notice 1 (Line 4) - GT1/MODIFY

Line 4 : DeepVal Warning - Could not perform further notices validation checking, due to previous errors.

Line 1 (4) : Error : Either t_ref_plan_cfg OR t_sys_var & t_rx_mode should be submitted for this notice type.

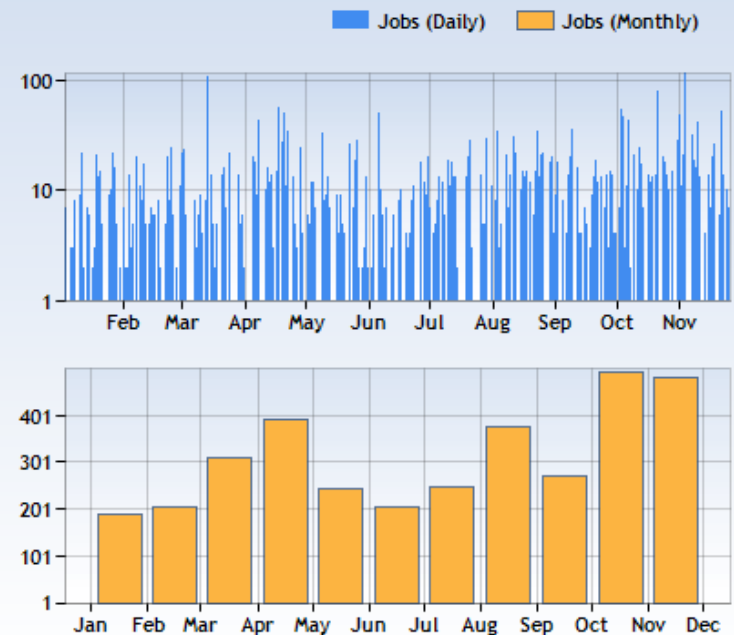
Line 17 (20) : Error : t_ref_plan_cfg : invalid value or make sure that the value is typed correctly

Line 9 (12) : Error : t_site_nae : is EITHER not applicable in this case OR check the spelling.

Line 1 : Error : t_site_name : mandatory key missing or the associated key value is invalid.

Reuses TerRaNotice validation software and eTools functionalities in a SOA architecture

2016 Statistics



- 64 Administrations
- 163 Users
- > 4500 Validation jobs

More during demo session!



Delivered prior to WRC-15



MIFR (Terrestrial Services) on-line query (BETA release)

Query system for the simultaneous retrieval of data from the terrestrial portion of the MIFR (FMTV, LFMF and FXM)

MIFR (Broadcasting)
 MIFR (FXM)
 MIFR (all)

MIFR (ALL): Selection Criteria

Administration	Geographic Area	Notice Type	Class of Station
AFG > AFS >> AGL >> ALB >> ALG >> ARG < ARM << ARS <<	ABW > AFG >> AFS >> AGL >> AIA < ALB << ALG << ALS <<	1A1 > 1A2 >> 1A4 >> 1A5 >> 1A7 < 1B1 << 1C1 << 1Z0 <<	AL > FA >> FC >> FD < FG << FL << FP <<

Recorded
 Pending

Assigned Frequency MHz: f_{min} f_{max} f_{min} ≤ Assigned Frequency ≤ f_{max} only

Unique Id. code given by Administration: Identifier assigned by the BR from to

Date of Receipt (from): Date of Receipt (to):

Site Name: TORINO

MIFR (All) IFL: 080623514

Administrative

Emission Characteristics

Assigned Frequency (MHz) **1052** Nature of Service
 Reference (carrier) Frequency
 Class of Emission **PXX-** Energy dispersal (kHz)
 Bandwidth Code **700K** System Type Code(s)

Station and Site Information

Operations

Operation 1

General Characteristics

Power Type	X	Polarization
Power to the Antenna (dBW)	30	Antenna Directivity
Radiated Power (dBW)	30 E	Azimuth of Maximum Radiation (°)
Maximum Antenna Gain (dB)		Maximum Effective Antenna Height (m)
Maximum Gain Toward the Local Horizon (dB)		Height of Antenna Above Ground Level (m)
Gain Type		Elevation Angle (°)
Maximum Power Density (dBW/Hz)		Beamwidth (°)
		Reference Antenna

Receiving Station Information

RX1

Site Name	Geographical Type	CIRCLE
Geographic Area	Zone ID	
Region 1	Geographical coordinates	007°39'00" E - 45°11'00" N
	Radius (km)	80

Findings Information

MIFR (All)

Total number of records 10. Click on headers to sort

Export to Excel | Google Earth

BR Id	Adm	Geo Area	Site Name	Location	Assigned Frequency (MHz)	Intent	
080015495	I	I	TORINO	007°44'00" E - 45°02'00" N	0.657	RECORDED	
080225070	I	I	TORINO COLLINA	007°42'00" E - 45°06'00" N	212.5	RECORDED	1A4 BT
080606153	I	I	TORINO COLLINA	007°40'00" E - 45°04'00" N	522	RECORDED	1A4 BT
080607250	I	I	TORINO	007°44'00" E - 45°02'00" N	546	RECORDED	1A4 BT
080608609	I	I	TORINO	007°39'00" E - 45°04'00" N	578	RECORDED	1A4 BT
080610086	I	I	TORINO	007°44'00" E - 45°02'00" N	626	RECORDED	1A4 BT
103046152	I	I	TORINO	007°44'00" E - 45°02'00" N	746	RECORDED	TB2
080623514	I	I	TORINO CASELLE	007°39'00" E - 45°11'00" N	1052	RECORDED	1B1
080623522	I	I	TORINO CASELLE	007°39'00" E - 45°12'00" N	1056	RECORDED	1B1
080623683	I	I	TORINO POIRINO	007°52'00" E - 44°55'00" N	1116	RECORDED	1B1 AM

Export data to Excel, Google Earth

More during demo session!

Web Interface for Submission of Frequency Assignments/allotments for Terrestrial Services

Submission of Notices for Terrestrial Services

YOU ARE HERE [HOME](#) > [ITU-R](#) > [TERRESTRIAL SERVICES](#) > [TERRESTRIAL PUBLICATION AND REGISTRATION DIVISION](#) > [SUBMISSION OF NOTICES FOR TERRESTRIAL SERVICES](#)

SHARE    

Submission of frequency assignment/allotment notices for terrestrial services to the BR for the update of the Master International Frequency Register (MIFR) and/or for the modification of Plans shall be made via the secured web interface WISFAT (Web Interface for Submission of Frequency Assignments/allotments for Terrestrial Services).

As stipulated in BR Circular-letter CR/297 dated 20 January 2009, only notices received via WISFAT, are considered as official submissions.

Access to this interface is restricted to registered notifiers, therefore administrations shall appoint notifier(s) for their administration and inform the BR by sending an official e-mail to brmail@itu.int giving the TIES username, name, position and official e-mail address.

Before submitting notices via WISFAT, administrations are strongly recommended to validate their submissions using the [Online Validation](#) tool. Please note that incomplete notices will be returned to the notifying administration in accordance with provision No. 11.27 of the Radio Regulations.

In addition, administrations are encouraged when submitting many files on the same day, to compress their files into one single file by using for example WinZip or WinRAR.

RELATED
LINKS

CONTACT
PERSON

[Notification Tutorial](#)

[Guidance for notification for Terrestrial Services](#)

Validation of Terrestrial Frequency Assignment/Allotment Notices

This tool is to assist administrations to validate their frequency assignment/allotment notices before their official submission via WISFAT.

- ▶ [How to use the online validation tool](#)

[Access to Online Validation](#)

For Official Submission of notices

This web interface is accessible only to registered notifiers, having a TIES account.

- ▶ [WISFAT Information document](#)
- ▶ [WISFAT Video example](#)

[Access to WISFAT](#)

[Portal description](#)



Objectives

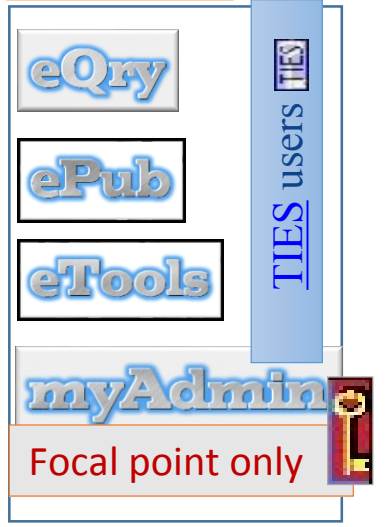
Bring the BR closer to Administrations with added-value services

- Up-to-date broadcasting data
- Special Section at publication date
- Calculation-on-demand
- Easily follow-up on plan modification procedures and related deadlines

Outcome

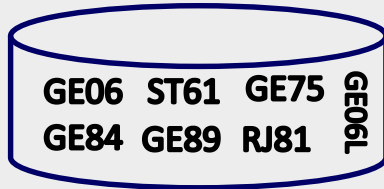
- Reduce workload on both BR and administrations
- Reduce the need for printed documents

Output



eQry

“Online search
on the Plans ”



Read-Only copy of BR
Database (Updated daily)

Search by:

- Administration
- Geographic Area
- Frequency
- Administration Unique Identifier
- BR Identification number
- Status (Recorded/Published)
- Site/Allotment name

ePub

“Special sections,
the publication day!”



Database Snapshots
at publication date

Search by:

- BR IFIC number
- Administration
 - My notifications
 - Notifications which affects me

eTools

“On-demand test calculations”

2016 statistics

More than **2000 jobs** run by **188 users** from **88 Administrations**



Calculation Type

GE06D Plan Modification

GE06D Compatibility Analyses

GE84 Compatibility Analyses

CA Compatibility Analyses

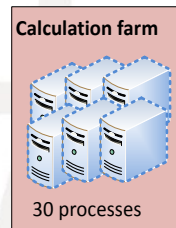


RJ81 Plan modification and what-if studies

ITU-R P.1812 v4 & P.1546 v5



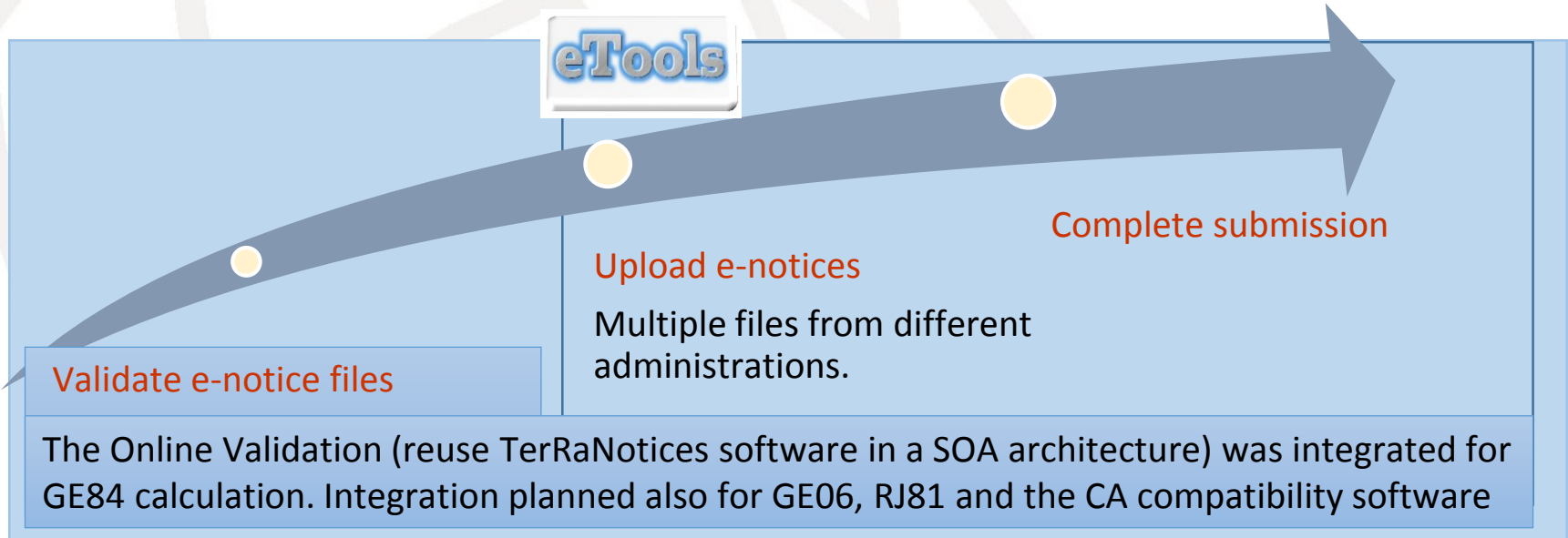
Back-end infrastructure



ITU internal farm: 30 processes distributed in such a way to minimize waiting time.

eTools: e-notice submission

GE06, RJ81, CA Compatibility GE84



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



Check your TIES account!

yourTIESname@ties.itu.int

Job processing

The processing system is currently **ONLINE** (28 processes available)

Please select the calculation type

CA_compat ▼ CA_compat ▼

New Calculation

Refresh manara ▼

Jobs History for user: manara

Test Packages: click to hide all

Job Id	Job Name	Job Status	Job Type	Date of Request	Date of Start Run	Date of Completion
34977	1st iteration	Success	CA_compat	3/3/2017 8:03:32 PM	3/4/2017 11:56:00 AM	3/4/2017 12:00:06 PM
35012	testVIR	Failed	CA_compat	3/6/2017 5:20:07 PM	3/6/2017 5:20:09 PM	3/6/2017 5:20:10 PM
34912	test	Success	CA_compat	3/2/2017 2:59:18 PM	3/2/2017 3:20:17 PM	3/2/2017 3:21:28 PM

Job summary

Delete Share

job id	job name	job status
35012	testVIR	Failed

Job Input

Adm	E-notice file	Number of Notices
USA	testVIR.txt	1

Job Output: ERROR

Problem parsing notices:
Missing effective antenna height pattern for adm: USA site name: CHARLOTTE AMALIE

Please contact brbcd@itu.int if the error message is unclear

Privacy and collaboration

Jobs (e-notice and results) are owned and visible ONLY by submitter...BUT...



... facilitate coordination!



...you can now share them with other eBCD registered users! (web2.0)



Around **200 jobs** shared by **72 users** from **45 Administrations**



P.1812-4(07-15) Beta Release!

Propagation prediction using terrain profile (deterministic model)

- 30 MHz - 3 GHz
- 0.25 km - 3000 km
- 1% < time < 50%
- 1% < locations < 99%
- Rx and Tx hgt agl <= 3km

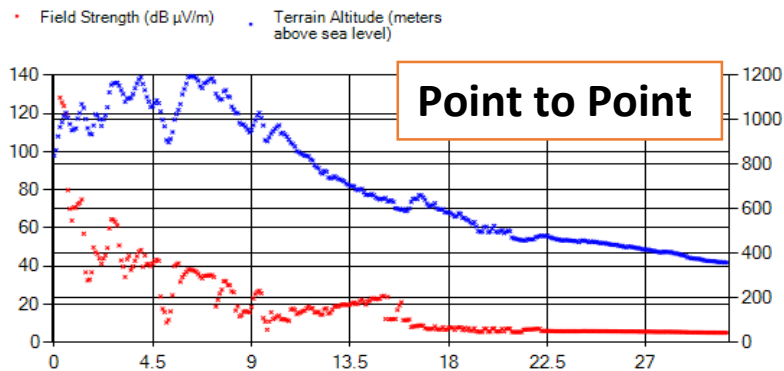
SRTM3 terrain database 3 arc-sec resol. (90 m)
Planned to move to 1 arc-sec (30m) early 2017

P.1546-5(09-13) Beta Release!

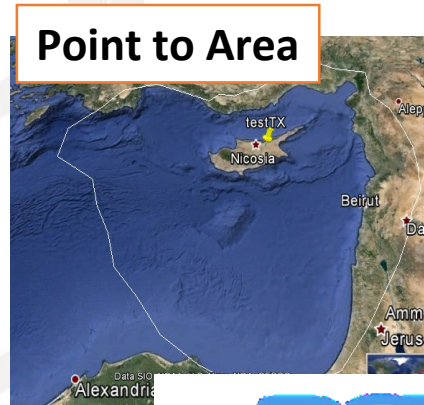
Propagation prediction (empirical model)

- 30 MHz - 3 GHz
- 1 km - 1000 km
- 1% < time < 50%
- 1% < locations < 99%
- TX eff hgt <= 3km

Terrain database can be used (clearance angle correction) to improve accuracy



More during demo session!





Committed to connecting the world



ITU - ATU REGIONAL RADIOCOMMUNICATION SEMINAR FOR AFRICA

**DAKAR, SENEGAL
27-31 MARCH 2017**

www.itu.int/go/ITU-R/seminars



Organised by:



Thank you!

Further info:
bangaly-fode.traore@itu.int