BR software tools for terrestrial services

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Agenda

- Overview of BR International Frequency Information Circular (BRIFIC): software and database

- Overview of BR online tools
  - Online Validation and eMIFR tools, WISFAT (official submission to the BR) for all terrestrial services
  - The eBCD2.0 platform for broadcasting services
  - eTools: Compatibility analyses calculations

- Compatibility Analyses Display software (CA Display)
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
Preliminary validation of electronic notice files

Creation and preliminary validation of electronic notices

Query the BR IFIC database

Database: TerRaBase

- FM/TV
- LF/MF
- FXM

Software

Install on PC
Run from the DVD

More during demo session!
Notice file and TerRaNotices

<table>
<thead>
<tr>
<th>Notice type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAH_fixed_nf.txt</td>
<td>Head section BAH - 02/08/2016</td>
</tr>
<tr>
<td>T02</td>
<td>ADD</td>
</tr>
<tr>
<td>T02</td>
<td>ADD</td>
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<td>T02</td>
<td>ADD</td>
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<td>T02</td>
<td>ADD</td>
</tr>
</tbody>
</table>
Online Validation

The **Online Validation** tool allows administrations to validate their notice file, before official submission via WISFAT.

- More than TerRaNotices: Validation also against the MIFR database
- Reuses TerRaNotice validation software and eTools functionalities in a SOA architecture

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**2018 Statistics**

- 50 Administrations
- 90 Users
- > 700 Validation jobs

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**More during demo session!**
eMIFR

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

Delivered prior to WRC-15

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

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.

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
**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

not TIES users? Use user1 credential
N.B. TIES email addresses are not be supported any longer as of September 2017
eQry

“Online search on Plans and MIFR”

Search by:

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

Read-Only copy of BR Database (Updated daily)

ePub

“Special Sections, the publication day!”

Search by:

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

Database Snapshots at publication date
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

2018 statistics
More than **5500 jobs** run by **225 users** from **95 Administrations**

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

Validate e-notice files
Multiple files from different administrations.

Upload e-notices

Complete submission

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

The Online Validation (reuse TerRaNotices software in a SOA architecture) was integrated for GE84 calculation. Integration planned also for GE06, RJ81 and the CA compatibility software.
eTools: job processing, privacy and collaboration

Job processing

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

Job summary

<table>
<thead>
<tr>
<th>job id</th>
<th>job name</th>
<th>job status</th>
</tr>
</thead>
<tbody>
<tr>
<td>35012</td>
<td>testVIR</td>
<td>Failed</td>
</tr>
</tbody>
</table>

Job Input

<table>
<thead>
<tr>
<th>Adm</th>
<th>E-notice file</th>
<th>Number of Notices</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>testVIR.txt</td>
<td>1</td>
</tr>
</tbody>
</table>

Job Output: ERROR

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

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

Please contact brbcd@itu.int if the error message is unclear
Interference calculations between **new requirements** (from electronic notification files) and **existing MIFR notices and recorded assignments**

- Based on the EBU software developed for the RRC06 planning
- **Main changes**
  - Propagation model ITU-R P.1546-5 (refractive index correction) vs ITU-R P.1546-2 (propagation zones)
  - Protection ratios for all digital standards (vs. DVB-T only)

Similar software was instrumental in planning activities in regional organizations

**ATU (2012-2013)**

**ASMG (2014-2015)**

MS Access mdb file to be visualized with CA Display

More during demo session!
eTools: RJ81
plan modification and what-if studies

Following CITEL requests (2014-2015)

- Plan Modification
- What-if studies
- What-if studies configurable Enom
eTools: ITU-R P series calculations

**P.1812-4(07-15)**

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 2018

**P.1546-5(09-13)**

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

**Point to Point**

**Point to Area**

More during demo session!
CA Display

- Standalone application for the visualization of compatibility analyses results and search for new channels
- Web-based installation from the ITU Regional Frequency Coordination for Central America and Caribbean [web page](#)
- Automatic updates (check for updates at application startup)
- Input: MS Access database downloaded from eTools
- Possibility to perform detailed one-to-one interference calculations

Manual available from the Help Menu
**CA Display**

Compatibility status

<table>
<thead>
<tr>
<th>Administration</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOM</td>
<td>UHF(470-598 MHz)</td>
</tr>
<tr>
<td>Type of Analysis</td>
<td>Margin</td>
</tr>
<tr>
<td>Digital-to-Digital</td>
<td>Do not set a filter on Margin</td>
</tr>
</tbody>
</table>

| ID | Aff Ad | Aff Ga | Aff N | Aff AdminRealId | Aff Site/Alloc Name | Aff Ac C | Aff Ch | Int Ad | Int Ga | Int Not Ty | Int AdminRealId | Int Site/Alloc Name | Int Ac C | Int Ch | Int | 88V (dBv) | 88V (dBv) | Distance | CNFS | Margin | Relation |
| 48 | DOM | DOM | T02 | DUMMY_DOM | CDRT ESPAILLAT | 24 | 24 | DOM | DOM | T02 | DUMMY_DOM | CDRT NAJAYO ARRIBA | 24 | 24 | 45.2 | Overlap |
| 47 | DOM | DOM | T02 | DUMMY_DOM | CANAL 27 STO DGO | 27 | 27 | DOM | DOM | T02 | DUMMY_DOM | CANAL 27 SAN CRISTO | 27 | 27 | 26.9 | Overlap |
| 48 | DOM | DOM | T02 | DUMMY_DOM | CANAL 27 LA HOZ | 27 | 27 | DOM | DOM | T02 | DUMMY_DOM | CANAL 27 EL MIGOTE | 27 | 27 | 26.9 | Overlap |
| 49 | DOM | DOM | T02 | DUMMY_DOM | CANAL 27 SAN CRISTO | 27 | 27 | DOM | DOM | T02 | DUMMY_DOM | CANAL 27 LA HOZ | 27 | 27 | 26.9 | Overlap |
| 50 | DOM | DOM | T02 | DUMMY_DOM | CANAL 27 EL MIGOTE | 27 | 27 | DOM | DOM | T02 | DUMMY_DOM | CANAL 27 LA HOZ | 27 | 27 | 26.9 | Overlap |
| 51 | DOM | DOM | T02 | DUMMY_DOM | PROGRESSIO STGO | 29 | 29 | DOM | DOM | T02 | DUMMY_DOM | PROGRESSIO EL MOGO | 29 | 29 | 30 | Overlap |
| 52 | DOM | DOM | T02 | DUMMY_DOM | PROGRESSIO STGO | 29 | 29 | DOM | DOM | T02 | DUMMY_DOM | PROGRESSIO EL MOGO | 29 | 29 | 30 | Overlap |
| 53 | DOM | DOM | T02 | DUMMY_DOM | SPORT VISION LOMA D | 35 | 35 | DOM | DOM | T02 | DUMMY_DOM | SPORT VISION ALTO BA | 35 | 35 | 9.9 | Overlap |
| 54 | DOM | DOM | T02 | DUMMY_DOM | SPORT VISION LOMA D | 35 | 35 | DOM | DOM | T02 | DUMMY_DOM | SPORT VISION ALTO BA | 35 | 35 | 9.9 | Overlap |
| 55 | DOM | DOM | T02 | DUMMY_DOM | SPORT VISION LOMA D | 35 | 35 | DOM | DOM | T02 | DUMMY_DOM | SPORT VISION ALTO BA | 35 | 35 | 9.9 | Overlap |
| 56 | DOM | DOM | T02 | DUMMY_DOM | SPORT VISION LOMA D | 35 | 35 | DOM | DOM | T02 | DUMMY_DOM | SPORT VISION ALTO BA | 35 | 35 | 9.9 | Overlap |
| 57 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 16 | 16 | 60.7 | 22.28 Interference |
| 58 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | 60.7 | 22.28 Interference |
| 59 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | 60.7 | 22.28 Interference |
| 60 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | 60.7 | 22.28 Interference |
| 61 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | 60.7 | 22.28 Interference |
| 62 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | 60.7 | 22.28 Interference |
| 63 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | 60.7 | 22.28 Interference |
| 64 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | HTI | HTI | T02 | BOUTILLIERS | CERTV LA HOZ | 14-51 | 16 | 60.7 | 22.28 Interference |

- **Show input data details for affected**
- **Show general analysis results for affected**
- **Show input data details for interferer**
- **Show general analysis results for interferer**
- **Copy value to clipboard**
Channel definition (see manual)

- Acceptable: Notified (but not yet in the MIFR)
- Available: Acceptable but not interfering with existing analogue or FXM
- Assignable: Available compatible with analogue, FXM, and digital (assign. + req.)
- Assigned: Already recorded in the MIFR (never for requirements)
“Thanks for your attention!”