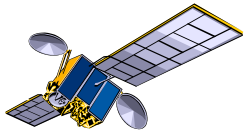
Graphical Interference Management System

(GIMS)



Akim FALOU DINE

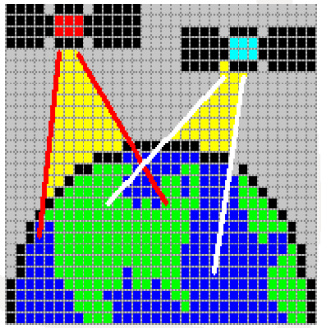
Niamey, 5-9 December 2011

Committed to connecting the world

Introduction

Data

Programming



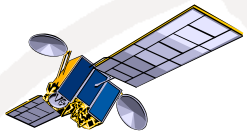
Query

Interference

GXT

Capture

Introduction



- GIMS in the BR Software jungle…

Introduction - I

Appendix 4 – GSO Satellites

- **Alphanumeric Data**
  - SpaceCap
  - SpaceQuery
  - SpaceCom
  - SpaceVal

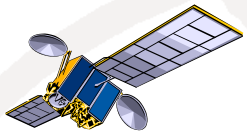
- **Graphical Data**
  - Antenna Gain Contours (B.3.b)
  - Antenna Gain towards GSO (B.3.e)
  - Service Area (C.11.a)
  - GIMS
    - GimsQry
    - GXTEdit

SpacePub
GIBC
MSPACE

Introduction - II

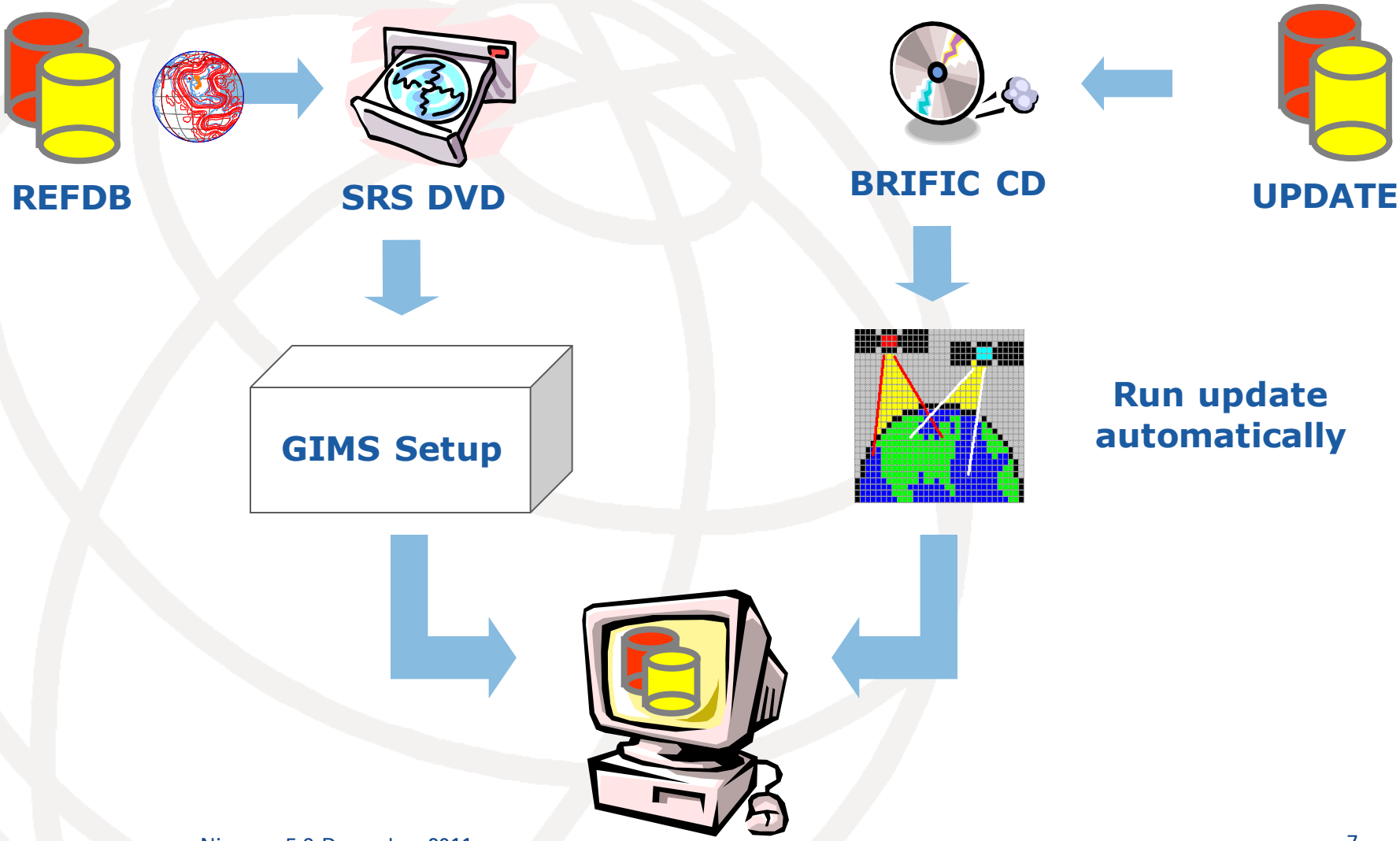
- Why graphical data ?
  - Describe antenna gain footprint
  - Describe service area
  - <u>Used in compatibility analysis software</u>
    - GIBC
      - Appendix 8
      - PFD Terrestrial (Art 21, Appendix 5)
      - PFD Space (Appendix 30)
      - Appendix 30B
    - MSPACE
      - Appendix 30, 30A

Data



- GIMS in your computer jungle…

Data Setup


REFDB
SRS DVD
BRIFIC CD
UPDATE
GIMS Setup
Run update automatically

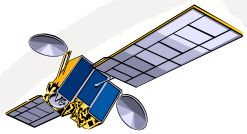
Data Update

- Incremental update
  - BR IFIC CD
  - All modifications done in the past two weeks
  - Not related to the SNS increment

- Full Update
  - SRS DVD

- <u>Why updating?</u>
  - Get the latest data
  - **Keep SNS/SPS synchronized with GIMS**
    - Important to run MSPACE & GIBC

Query



- GIMS, a SpaceQry for graphical data…

Query Tools - GIMS

- **Database Explorer**
  - Hierchical view
  - Selection of diagrams to view
  - Filtering (adm code,…)
  - <u>Bulk operations</u>
    - Export
    - Clone
    - …

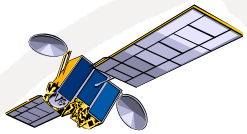
Query Tools - GimsQry

- **GimsQry**
  - List view
  - Filtering (adm code, diagram type,…)
  - Coverage query (country, points)
  - View listed diagrams with GIMS

Query Tools - Others

- **SpaceQry**
  - Beam level screen
  - View diagrams with GIMS
- **SpacePub**
  - Print of diagrams
- **Gimapi32 Library**
  - Do it yourself

Capture



- GIMS, a SpaceCap for graphical data…

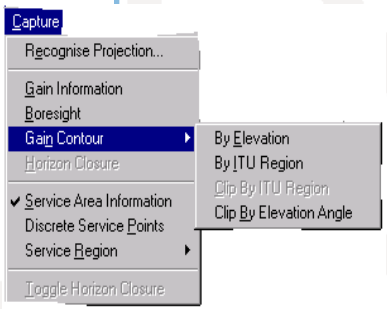
Capture

"Drawing" on Paper

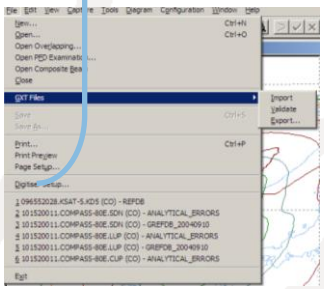
Digitizer

"Simple" diagrams e.g.: global beams

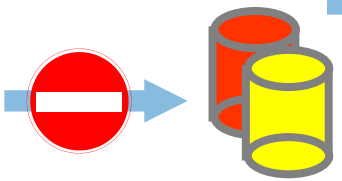
Elliptical beams



GXT File

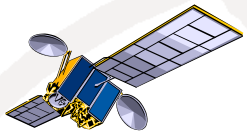


Personal DB



REFDB

GXT



- Exchange of graphical data

GXT Files

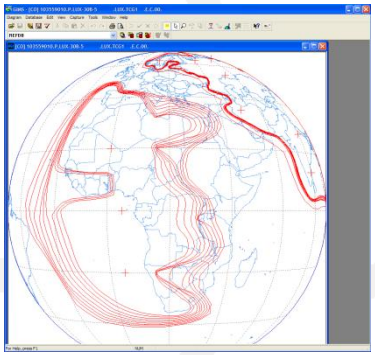
- Textual representation of diagram data
  - Attachment 2 to CR58
  - Electronic notification

```
[FormatInfo]
format_ver=1
[GeoMain]
adm=J
sat_name=JCSAT-2
long_nom=154.0000
n_diag=1
[COHeader]
beam_id=DCH
emi_rcp=E
polar_disc=C
reason=C
n_bore=1
n_cont=9
[B1]
gain=0.00
p=119.0308;35.1593
[C1]
gain=-2.00
```

Import

Export

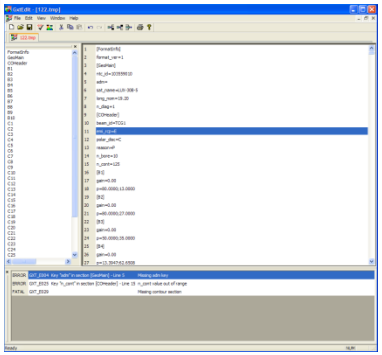
GIMS



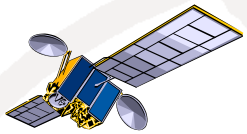
- Validate
- Correct
  - Filter tool

Edit & Validate

GXTEdit



Interference

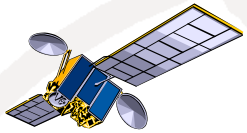


- GIMS, an interactive GIBC

Interference Tools

- **Gain Interpolation**
  - Click on map
  - Enter coordinates
- **PFD Examination**
  - One emission (vs. all emissions with GIBC)
  - Article 21, Appendix 30 & 30B
  - Visualize excess area
  - List of affected countries

Programming



- Do it yourself…

GIMS Libraries

- **Gimapi32.dll**
  - Browse REFDB
  - Browse personal DBs
  - Import/Export GXT files
  - Save into personal DBs
- **Shapedbm.dll**
  - Calculate gain
- **On SRS DVD**
  - Documentation
  - Code samples
- **Works from most languages on Windows**
  - C, C++, Fortran, Visual Basic, C#...

FAQ

- **Where can I get GIMS?**
  - SRS DVD
  - BR IFIC CD
  - http://www.itu.int/ITU-R/software/space/gims/index.html
- **How do I…?**
  - On-line help (F1)
  - brsas@itu.int
  - Workshop
- **Does GIMS run on Linux?**
  - No! Only on
    - Windows® 2000
    - Windows® XP
    - Windows Vista®