Technical and Regulatory Examinations under AP30/30A & related BR Software

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Committed to connecting the world

Outline

- Ap30/30A Technical Examinations in ITU-R: Who does what?
- Protection Criteria
- BR Software Packages SPS and GIBC
- Exercises on Appendix 30 Article 4 networks:

  I. Publication of Part A Special Sections
  II. Publication of Part B Special Sections

- Technical Examinations:
  SOF in guard bands - Ap30/30A Art.2A

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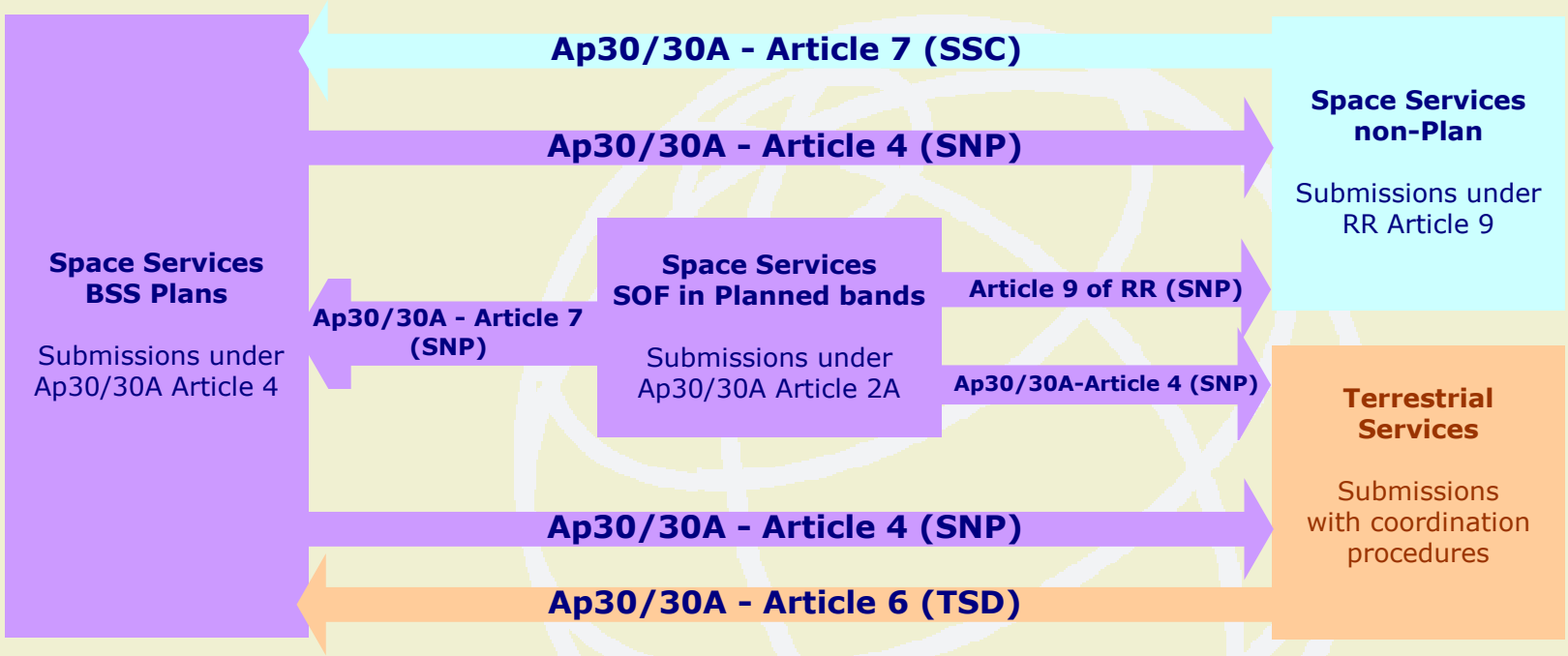
Ap30/30A Technical Examinations in ITU-R: Who does what?



SNP: Space Notification and Plans division
SSC: Space Systems Coordination division
TSD: Terrestrial Services Department

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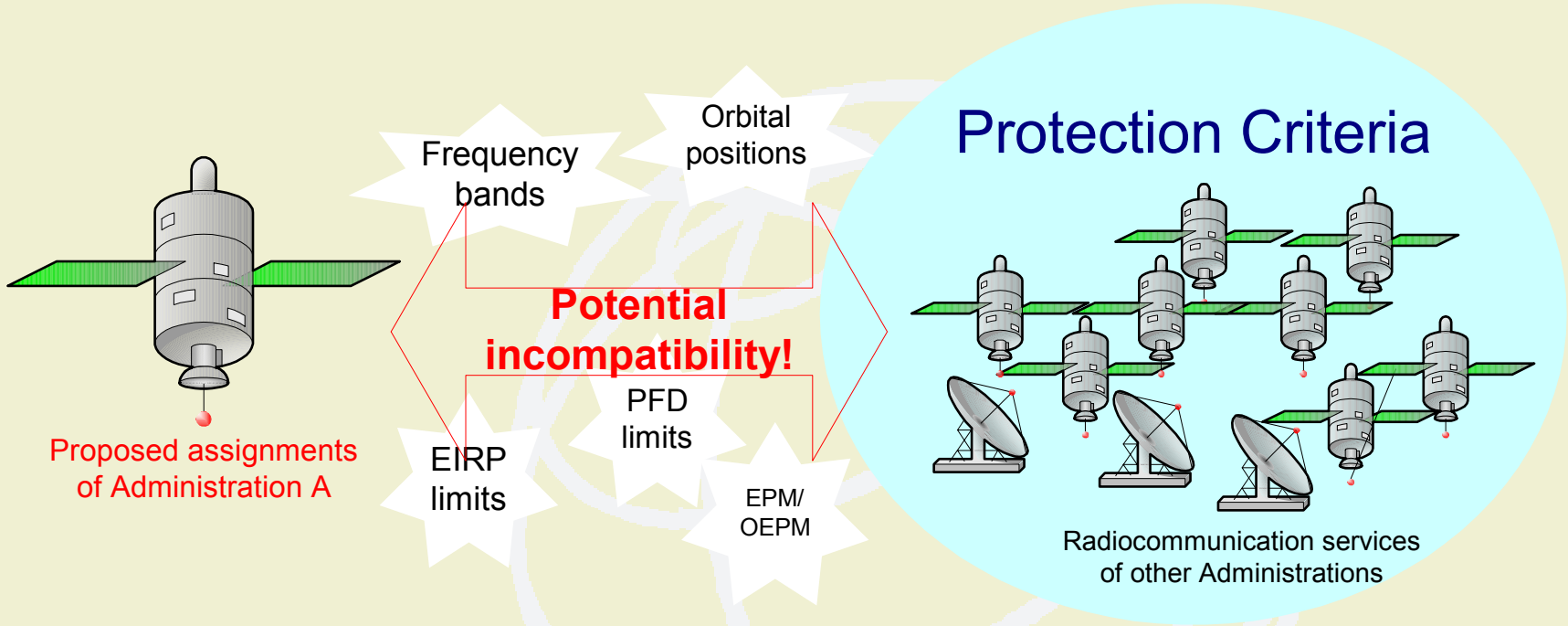
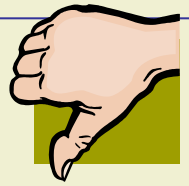
Protection Criteria Concept



Protection Criteria Categories

Hard Limits



- ✓ If exceeded ➔ the Submission is not receivable (unfavorable) and virtually returned to notifying administration
- ✓ To preserve current and future use of a Radiocommunincation Service in general

Coordination Trigger Limits

- ✓ Agreements (implicit or explicit) of affected administrations is required
- ✓ To protect:
  - **Existing assignments** of Space Services Networks:
    - BSS Plans and List - AP30/30A
    - Pending complete AP4 information
    - Networks with overlapping necessary bandwidth
  - **Existing and future terrestrial services** on territories of administrations

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What Is the Purpose of SPS?

Coordination Requirements

Minimize Interference

What If Studies

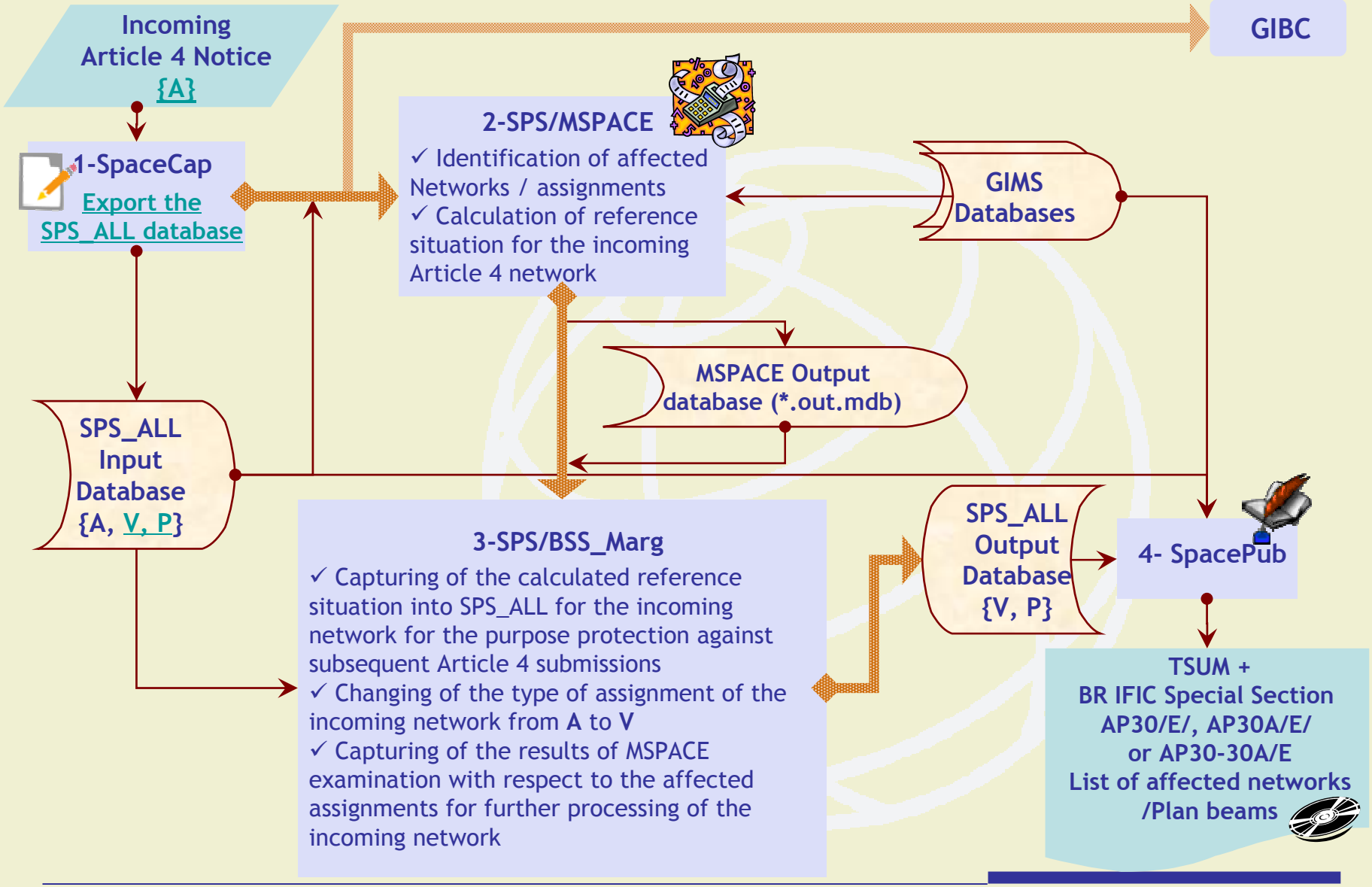
When to use SPS?

BSS Down Link R1&3 Plan
Appendix 30

BSS Feeder Link R1&3 Plan
Appendix 30A

Region 2 Plan
Appendices 30 & 30A

SPS Package - Ap.30/30A Art.4, Inter-service/region Tech. Examination



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What's the Purpose of GIBC?

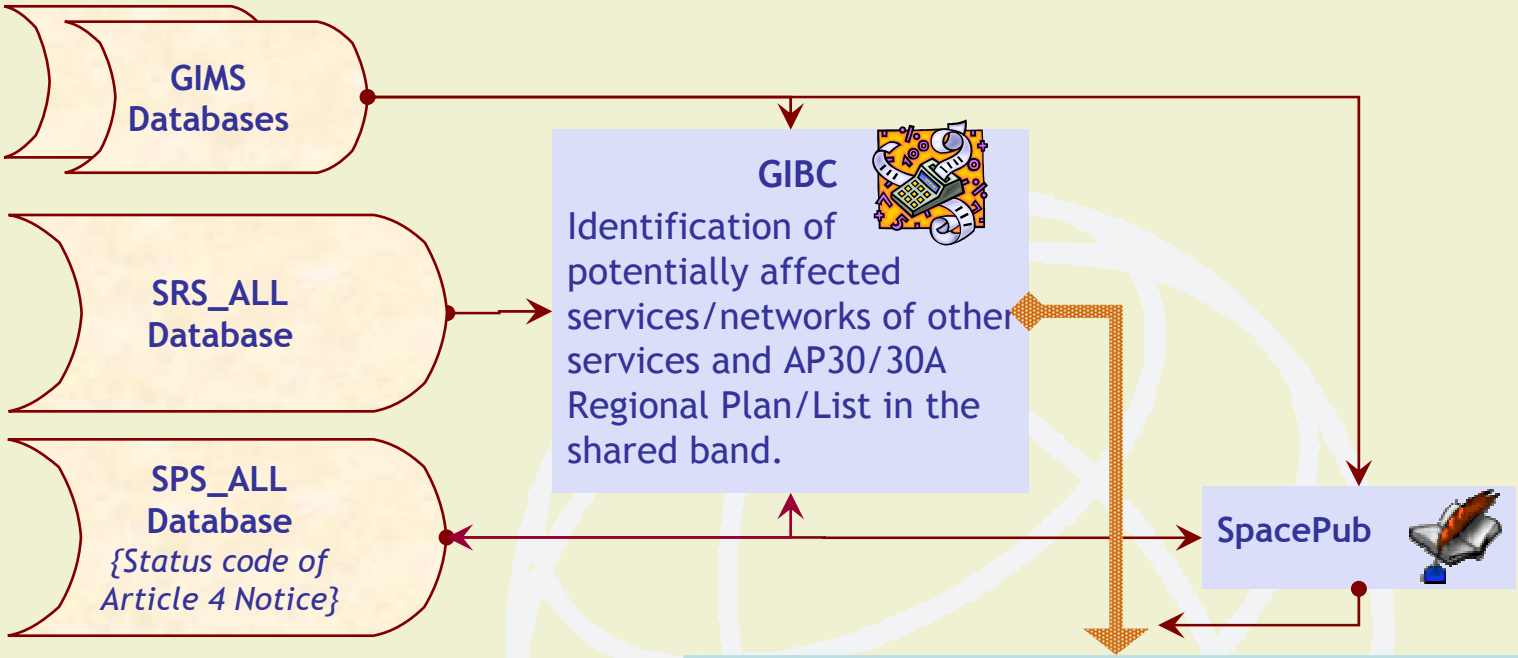
PFD Analysis Terrestrial

PFD Analysis Space

Inter-service, Inter-region coordination requirements

ΔT/T

GIBC Package - Ap.30/30A Art.4, Inter-service/region Tech. Examination



TSUM + BR IFIC Special Sections AP30/E/, AP30A/E/ or AP30-30A/E

List of:

- ✓affected Plan beams, List or Article 4 Networks in the other regional Plan/List
- ✓list of affected non-planned BSS and FSS Networks
- ✓list of administrations whose
- ✓terrestrial services are affected

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Exercise I : Reporting (1)

This exercise will show you how to use SPS_Reports to get the coordination requirements under 4.1.1 a) & b) of Appendix 30.

In the exercise scenario, you have BR IFIC 9999 that contains the Part A publication of three Article 4 networks.

The database SPS_ALL_IFIC9999.mdb is the SPS database distributed on the BR IFIC CD-ROM.

The three networks are:

- ✓ 97552999 / R1&3 DN-LINK
  - Regions 1&3 Downlink
- ✓ 97554999 / R1&3 FD-LINK
  - Regions 1&3 Feeder-link
- ✓ 102555999 / R2-NETWORK
  - Region 2

Exercise I : Reporting (2)

Launch SPS_Reports **from Start Menu/BR Space applications/SPS/**

1. **Open the database *AP30_R1&3 DN-LINK_mspace_result.MDB* in the folder *Exercise I***

   Note that SPS_Reports works with the MSPACE output database **that is also published on the BR IFIC**

2. **Click on the** Compressed Report **button**

3. **In the report window, select the option** PFD and EPM **and click on the button** Create Draft of Special Section

4. **Rename the file *SS_AP_30C.rtf* that was just created into *DL_PartA.rtf***

5. **Have a look at that file to see the information it provides**

Exercise II: SPS Package application - Part B analysis (1)

You will now change the characteristics of your network in order to decrease the number of affected networks with SpaceCap

Run MSPACE and check that less administrations are affected Sample MSPACEg Software Output Report Files

Use GIBC to evaluate coordination requirements with terrestrial services and FSS networks

Startup SpaceCap to prepare the notice

1. Open the database *SPS_ALL_IFIC9999.mdb* in the folder *\Exercise II*
   (This is a copy of the SPS database as published on BR IFIC 9999)

2. Export the notice 97552999 into a new database *Part B.mdb* in *\Exercise II*
   Uncheck the option Keep Findings and Ref. Situations.
   This is important to ensure that the notice is now viewed as an addition and not left as "Victim", so that interference from it is calculated
   - ✓ **Check** the option Keep group ids of the source

3. Open the database *Part B.mdb*. Uncheck the status 01 read only

4. Export the modified notice back into *SPS_ALL_IFIC9999.mdb* in the folder *\Exercise II*
   - ✓ **Check** the option Replace Notice in Target
   - ✓ **Check** the option Keep group ids of the source

Exercise II: SPS Package application - Part B analysis (3)

Startup MSPACE to calculate new interference

1. As input database select *SPS_ALL_IFIC9999.mdb* in the folder *\Exercise II*
2. Select the R1&3 down link plan
3. Accept the proposed output database name and findings file name
4. Add GIMS.mdb and cb.mdb
5. Start the analysis and leave the analysis description empty
6. When the analysis is completed, go to the Compressed Report tab
7. Check the option PFD and EPM
8. Create a draft of Special Section (in RTF format)
9. You can compare results with those of Exercise I

Startup GIBC to calculate new interference

1. **Go to the tab** PFD (Terrestrial serv.)

   - Type in the network ID: 97552999
   - Select *Triggers* as the **Examination**

2. **Go to the tab** Tools/Options

   - As the **SRS Database**, select *SPS_ALL_IFIC9999.mdb* in the folder *\Exercise II*
   - As **Additional GIMS Databases**, choose *gims.mdb and cb.mdb* in *\Exercise II*
     Although all beams are elliptical, the PFD program does not take that information from the SPS database but from GIMS, which means that each ellipse defined in SPS must also be defined in a GIMS database

3. **Start the analysis and check the file *PFD.LST* in the output folder**

4. **You may also run a** PFD (Space serv.) **analysis. If you do so, do not forget to add an** Additional SRS DB **in the Tools/Options tab; select the database *srs.mdb* in the folder *\Exercise II***

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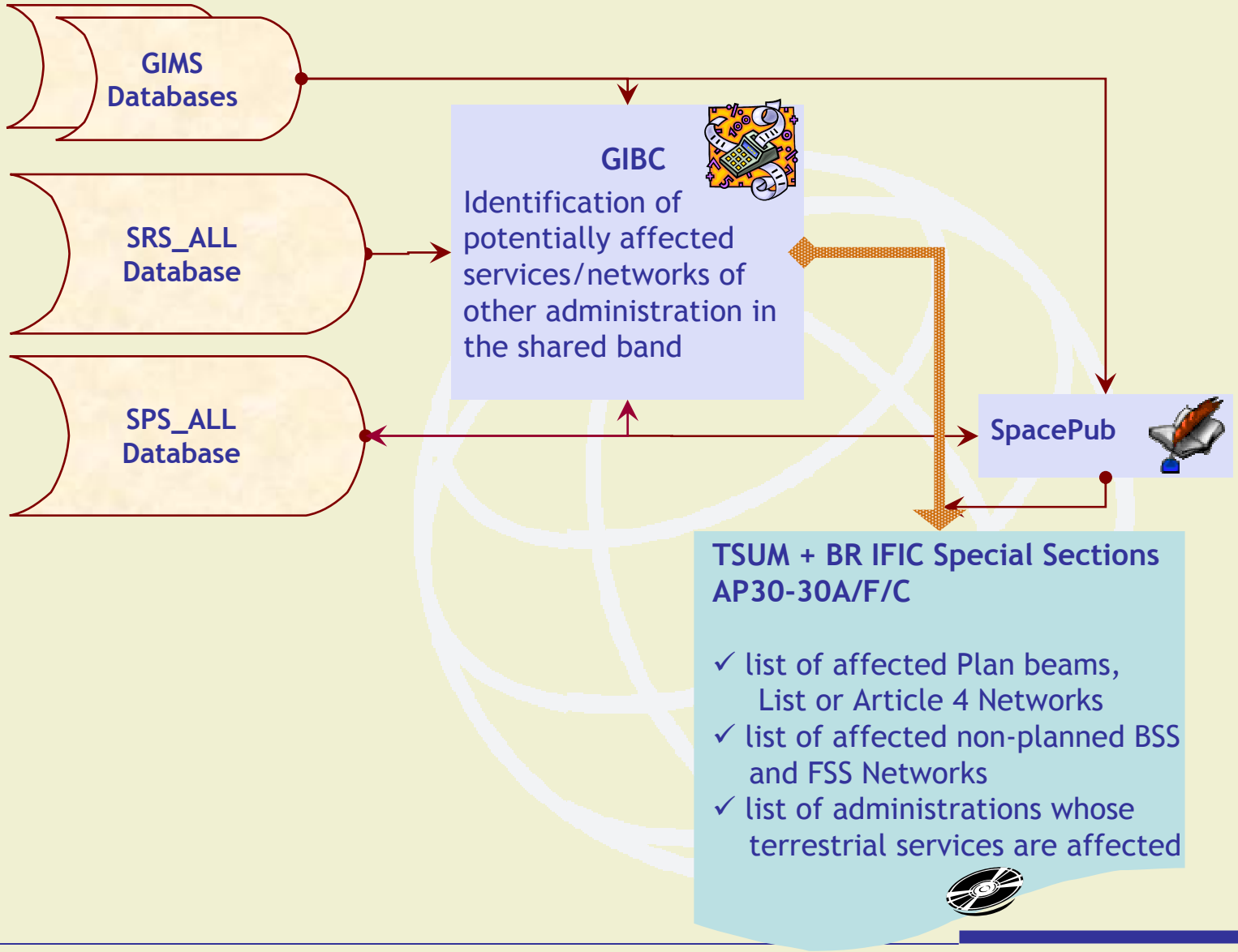
GIBC Package - Ap30/30A Art.2A, Technical Examination



Any questions?

Thank you

References and Explanatory Notes (1)

Assignment Type	***A***: Incoming Article 4 under examination without Reference Situation. ***V***: Pending Article 4 network published in Part A – receives interference from other types of assignments but its interference caused to them is not taken into account. ***P***: Plan/List assignment.
EPM/OEPM	*Equivalent Protection Margin* *Overall Equivalent Protection Margin*
Pending Article 4 submissions	Article 4 submissions whose Appendix 4 information is received by the Bureau on or before the date of receipt of the incoming network.

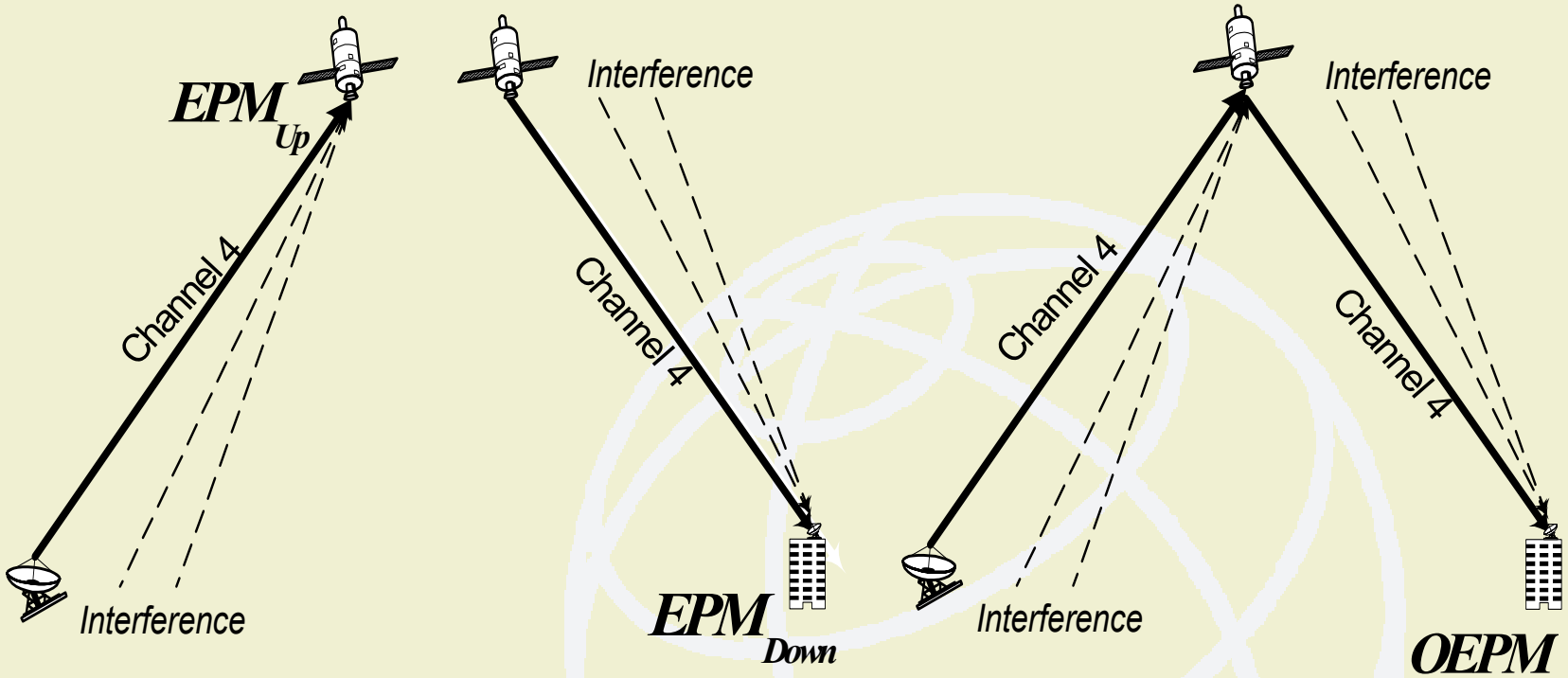
References and Explanatory Notes (2)

SPS_ALL	*Space Plans' Systems Database* Contains currently AP30/30A Plans, Lists, Article 4 and Article 2A assignments. Released each two weeks in the BR IFIC CD-ROM. It can be downloaded from the following URL: http://www.itu.int/en/ITU-R/space/plans/Pages/AP30-30A.aspx
SRS_ALL	*Space Radiocommunications Stations Database* Contains non-planned Spaces Services Notices. Released quarterly in BR SRS on CD-ROM. Should be incrementally updated using BR IFIC CD-ROM between two subsequent release of SRS on CD-ROM.

SPS ?

1. **Package of software programs to determine intra-service and intra-region coordination requirements for space networks of the planned services**
2. **Availability**
   - ✓ SRS CD/DVD
   - ✓ BR IFIC CD
   - ✓ http://www.itu.int/en/ITU-R/space/plans/Pages/AP30-30A.aspx
     - Latest version
     - Latest data files
3. **Requires GIMS to be installed**
   - ✓ GIMS data up to date!
4. **Support**
   - ✓ MSPACE manual
   - ✓ Software related question: brsas@itu.int

BSS Appendix 30/30A



Regions 1 and 3 Approach
(separated links)

Region 2 Approach
(overall link analyses)

FSS : Single-entry & aggregate C/I