

ITUWRS
ONLINE2020

29TH WORLD RADIOCOMMUNICATION SEMINAR
30 November - 11 December 2020

BR Space Software and Databases

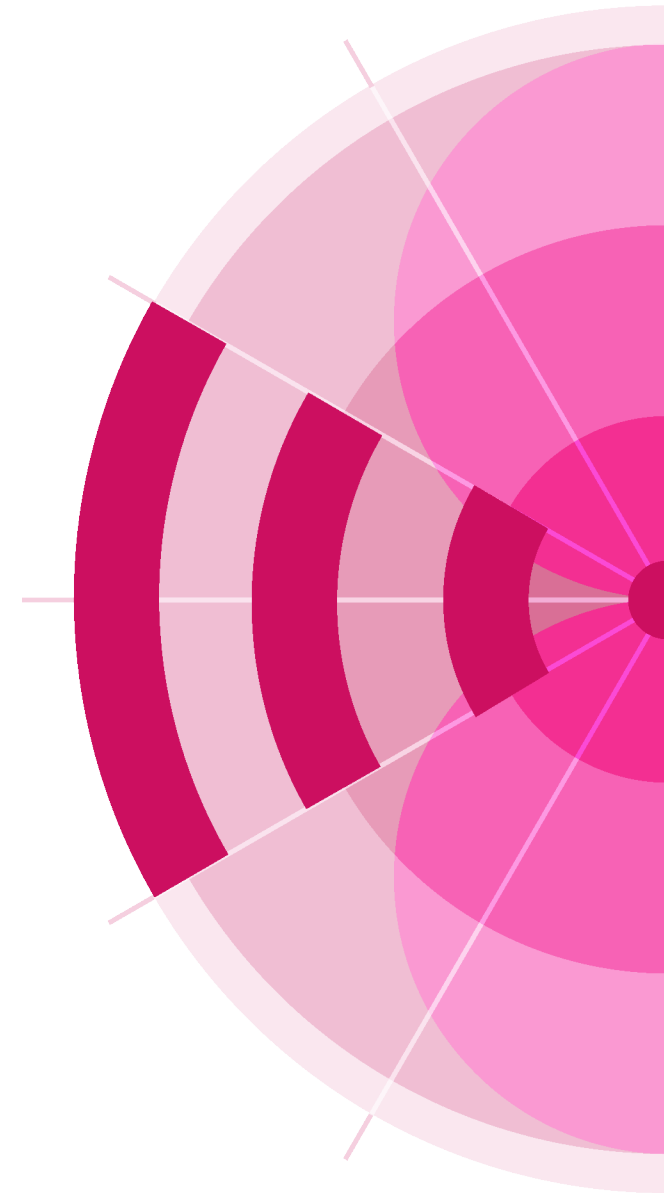
Miroslav Ćosić

Space Application Software Division

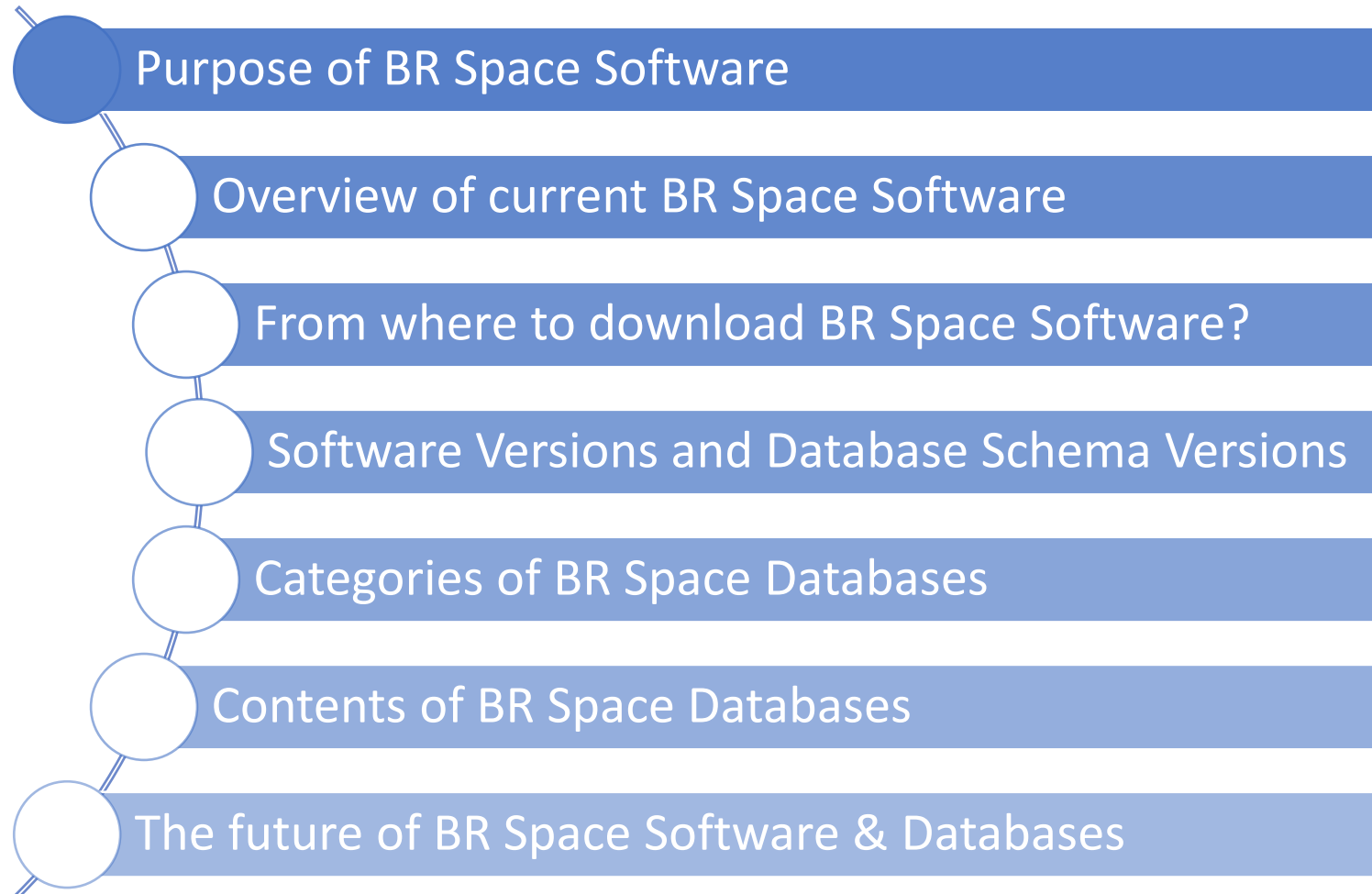
BR/IAP/SAS

www.itu.int/go/wrs-20

#ITUWRS



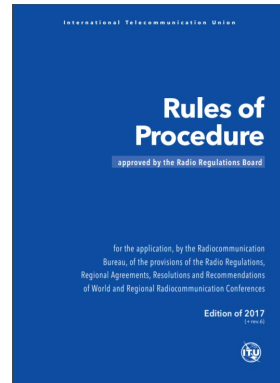
BR Space Software and Databases



Purpose of BR Space Software

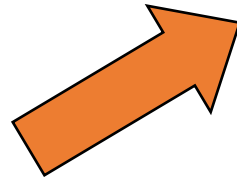
Radio Regulations (RR)

Incorporate the decisions of the World Radiocommunication Conference



Rules of Procedure

Complement the RR by providing clarification of the application of specific RR provisions and processes/exams



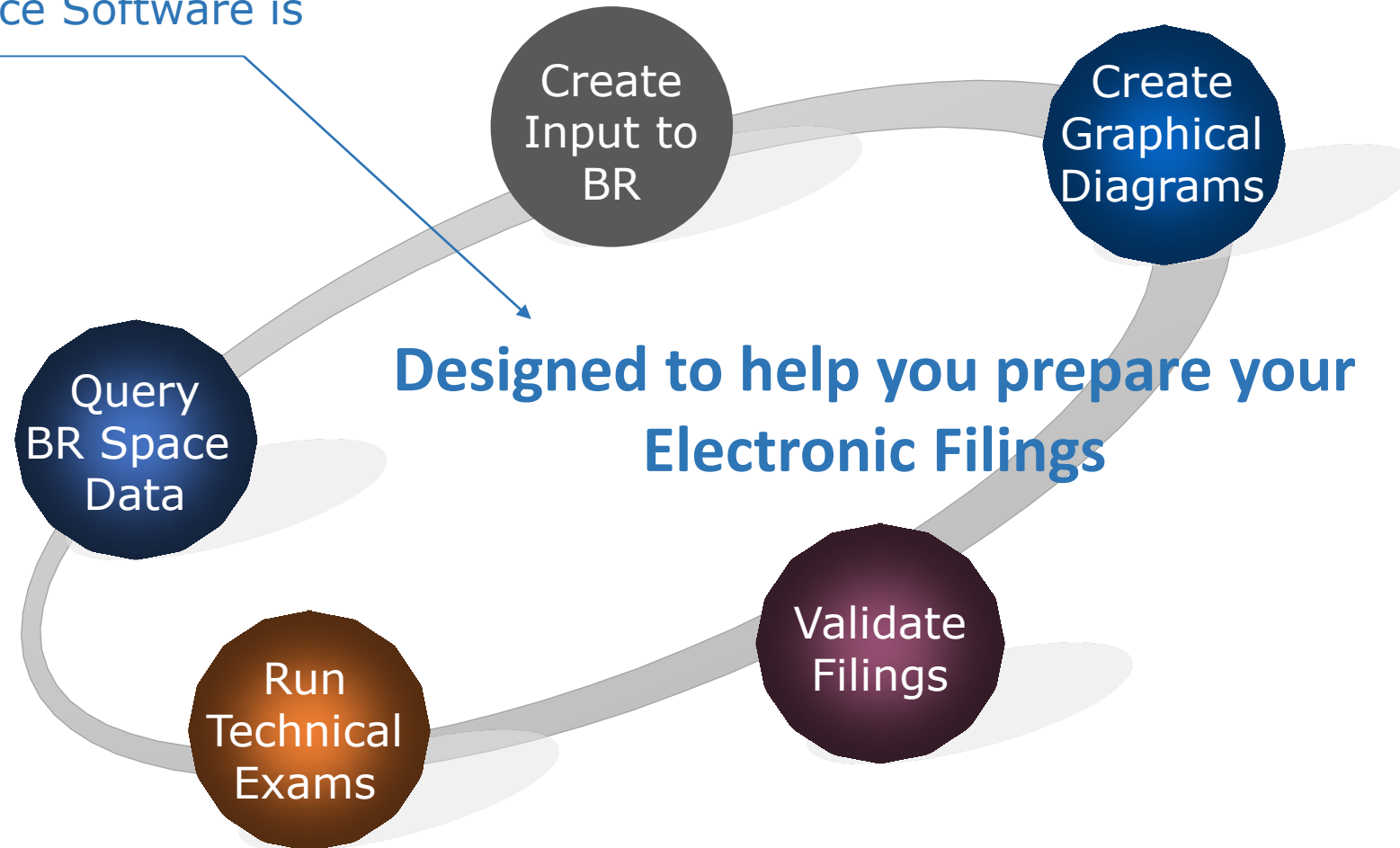
Streamline the Implementation of the RR and Rules of Procedure

Help you prepare electronic filings compliant with the RR

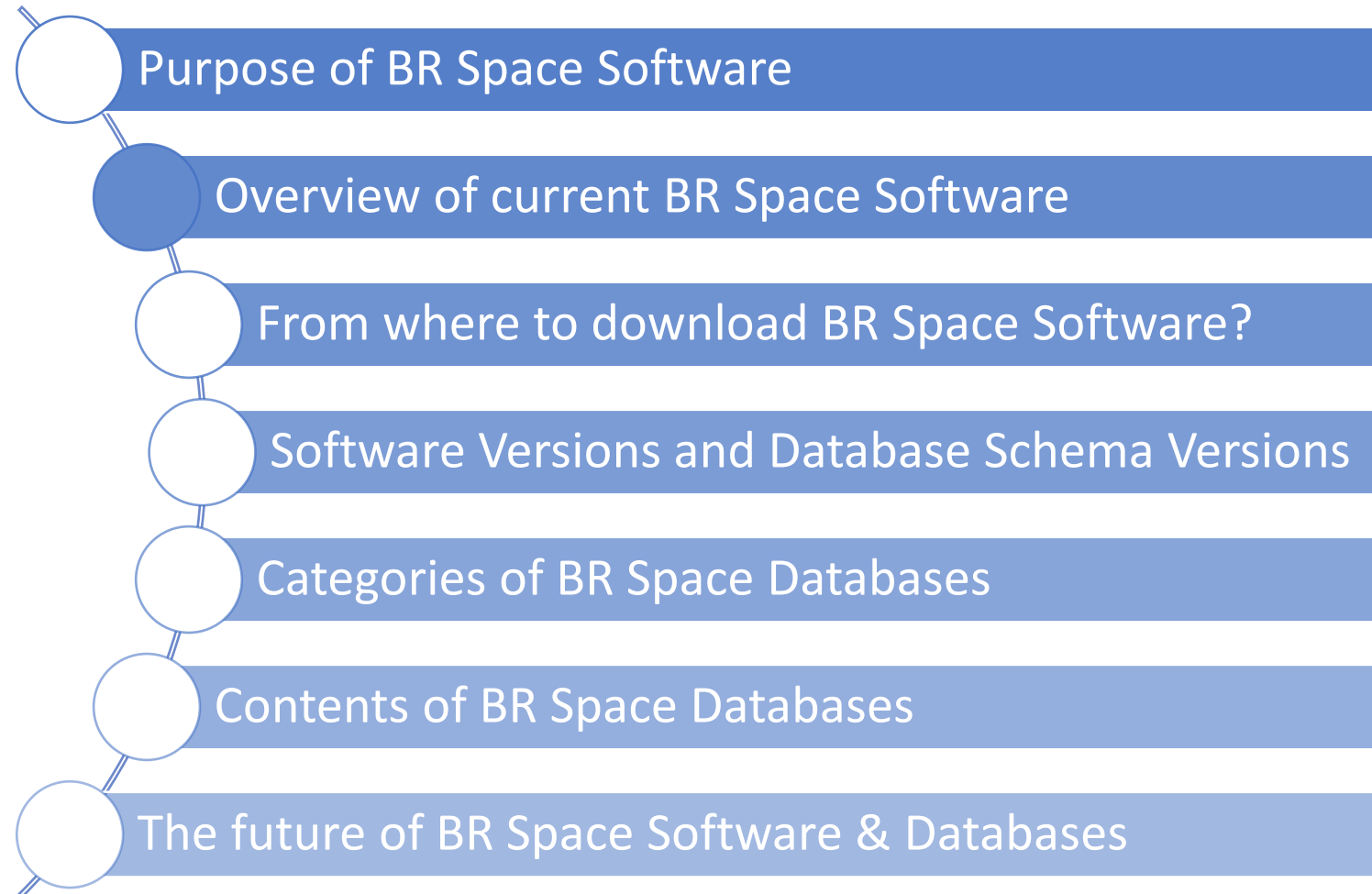
Process the electronic filings sent to the BR

Purpose of BR Space Software

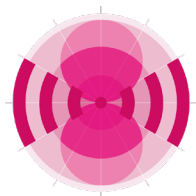
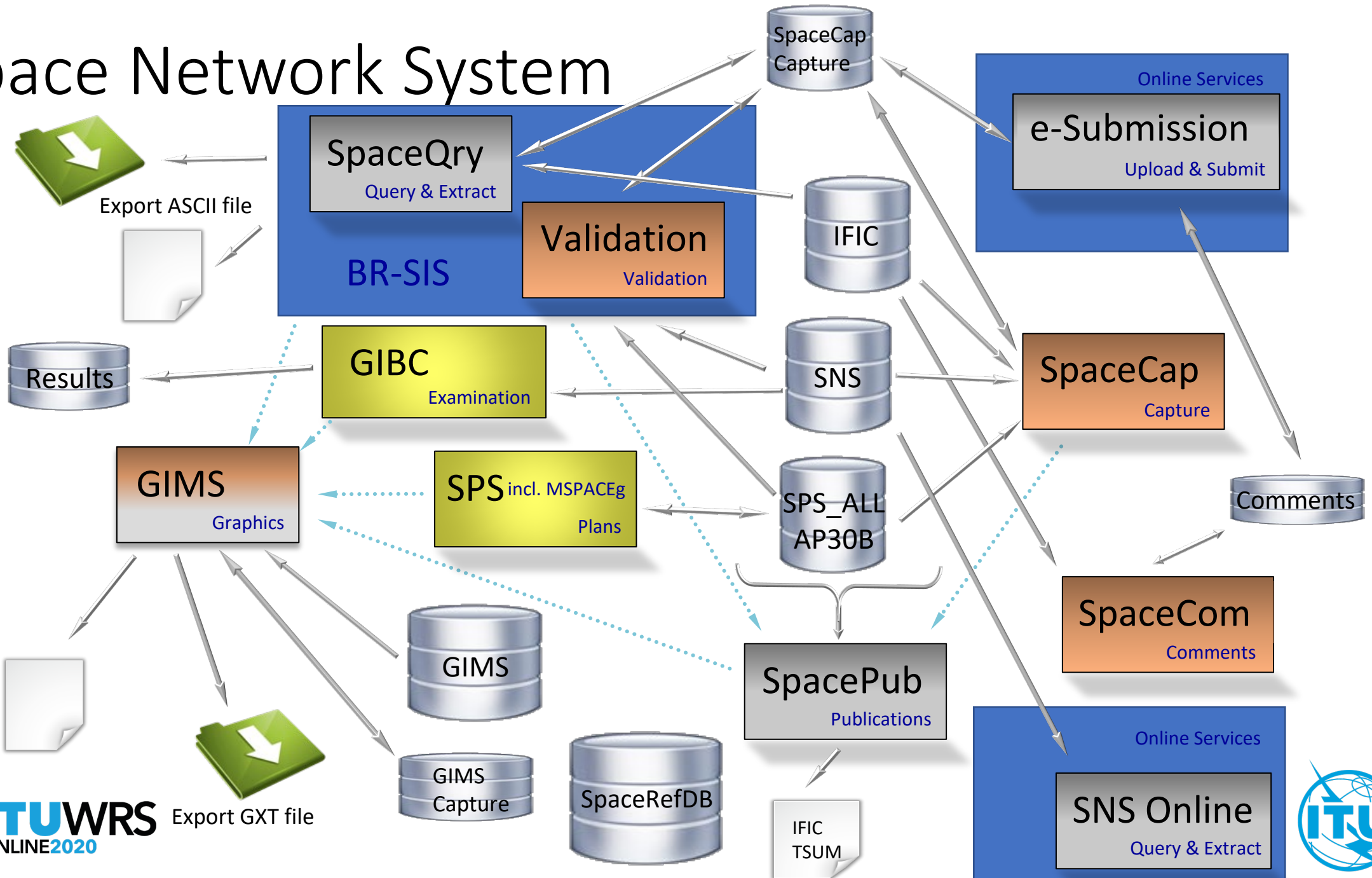
BR Space Software is



BR Space Software and Databases



Space Network System

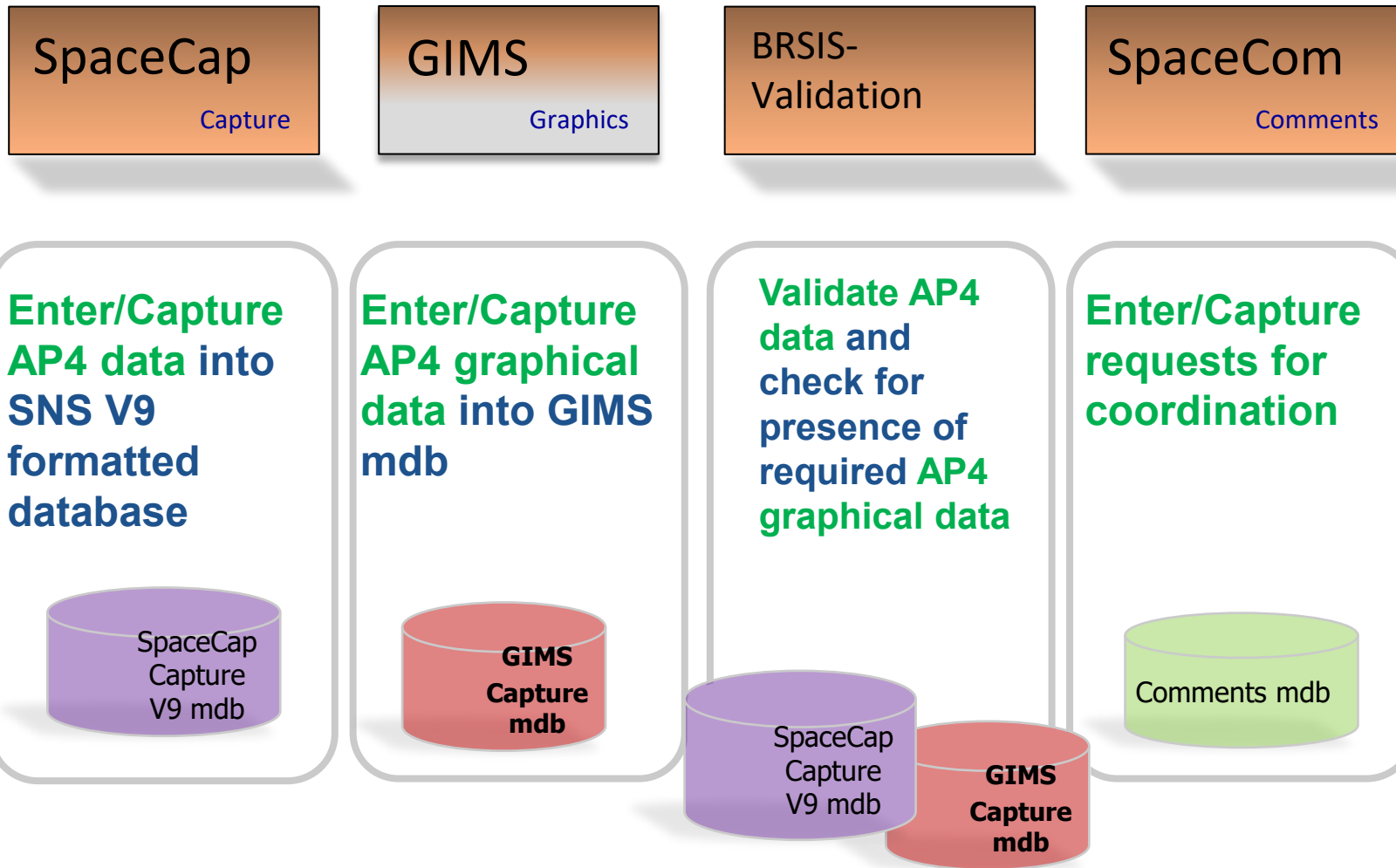


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Export GXT file



Space Services Data Entry Software



Space Services Data Query Software

BRSIS-
SpaceQry

SNS Online

Query & Extract

SpacePub

Publications

GIMS

Graphics

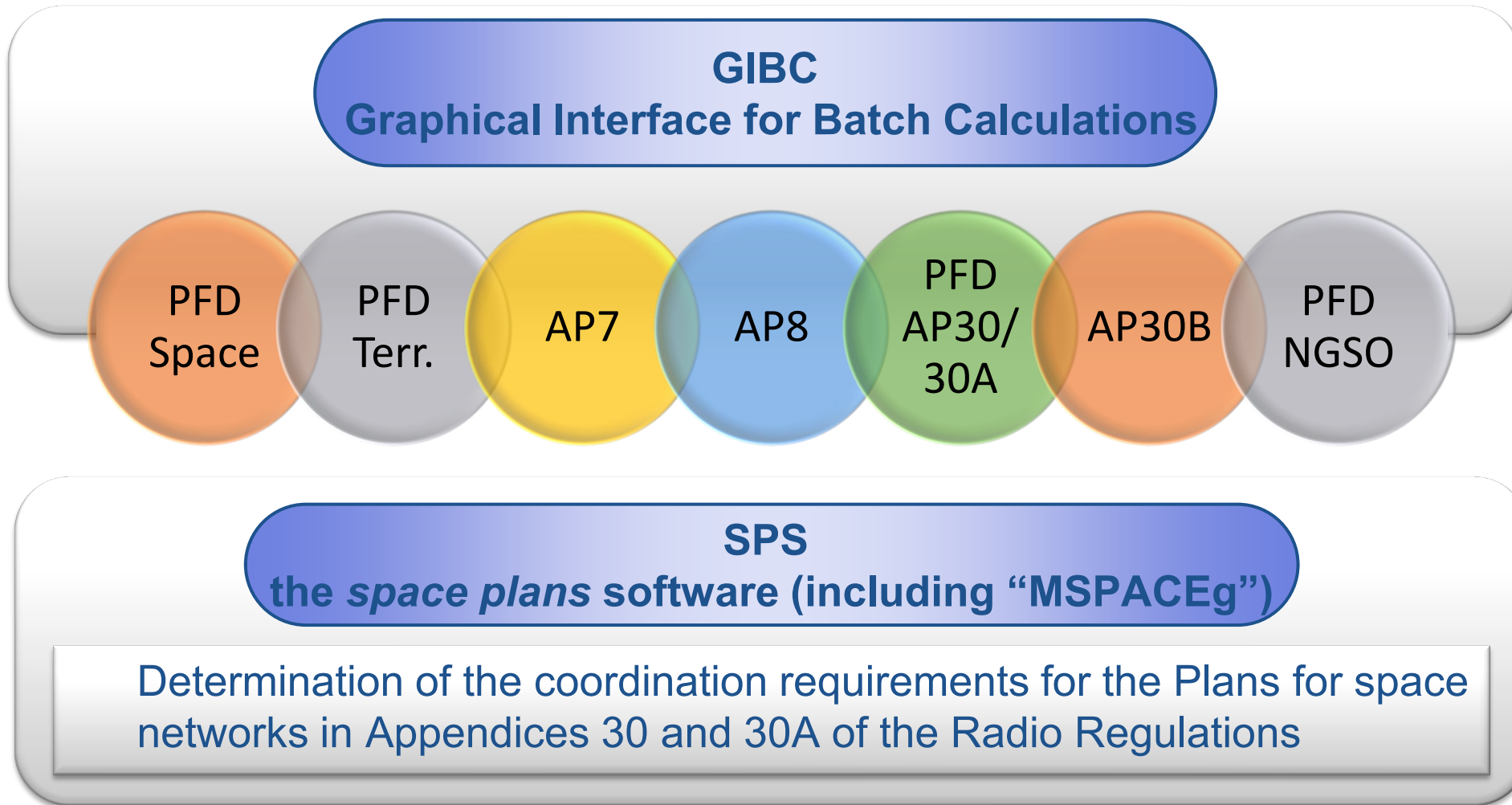
Query
satellite and
Earth stations
in the space
services from
SNS format MDB
containers

Query
satellite and
Earth stations
in the space
services from
SNS master
database in ITU

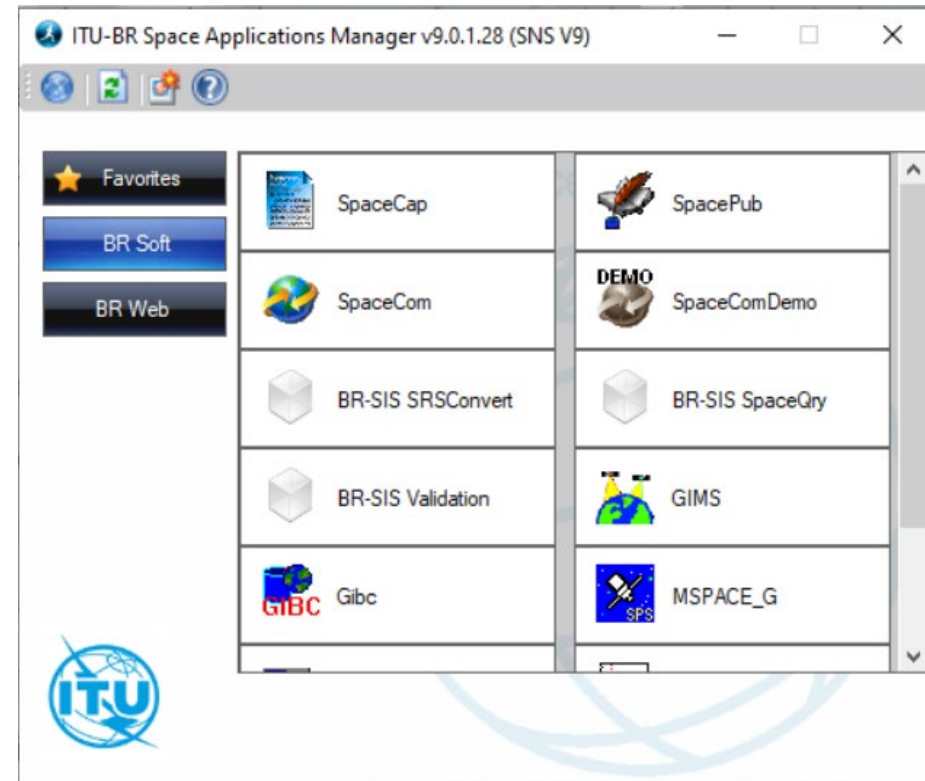
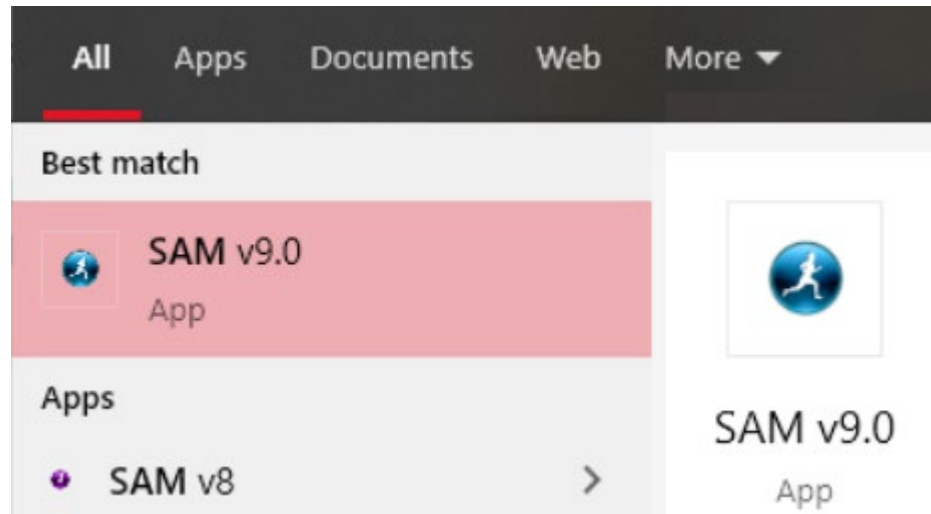
Print
satellite and
Earth stations
in the space
services from
SNS format MDB
containers

Query
for graphical data
in the GIMS
database

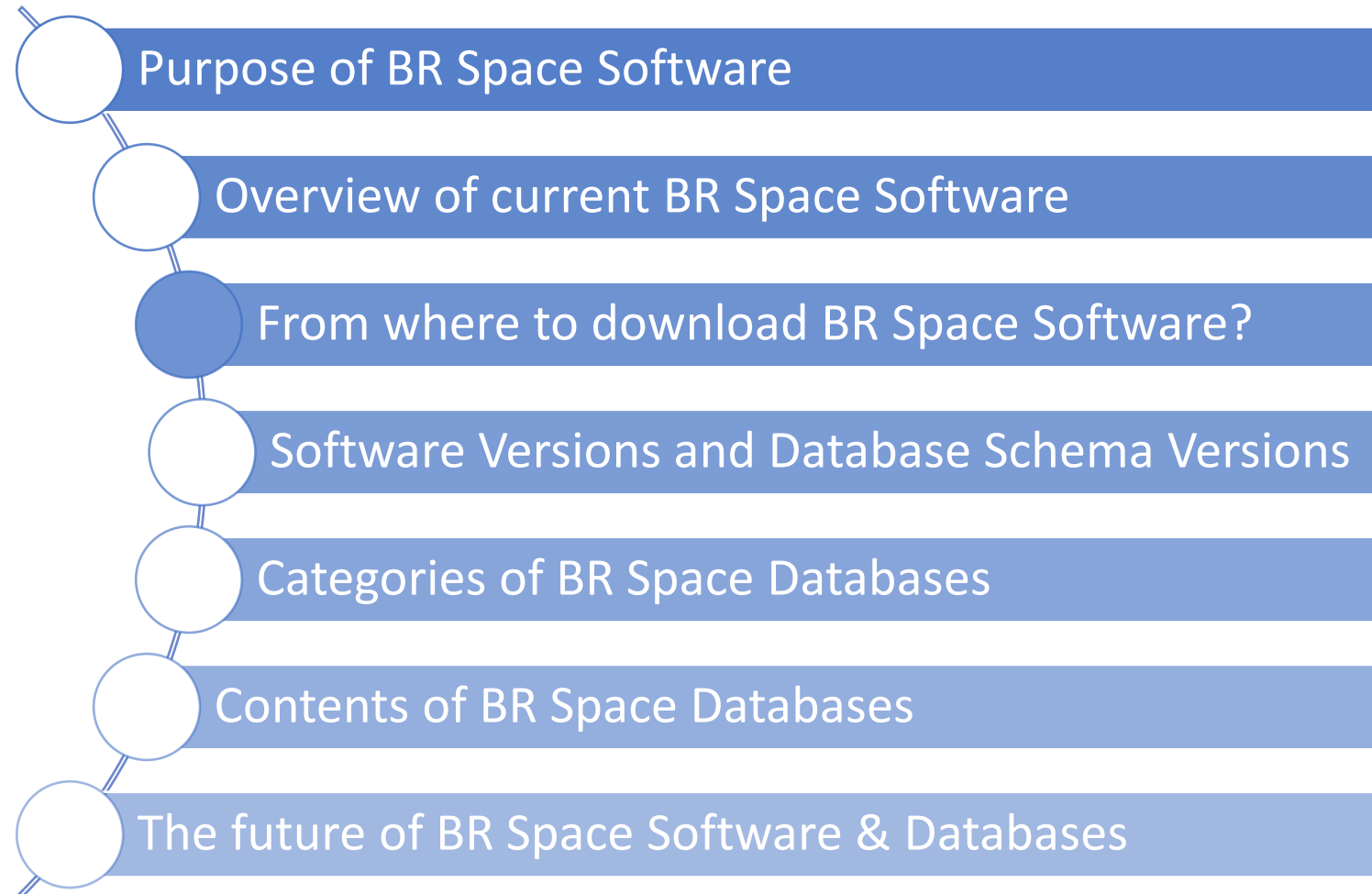
Space Services Technical Exams Software



Space Application Manager



BR Space Software and Databases



Latest BR Space Software Version



Download from the BR web site

<https://www.itu.int/ITU-R/go/space-software/en>



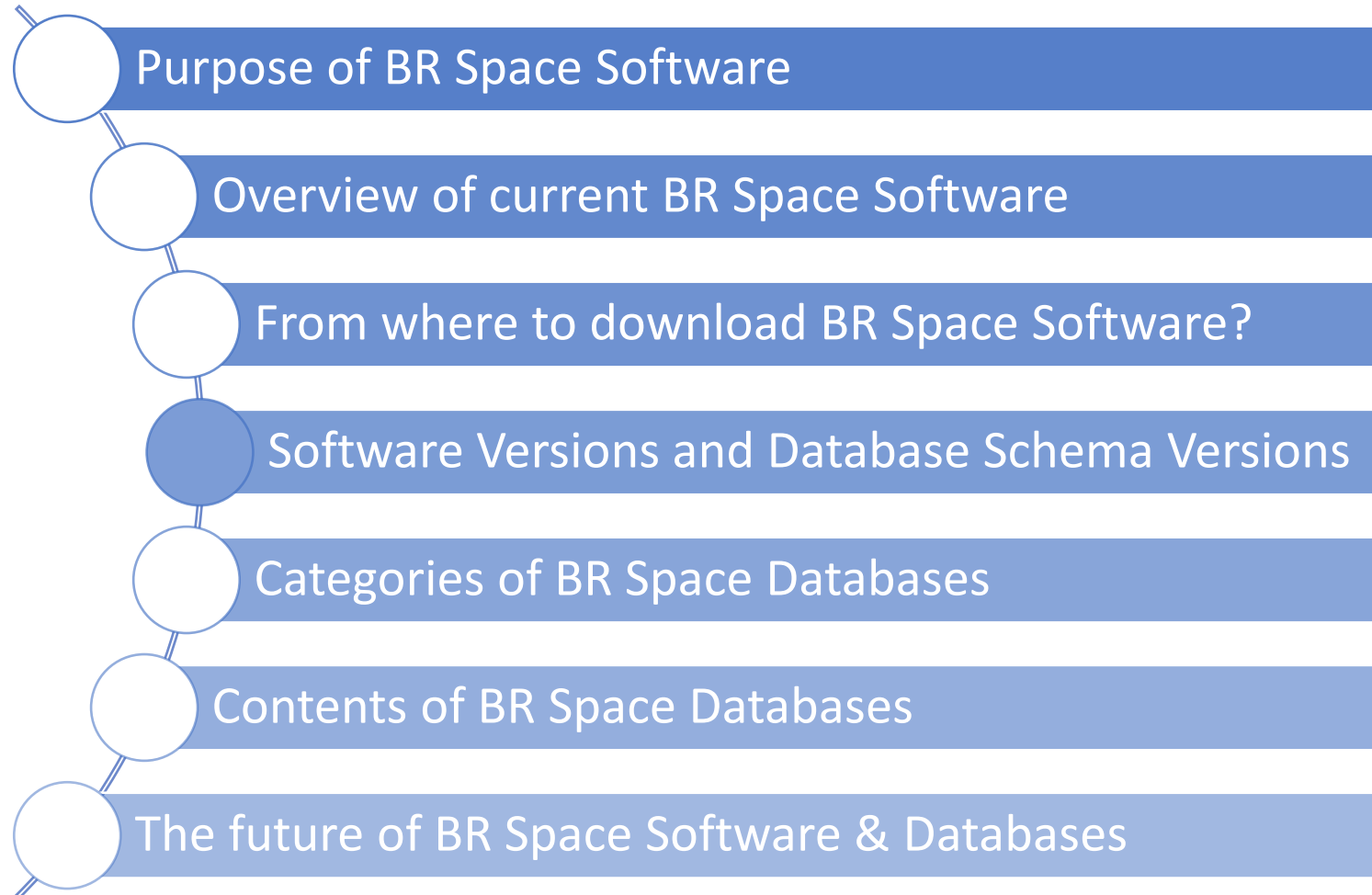
From the BR IFIC (Space) DVD

<https://www.itu.int/en/ITU-R/space/Pages/brificMain.aspx>

- **Installation requires administrator privileges**
- **Your network administrator may need to whitelist some legacy software components**

More details: BR_Soft\Notes on installing ITU BR Space Applications V9.pdf

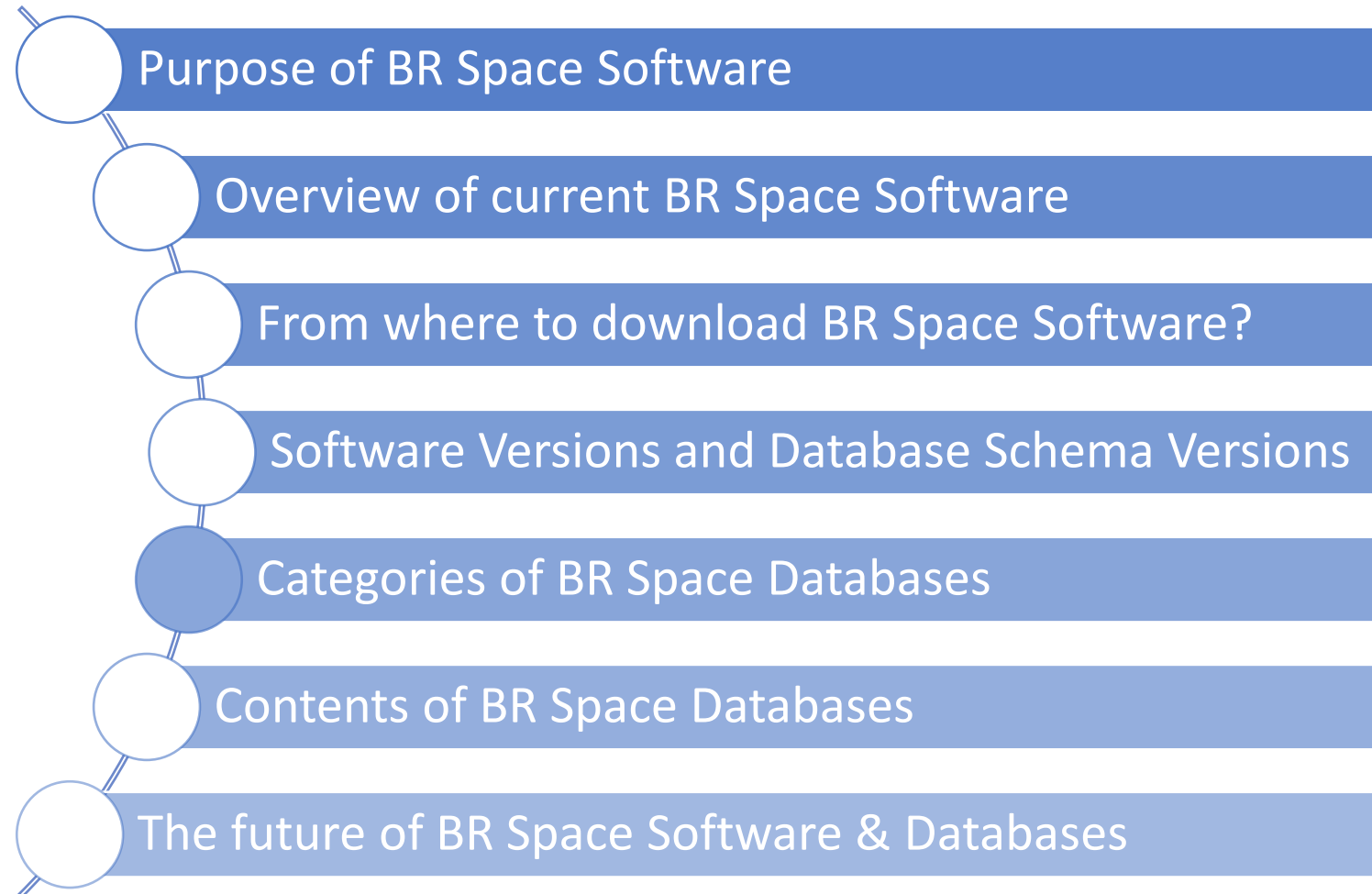
BR Space Software and Databases



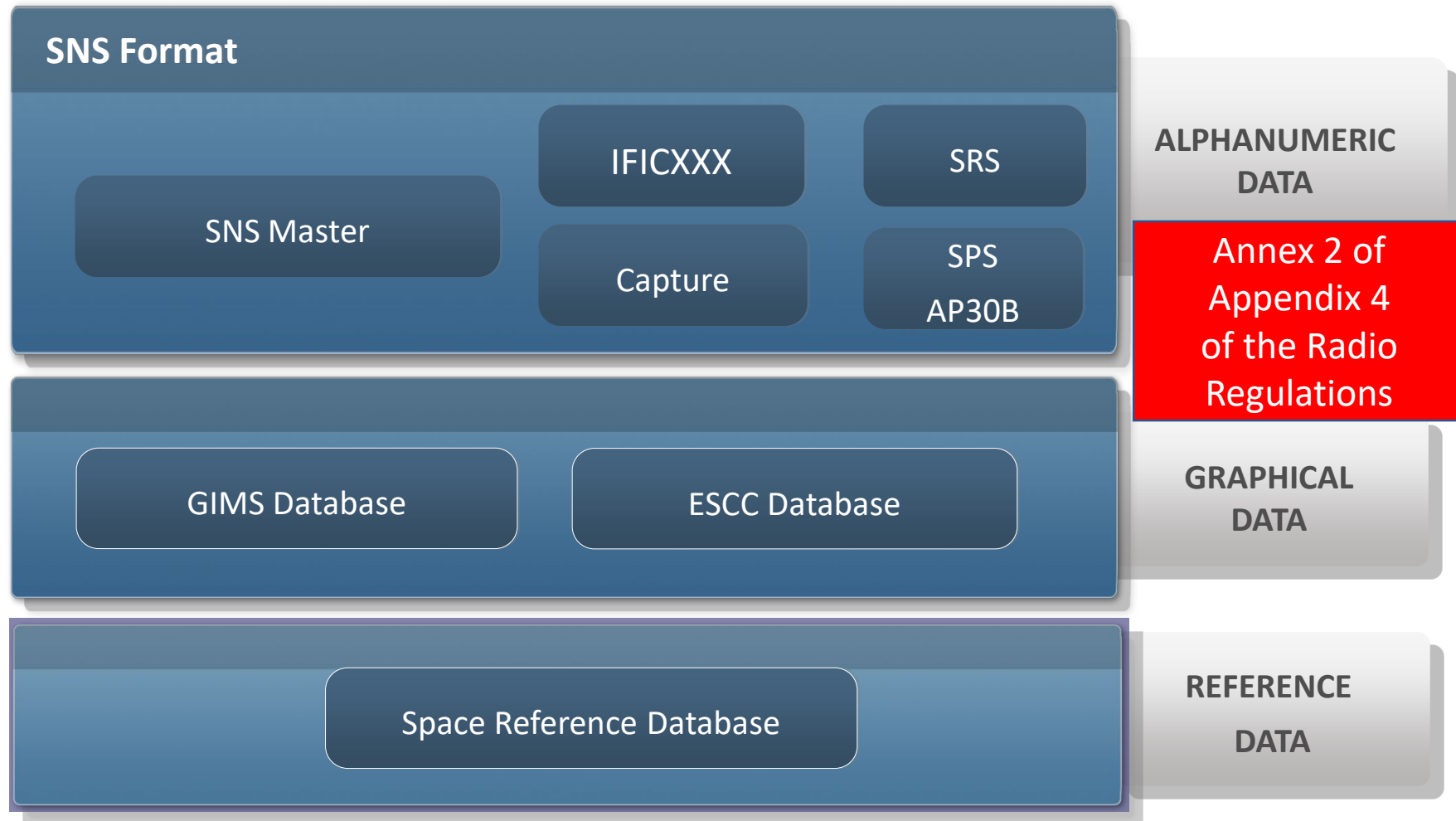
BR Space Software and DB Schema Version

- Each World Radio Communication Conference introduces new resolutions and changes to the Radio Regulations
 - **Decisions taken at WRC-15: v8 (January 2017)** (e.g. A16c as new AP4 data for a commitment to meet separation distance of No. 5.509E and PFD limits of 5.509D)
 - **Decisions taken at WRC-19 (first phase of implementation): v9 (August 2020)** (e.g. support for NGSO constellations) - Impact on all desktop and web applications
 - **Decisions taken at WRC-19 (second phase of implementation): v9.1 (January 2021)** (e.g. RES35) - Impact on all desktop and web applications
 - **Data structure improvements/modernization: [v9.2 (January 2022)]**
- Transitions are announced in Circular Letters
 - **CR/411 and CR/415 for v8, CR/464 for v9**
- Where to find information on the V9 SNS Format?
 - **Section III of the Space Preface:** Description of the SNS V9 format
http://www.itu.int/en/ITU-R/space/Preface/preface_e.pdf

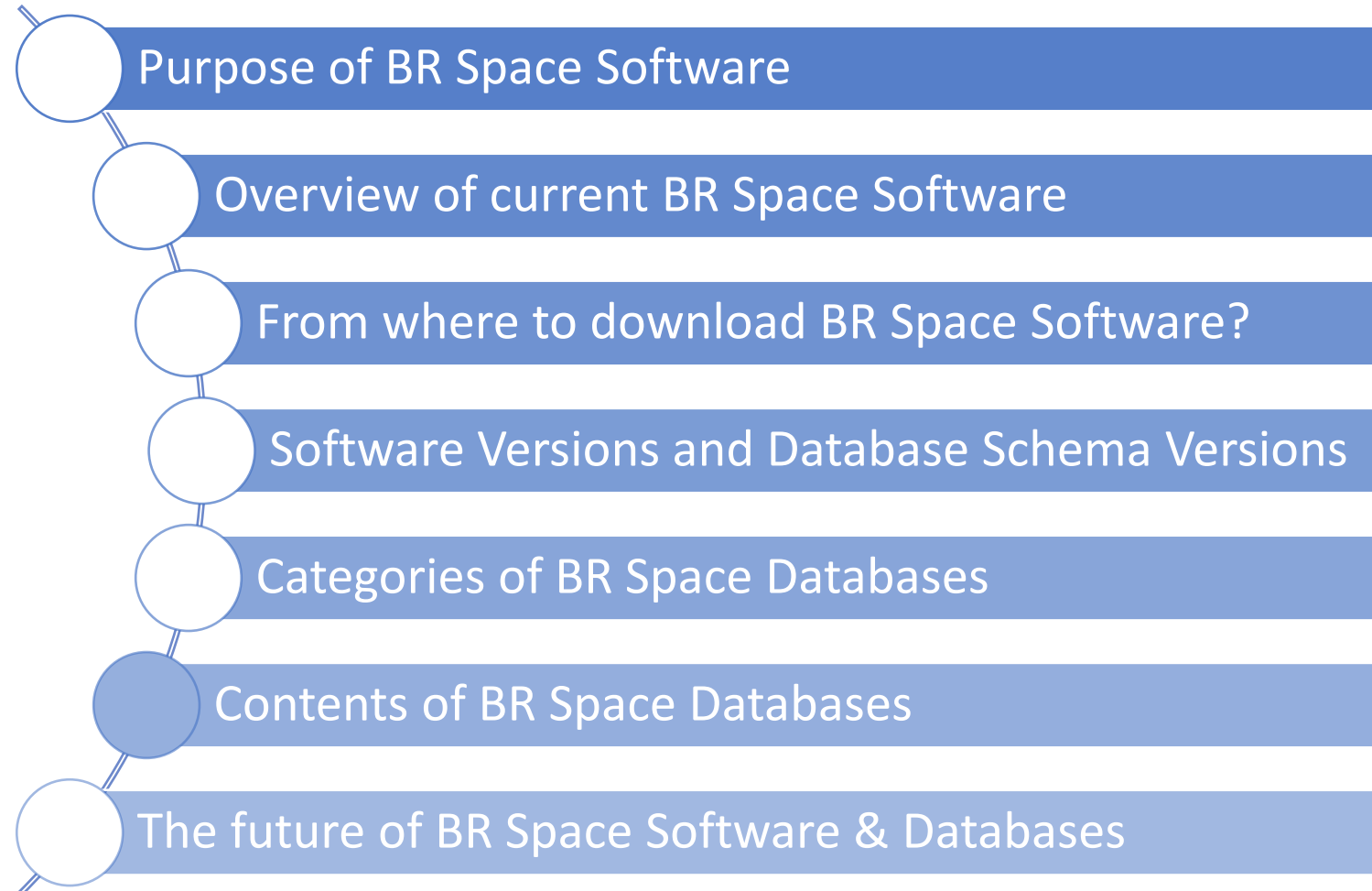
BR Space Software and Databases



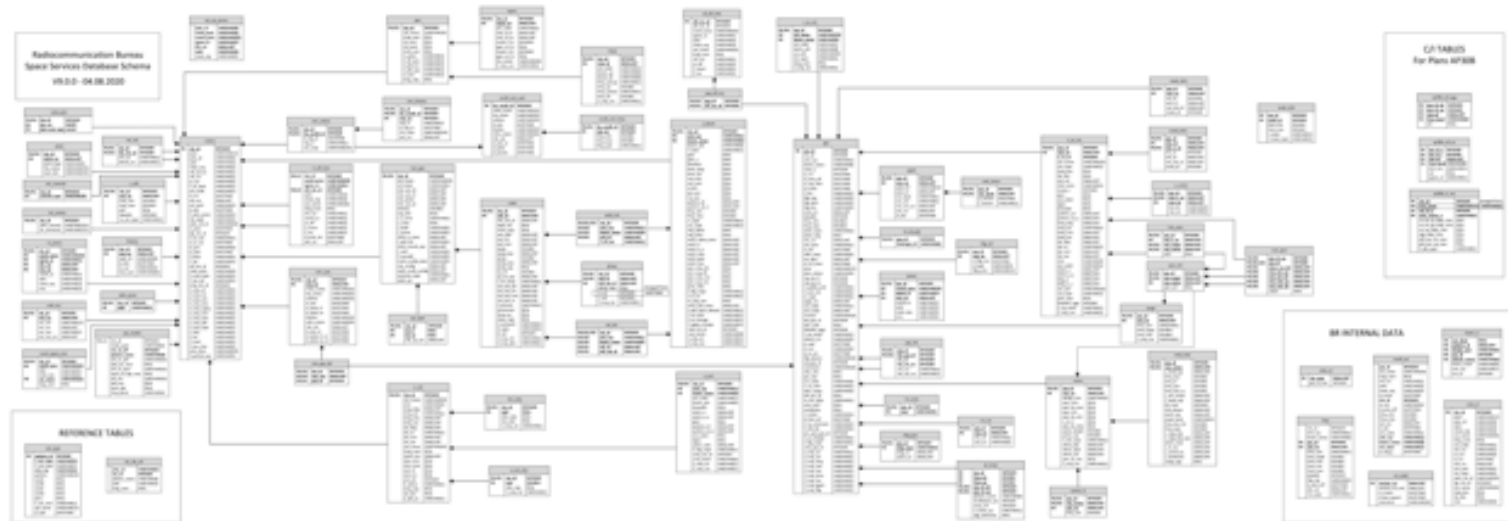
Categories of BR Space Databases



BR Space Software and Databases



BR SNS Format Databases



SNS Format Database

Source: IFIC (Space) DVD file Databases\SRS_Data\SRSDiagramV9.pdf



SNS Master Database

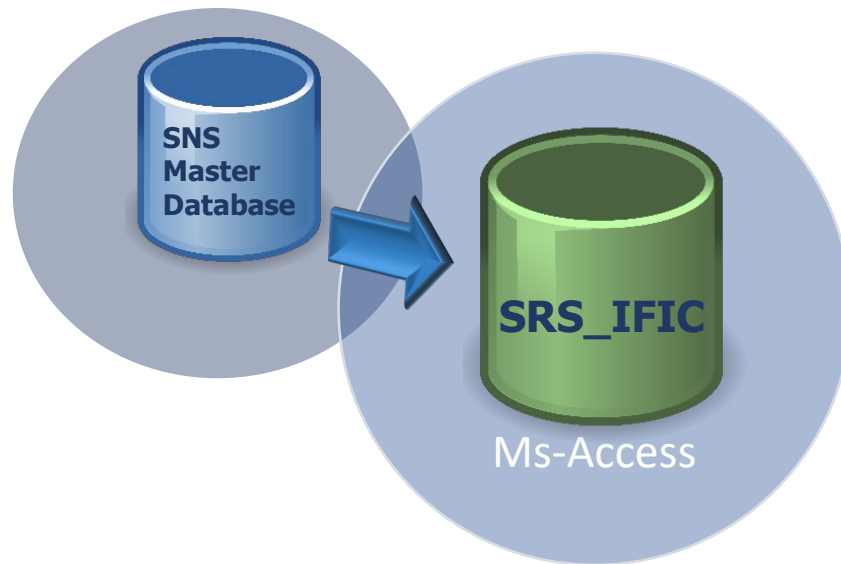


- **In the Master Register**
 - Coordination and Notification
 - Advance Publication of Information
 - Due Diligence (Resolution 49)
- **Electronic Filings received by the BR**
 - New assignments
 - Mod of existing
 - Delete existing
- **Notifications in Technical Examination**



SRS_IFICnnnnn.mdb on the BR IFIC (Space) DVD

- Published every IFIC DVD (2 weeks)
- Snapshot of the SNS Master Database

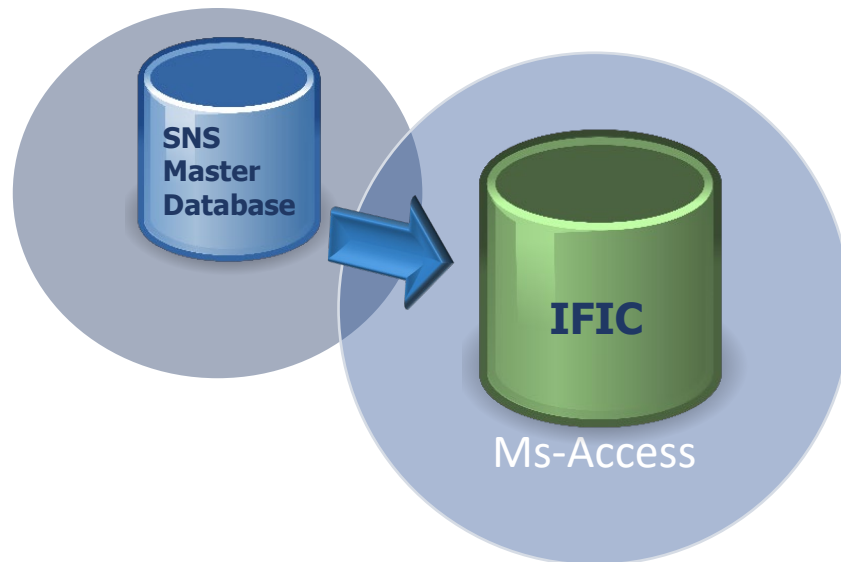


- Coordination and Notification recorded in the **Master Register**
- in **Technical Examination**
- for **Advance Publication of Information**
- for **Due Diligence (Resolution 49)**

Space Radiocommunication Stations (SRS)

IFICnnnnn.mdb on the BR IFIC (Space) DVD

- Published every IFIC DVD (2 weeks)



- **Part IS** – New frequencies or modifications, cancellations of assignments in the Master Register received by the BR
- **Part IIS** – Updates to the Master Register with Findings
- **Part IIIS** – Notifications returned to ADM with unfavourable findings
- **Special Sections** – Submissions published API/A, CR/C, CR/D, CR/E, CR/F

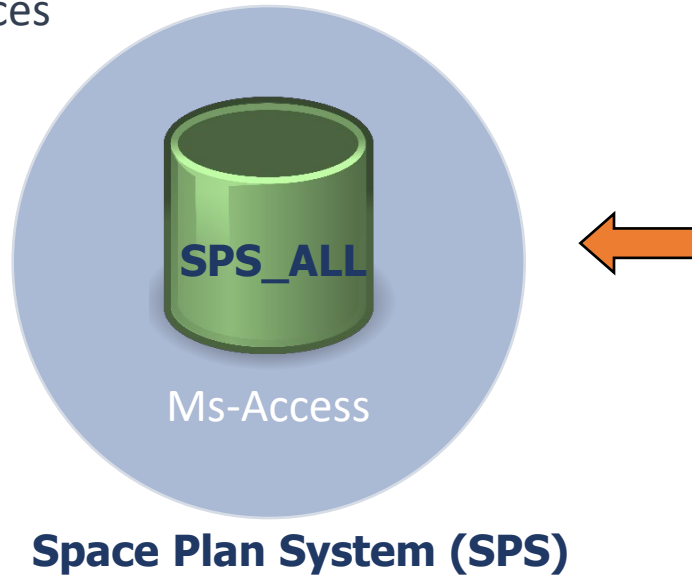
- Download from

<https://www.itu.int/sns/wic/demowic.html>

SPS_ALL_IFICnnnn.mdb on the BR IFIC (Space) DVD

- **Published every IFIC DVD (2 weeks)**

Technical characteristics and reference situation for networks of the planned space services



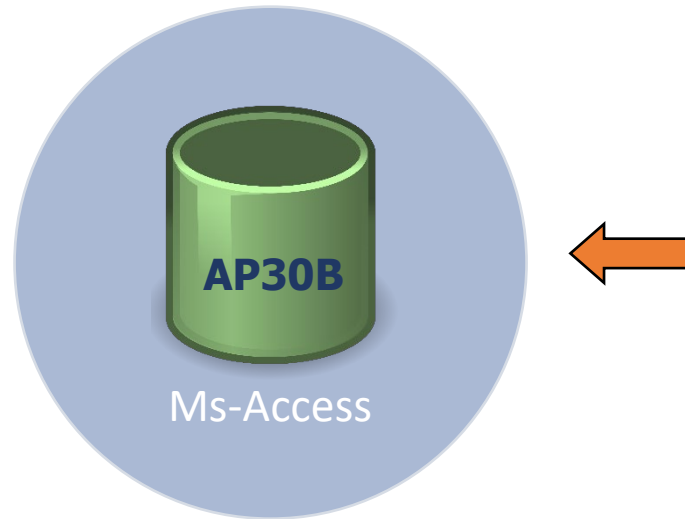
- **Appendices 30/30A**
 - Region 1 and 3 Plan, List and pending Article 4 networks
 - RARC SAT-R2 Region 2 Plan
 - Article 5 of Appendices 30 and 30A
 - Pending Article 2A networks of Appendices 30 and 30A
- **Due Diligence (Resolution 49)**

- **Download from**

<http://www.itu.int/en/ITU-R/space/plans/Pages/AP30-30A.aspx>

Appendix 30B Database on the BR IFIC (Space) DVD

- Published every IFIC DVD (2 weeks)



- **Appendix 30B**

- Plan, List and Pending Article 6 networks
- Article 8 of Appendix 30B

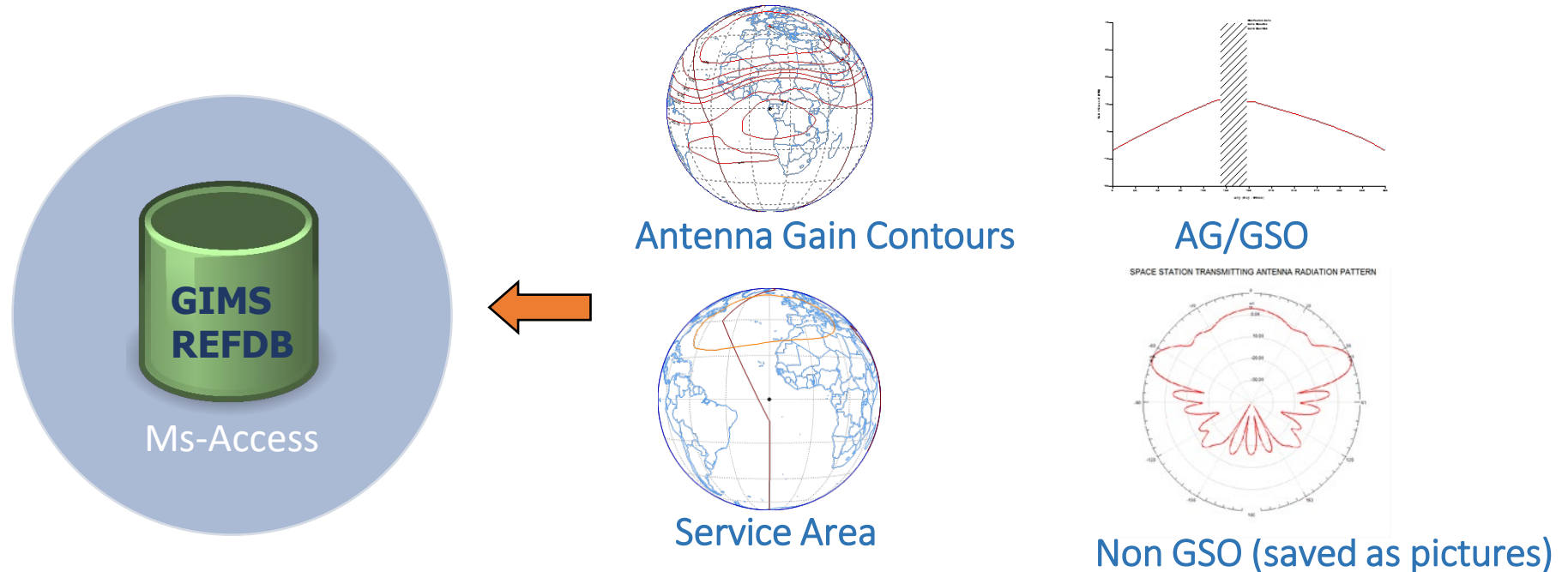
- **Due Diligence (Resolution 49)**

- Download from

<http://www.itu.int/en/ITU-R/space/plans/Pages/AP30B.aspx>

Graphical Data - GIMS Database

- Published every IFIC DVD (2 weeks)

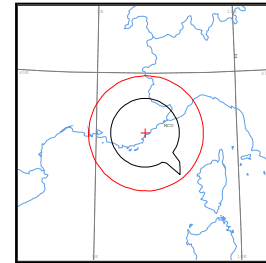
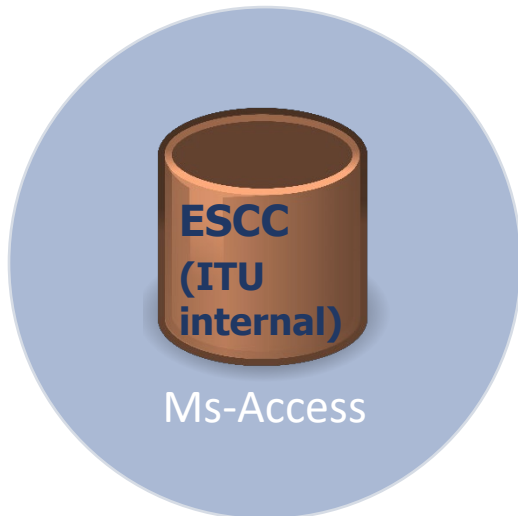


Graphical Data for **GSO and Non GSO Satellites**

- used by Technical Examination software
- Available in IFIC DVD (`grefdbnnnn.mdb`) and accessible via GIMS software (REFDB)

Graphical Data - ESCC Database

Master Repository for Earth Station Coordination Contours



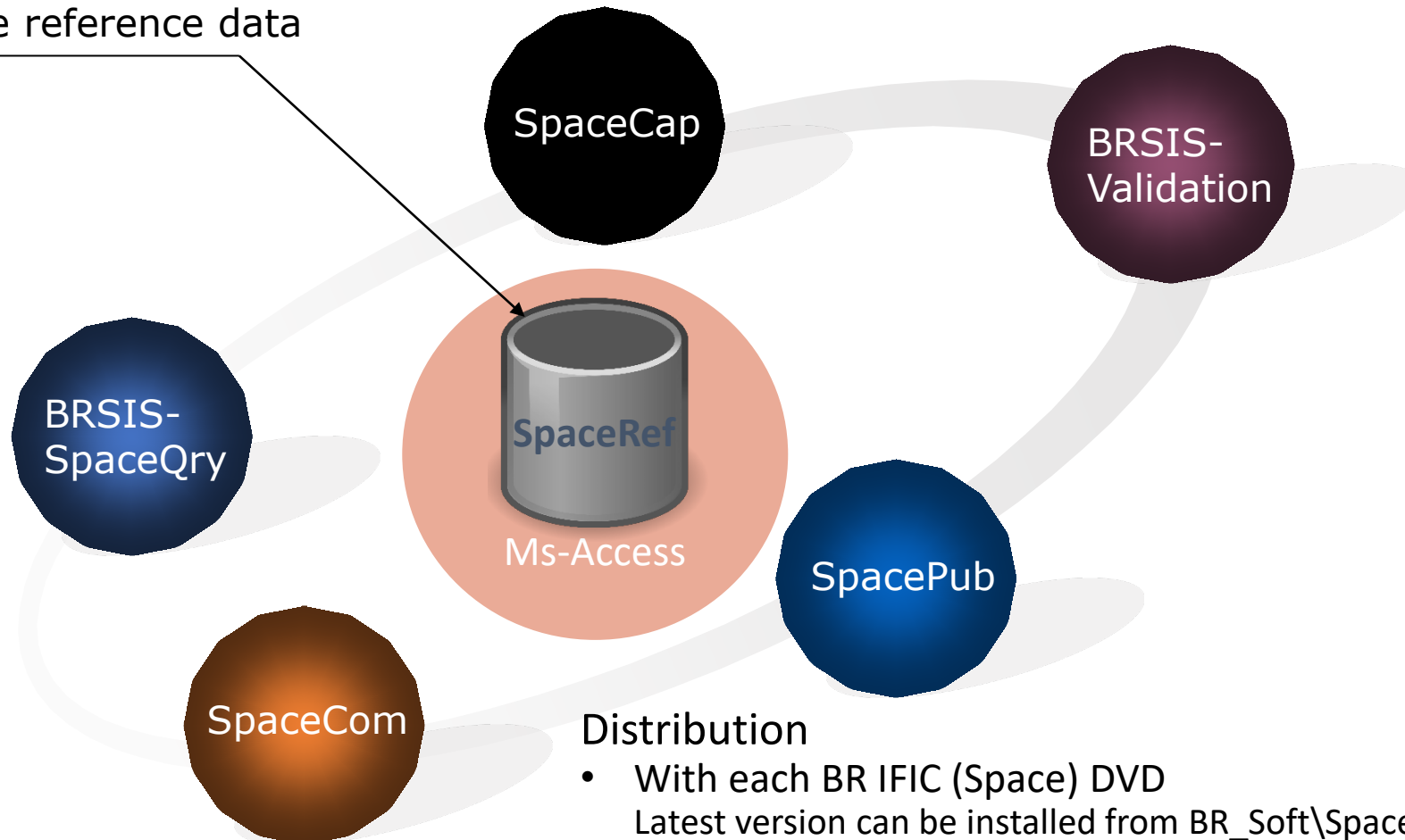
Generated by the Appendix 7 software

Graphical Data for Earth Stations

- used in-house
- used by Technical Examination software

Space Reference Database

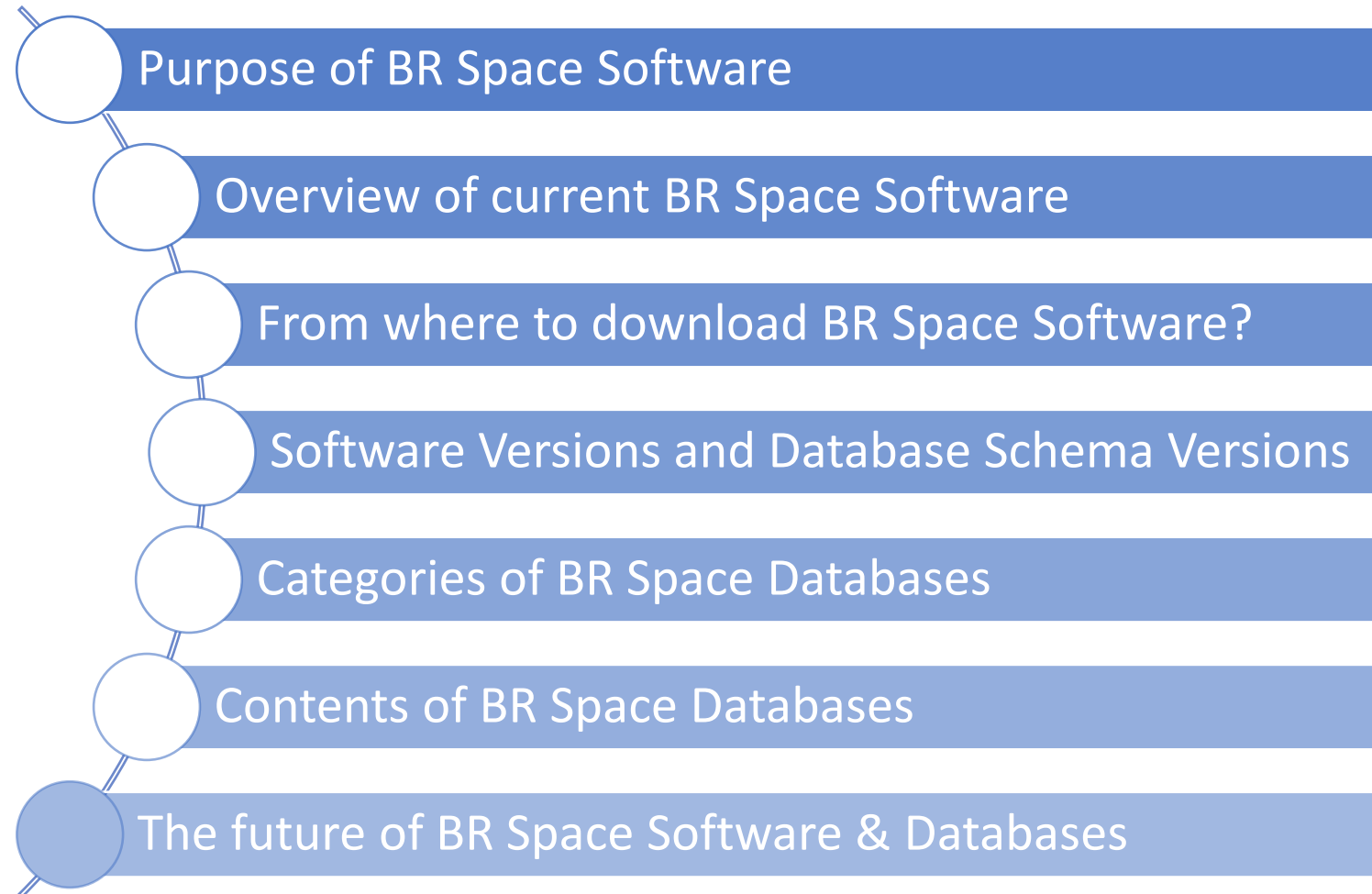
Ensures all BR Space Software use the same reference data



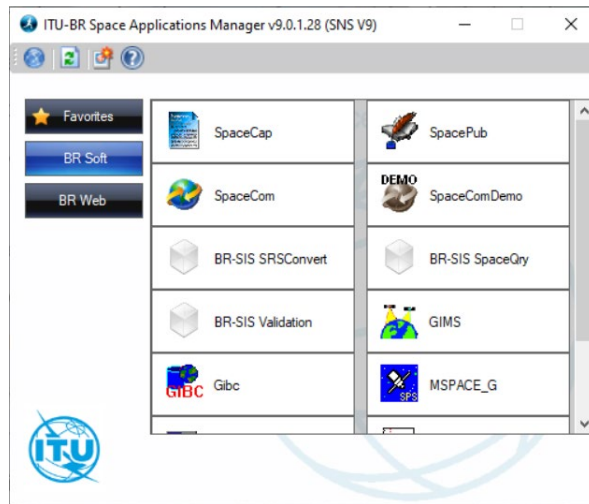
Distribution

- With each BR IFIC (Space) DVD
Latest version can be installed from BR_Soft\SpaceRefDB folder
- Downloadable from the ITU Web Site
<https://www.itu.int/en/ITU-R/software/Pages/spacerefdb.aspx>

BR Space Software and Databases

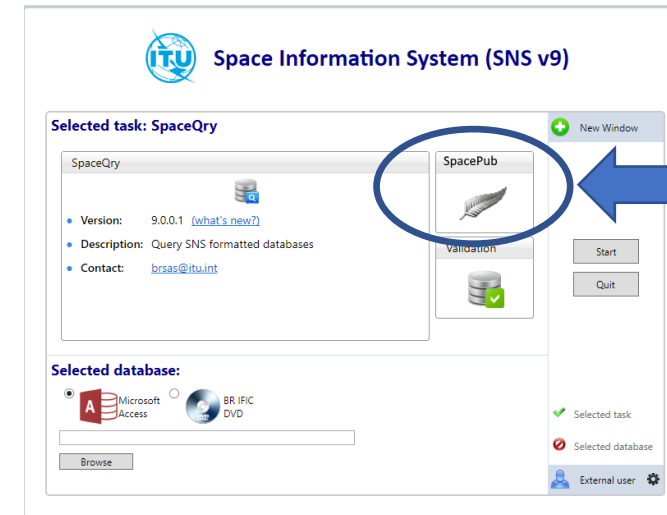


Future of BR Space Software



Current BR Space Network System

- Classical desktop applications
- Different user interfaces
- Separation of desktop applications and web services



Future BR Space Information System

- Single user interface
- Consistent look and feel
- Rich user experience
- Gain in terms of training and productivity
- Seamless integration with existing and future online services and applications

Next in line for migration:

SpacePub in 2021

SpaceCap in phases starting with coordination agreement capture in v9.1

Future of BR Space Software

- New and migrated technical exam software:
 - PFD Terrestrial to be migrated in 2021
 - New Frequency Overlap exam (currently in testing)
- More web applications and services
 - e-Correspondence (Resolution 907 (rev. WRC-15))
 - Secure web application to replace fax and e-mail correspondence
 - First release in October 2019
 - Continuous improvements and integration with other BR systems
 - Space Explorer
 - Replacement of SNS Online and SNL Online
 - SpaceCom Online
 - Replacement of SpaceCom legacy desktop software
 - Intention to phase out the comments MDB container

Future of BR Space Databases

Legacy format

Increasingly considered to be a security risk (macros, VBA)

Size restriction: 2 GB max file size, must use linking

Proprietary file format



SQLite test database available in Q2 2021

BR Space Software to support SQLite (in BETA mode) with the release of v9.2 (end 2021)

SQLite becomes the official database format for BR Space Software with the release of v10 (post-WRC-23) at the latest



Popular

Free

Multiplatform

Well-tested

Free tools available

Native or ODBC connectivity

Removes the 2GB size restriction

Thank you!

ITU – Radiocommunication Bureau
Questions to brmail@itu.int or brsas@itu.int

