

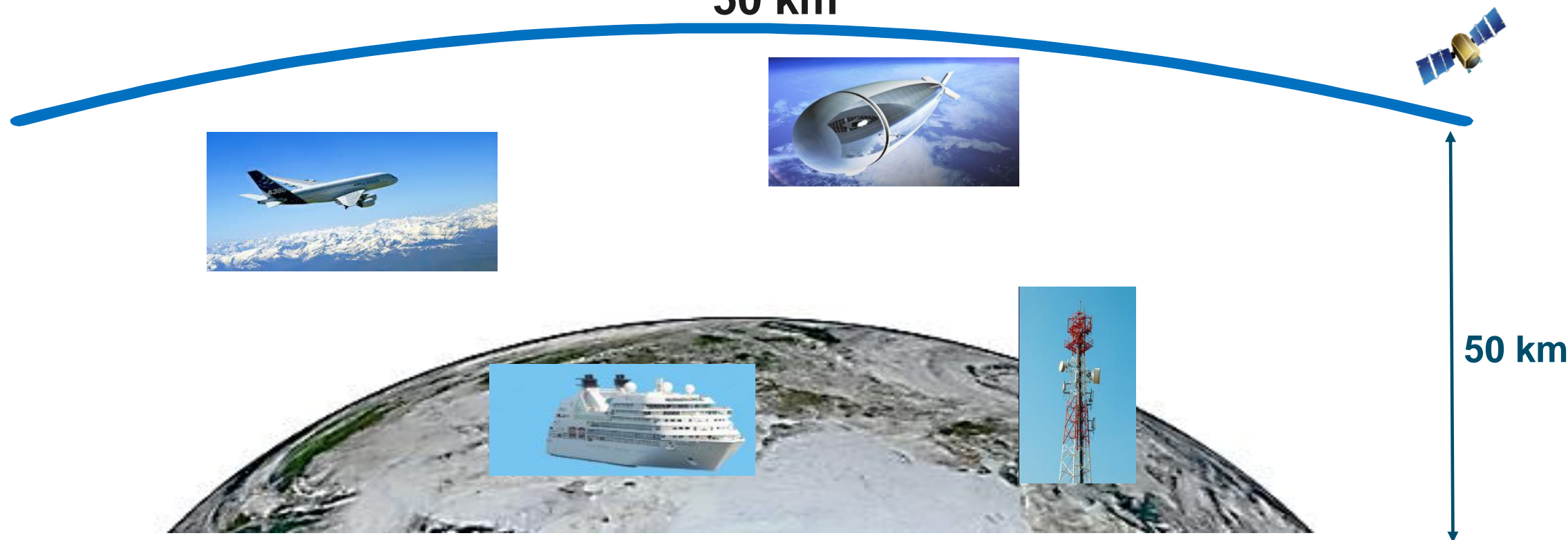
ITU World Radiocommunication Seminar

Overview of terrestrial services

2-6 December 2024, Geneva, Switzerland

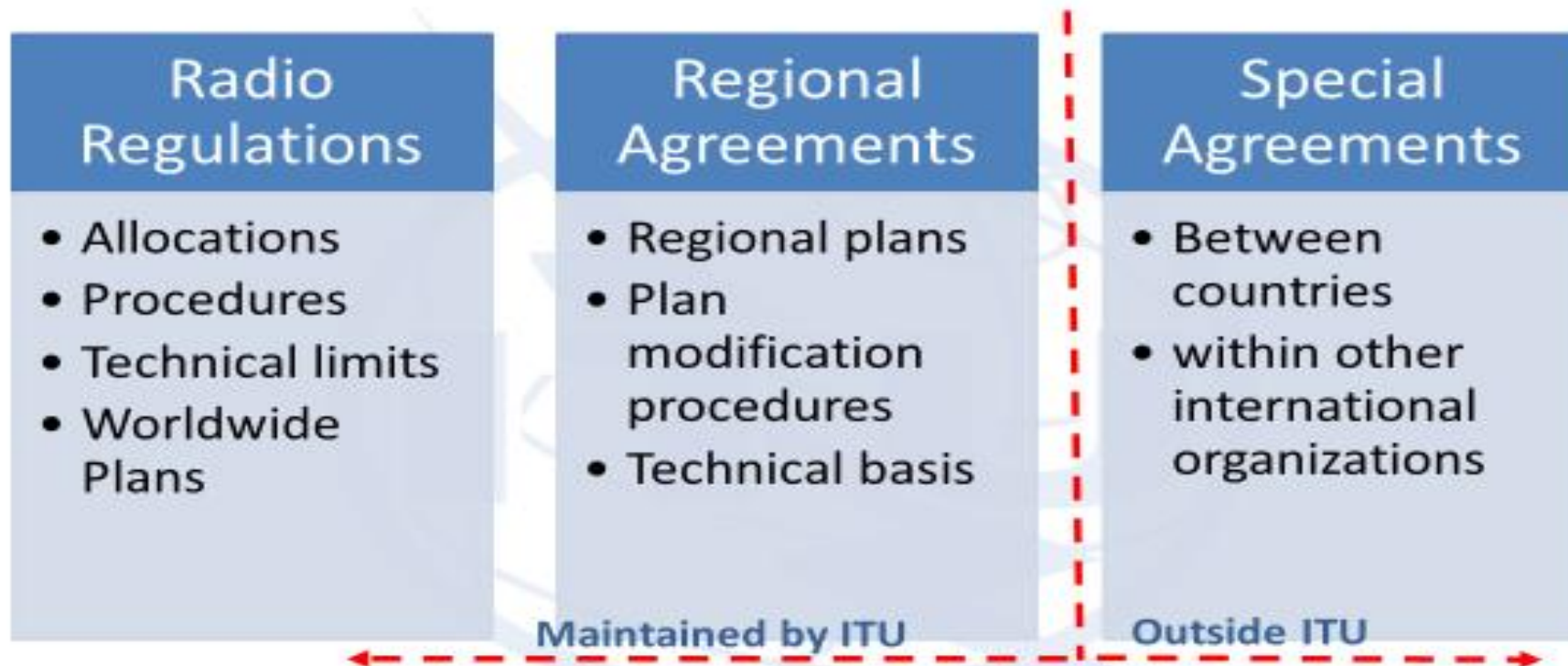
Terrestrial Radiocommunication Services

Terrestrial services: all radio stations at ground, sea, in the air, up to \approx 50 km



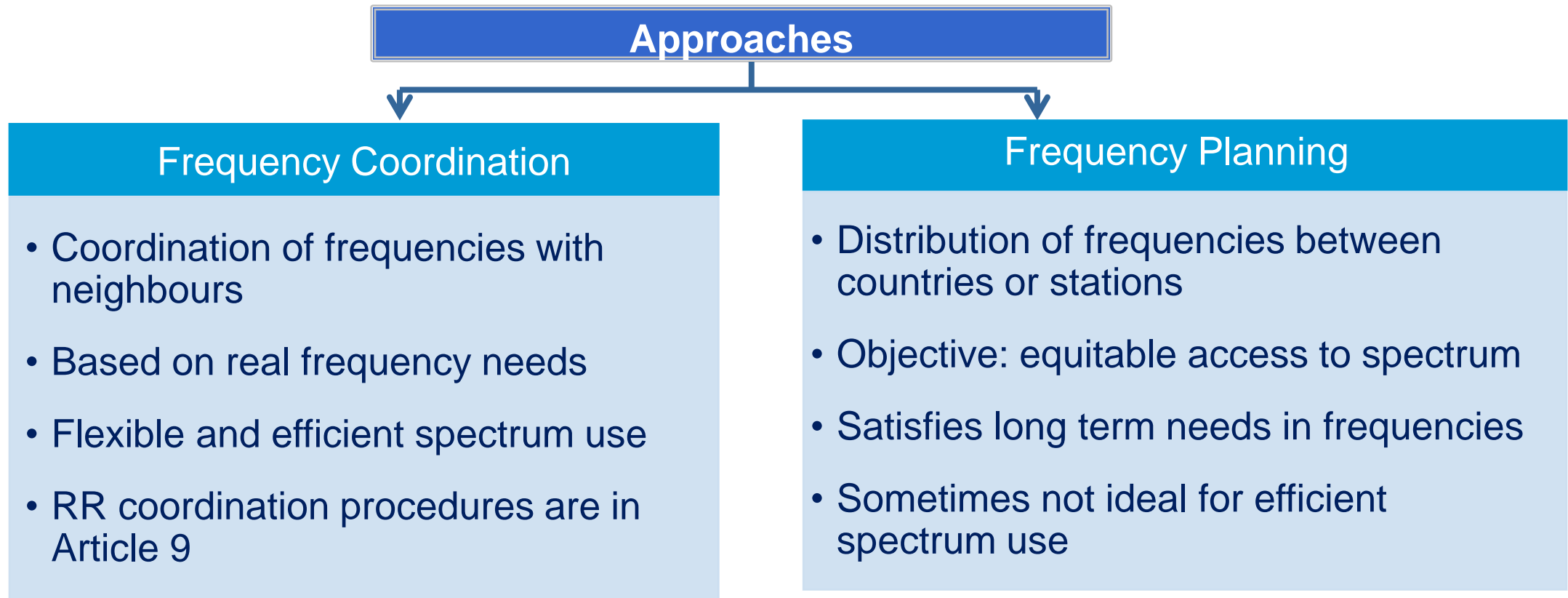
Radio Regulations define the rules mainly for radiocommunication services, rather than applications, except few technologies, e.g. IMT, HAPS, RLANs

Main regulatory instruments



- Other ITU instruments:
 - **Rules of Procedure** that explain some difficult RR provisions
 - **ITU-R Recommendations**: technical standards containing system characteristics, channeling arrangements, mitigation techniques, etc.

How to share spectrum



Other means of radio station coexistence:

- Power limits (e.g., Art. 21 to protect space receivers), limits on other system characteristics
- Channeling arrangements – limitation of channels to specific usage (e.g., RR AP17, 18)

Frequency plans for terrestrial services

➤ **3 worldwide** allotment plans for maritime mobile service and aeronautical mobile service

- RR Appendix 25 – HF maritime mobile service
- RR Appendix 26- HF aeronautical mobile (OR) service
- RR Appendix 27 – HF aeronautical mobile (R) service

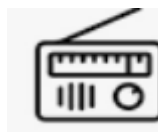


➤ **9 regional/sub-regional plans** (established under the auspices of ITU)

- LF/MF/UHF sound and TV : **GE84**, ST61, GE89, **GE06 (GE06L)**, GE75, RJ81, RJ88
- LF/MF maritime and aeronautical services: GE85M, GE85N



➤ **Seasonal planning HF broadcasting**: RR Art. 12 (schedules every 6 months)

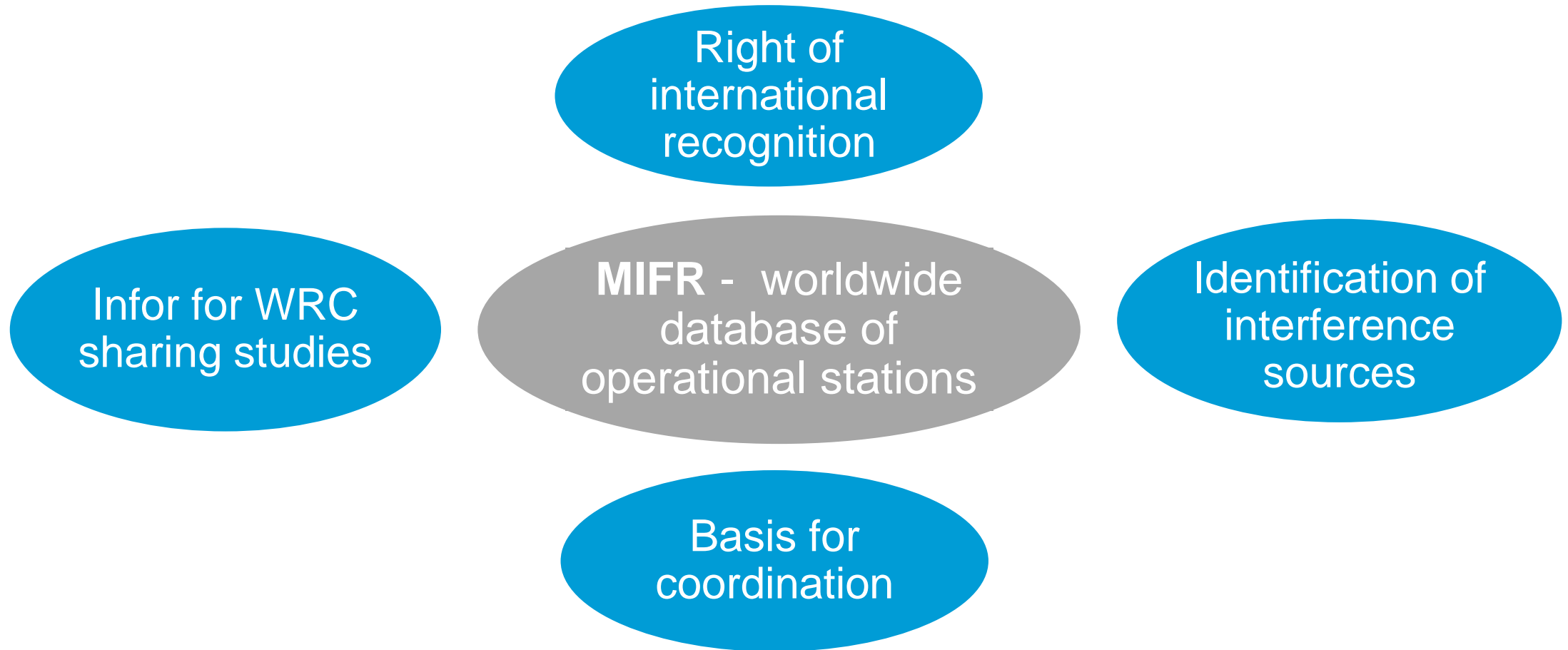


➤ **Plans outside ITU**: ICAO (VHF coms with aircraft), IALA (LF maritime radiobeacons)

Coordination of terrestrial services

- **Coordination procedures of the Radio Regulations – Article 9**
 - No. 9.16 – coordination of terrestrial stations vs earth station of NGSO networks
 - No. 9.18 – coordination of terrestrial stations vs earth station of GSO network
 - No. 9.19 – coordination of terrestrial stations vs earth station of broadcasting satellite
 - No. 9.21 – coordination of terrestrial stations vs all services if allocation is subject to 9.21
- **Coordination procedures of the regional agreements**
 - Contained in respective regional agreements
- **Bilateral or multilateral coordination** – directly between administrations concerned

Master International Frequency Register (MIFR)



MIFR: 3.2 million terrestrial assignments

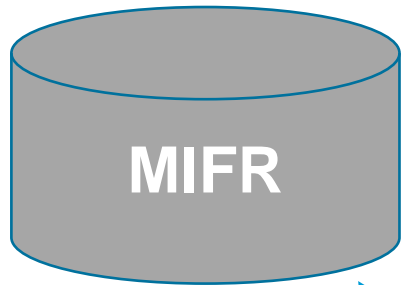
Notification to MIFR mandatory in some cases and essential in others (e.g., in border areas, in bands shared with space)

Importance of notification to the MIFR

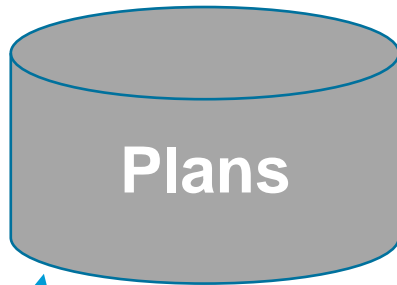
- **International recognition**: other countries should take station in consideration
- **Assigning frequencies**: e.g. MIFR assists in finding available frequencies in HF band
- **Coordination** : when applying No. 9.21 coordination, in case of objections BR checks MIFR. Objections should be based only on station in use (in MIFR)
- **MIFR has useful data for decisions at WRCs, RRCs**
 - **RRC-06**: only recorded non-broadcasting assignments were eligible for protection
 - **WRC-12**: protecting recorded aeronautical beacons from new amateur service
 - **WRC-19**: account for recorded TV stations for allocation to amateur service
 - **WRC-23**: MIFR parameters were used in sharing studies under several agenda items

Databases, software and online tools

Frequency databases



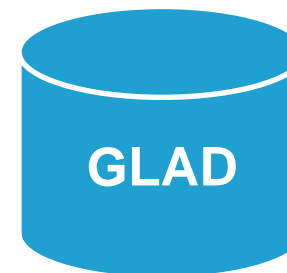
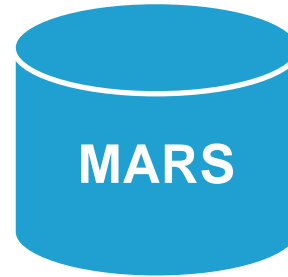
- worldwide
- all services
- all bands



- worldwide/regional
- specific services
- planned bands



Administrative and reference databases



Development and enhancement of Terrestrial WEB tools

eTerrestrial web platform

Common terrestrial web tools

eMIFR	To retrieve MIFR assignments of all terrestrial services
WISFAT	To submit frequency notices for terrestrial services
eValidation:	To validate frequency notices before submission via WISFAT
ePropagation	To calculate propagation prediction according to ITU-R

Broadcasting web tools

eQuery	To query broadcasting plans
ePub	To consult broadcasting Special Sections
myAdmin	To consult correspondence related to broadcasting assignments
eTools	To make various calculations under GE06, GE84, RJ81 for testing
eHFBC	To consult HFBC publications, to generate and validate HFBC

FXM web tools services

<u>eQueryFXM</u>	To query FXM assignments/allotments in MIFR and Plans
<u>ePubFXM</u>	To consult FXM Special Sections
<u>MyAdminFXM</u>	To consult correspondence related to FXM assignments
<u>eToolsFXM</u>	To make various calculations under RR and regional agreements