29TH WORLD RADIOCOMMUNICATION SEMINAR
30 November – 11 December 2020
ITUWRS ONLINE2020

Overview of terrestrial services

ITU Radiocommunication Bureau

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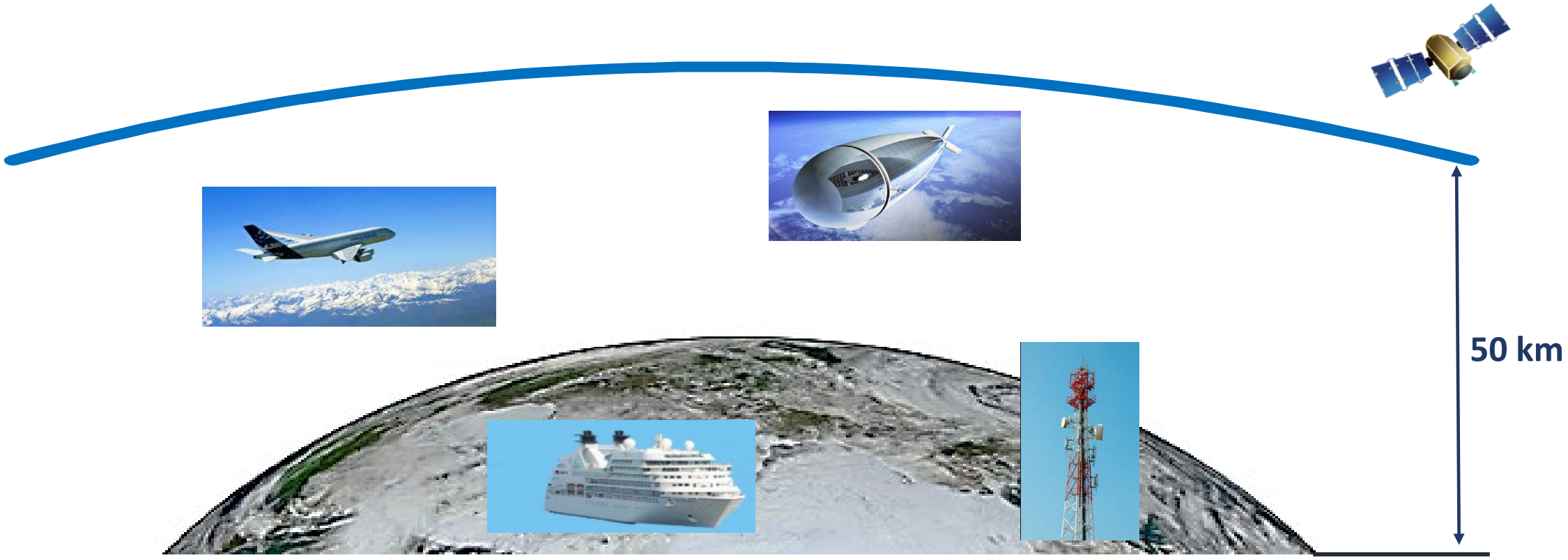
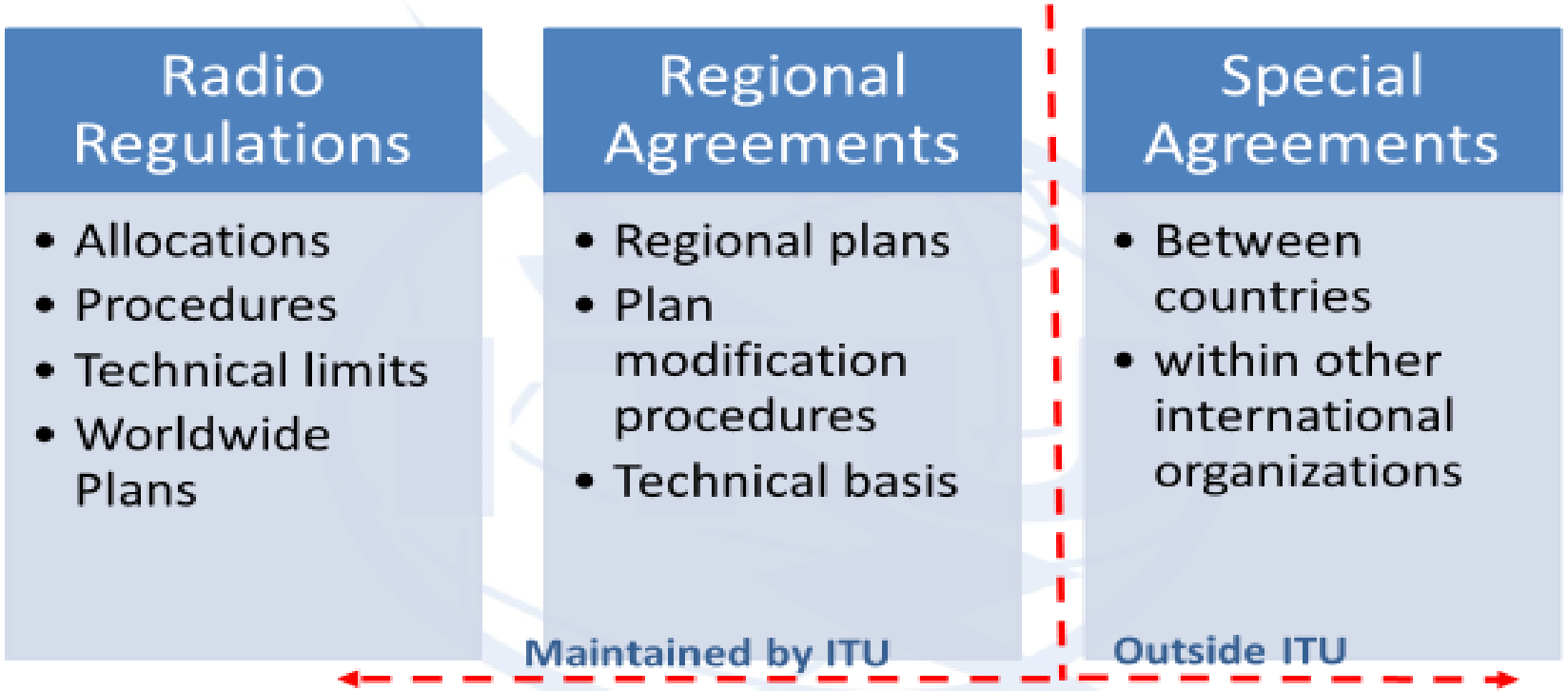
Terrestrial radiocommunication Services

Terrestrial services: the stations at ground, sea, in the air, up to ≈ 50 km



Radio Regulations determine the rules mainly for services, not applications, except some specific applications, e.g. IMT, HAPS, RLANs

Main regulatory instruments

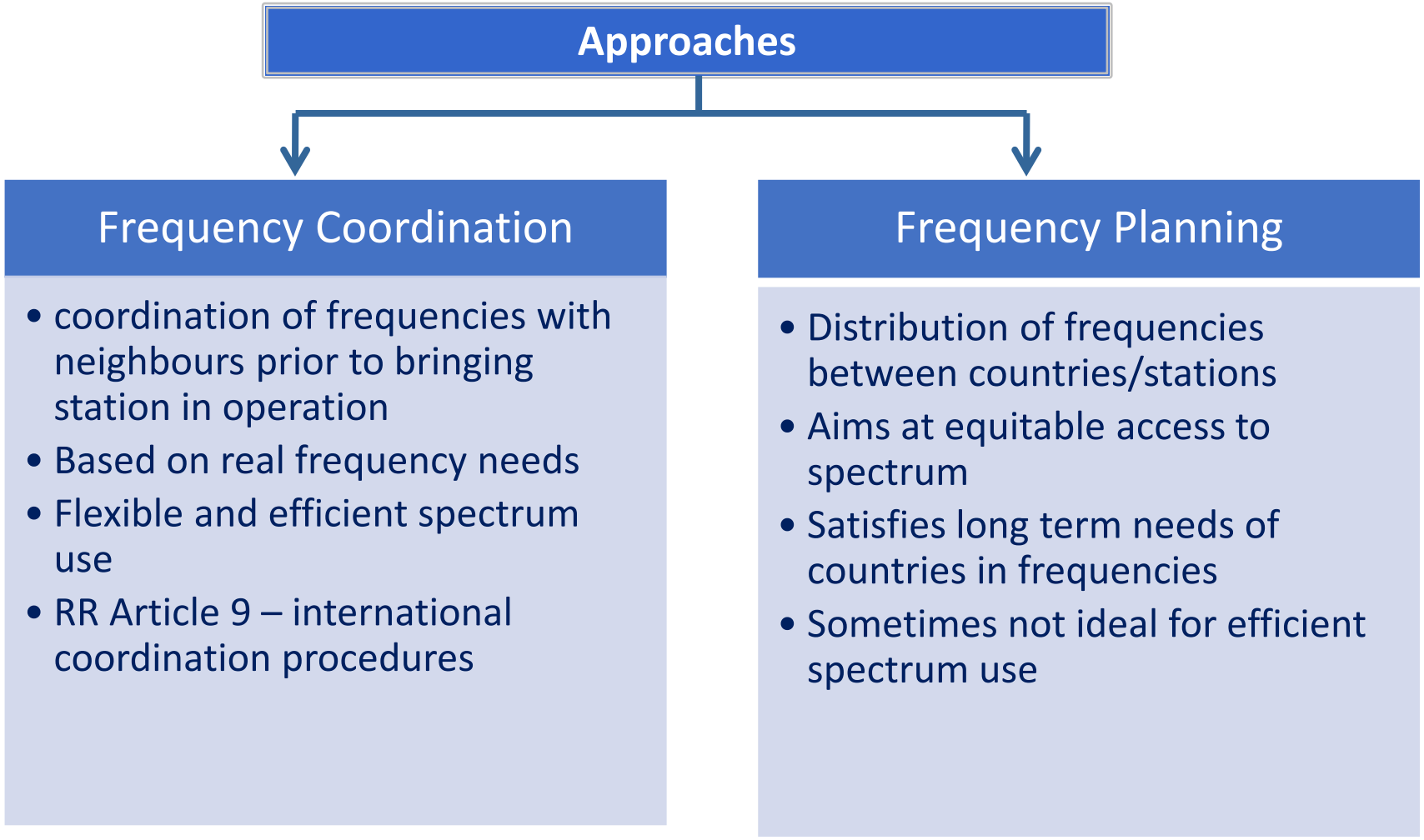


- Other ITU instruments:
  - Rules of Procedure that explain some difficult RR provisions
  - ITU-R Recommendations: technical standards containing system characteristics, channeling arrangements, mitigation techniques, etc.

Radio Regulations

- Main instrument of international regulations. Based on 2 main concepts:
  - (1) Blocks of frequency allocations to compatible services (Art. 1, 5)
  - (2) Regulatory procedures: Coordination (Art.9, AP5, 7), Notification to the MIFR (Art.11, AP4), Resolving Interference (Art. 15), Distress Communications (Art.33)...
  - Some bands are subject to worldwide frequency plans (in Aps 25, 26,27,..),
  - RR also contain technical limitations on stations, channeling arrangements
  - RR objectives:
    - Interference-free operation of stations
    - Stable planning environment for administrations and industry
    - Harmonization of spectrum usage

Approaches to sharing spectrum



Frequency plans for terrestrial services

- Existing frequency plans for terrestrial services:
  - Worldwide HF allotment plans for maritime mobile and aeronautical mobile services in RR Appendixes 25, 26, 27
  - Regional/sub-regional (concluded under the auspices of ITU)
    - VHF/UHF sound and TV broadcasting : GE84, ST61, GE89, GE06
    - LF/MF sound broadcasting: GE75, RJ81, RJ88
    - LF/MF maritime and aeronautical: GE85M, GE85N
  - Seasonal planning HFBC: ART 12 of the RR
  - Plans concluded in other organizations ITU: ICAO, IALA

Master International Frequency Register (MIRF)

- MIFR: worldwide database on the actual usage of frequencies by stations
- Covers all services, except amateur and HF broadcasting, records in 9.8 kHz - 224 GHz
- About 3 000 000 terrestrial assignments. Nearly 80 000 processed every year
- MIFR is published every 2 weeks in the BRIFIC on DVD and online (ISO image + e-MIFR)
- Practical value of registration in the MIFR:
  - The right of international recognition (other countries have to take records into account)
  - Identification of sources of interference
  - Basis for coordination activities
  - Reference data for sharing studies for WRCs preparations
- Notification is mandatory in some cases and essential in others (e.g. in border areas, in the bands shared with space)

Importance of notification to the MIFR, examples

- International recognition: e.g. interference from recorded station to non-recorded station
- 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 be based only on station in use (recorded)
- Useful data for decisions at WRCs, RRCs
  - RRC-04: only recorded non-broadcasting assignments were eligible for protection
  - WRC-03: account for recorded FX, MS for allocation to HF broadcasting
  - WRC-12: account for recorded aeronautical beacons for allocation to amateur service
  - WRC-19: account for recorded TV stations for allocation to amateur service

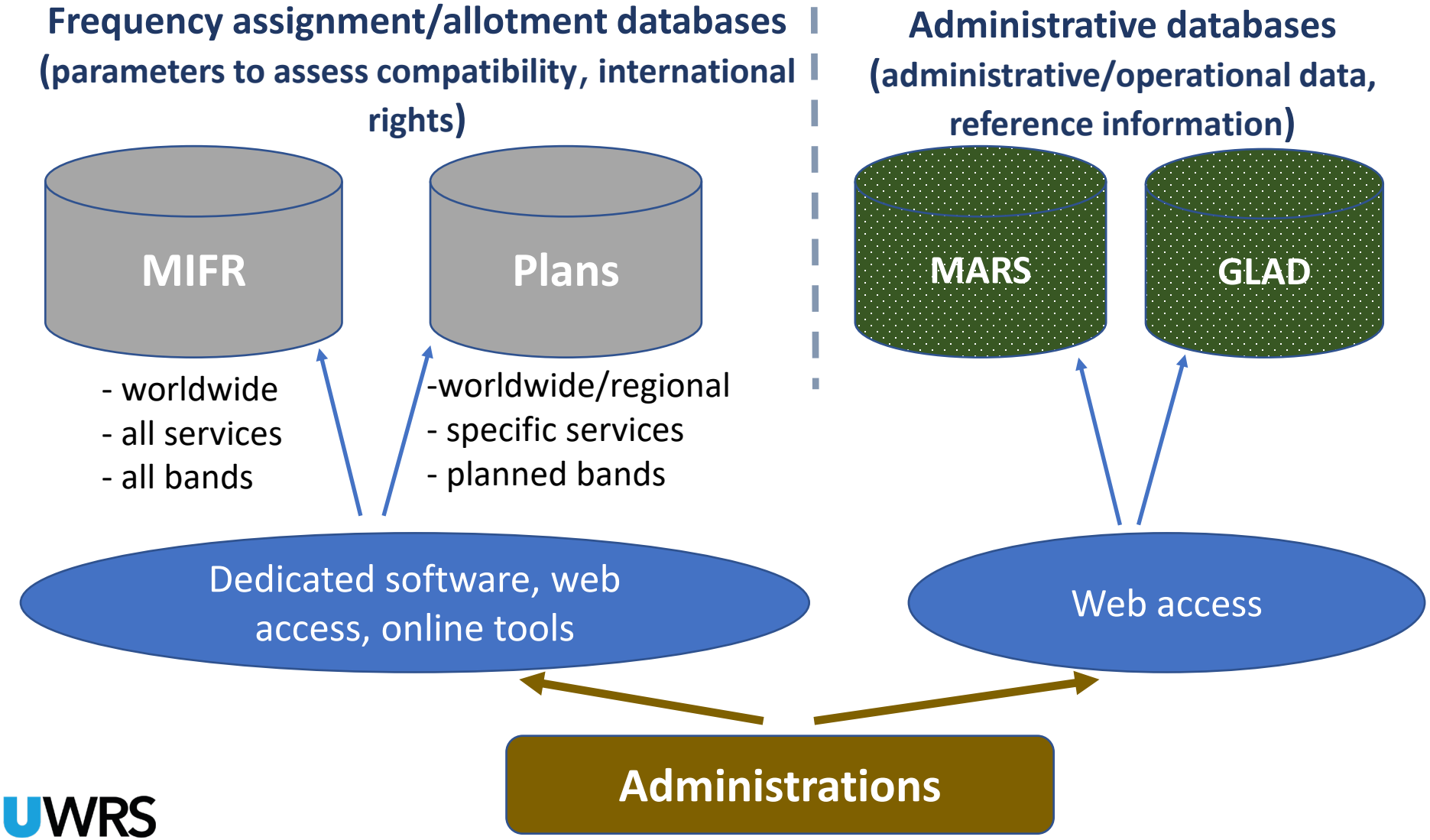
Other terrestrial activities

- Publishing List of Coast Stations (List IV), List of Ship Stations (List V) and maintenance of the related Maritime Access and Retrieval Database (MARS) – RR Article **20**
- Allocation of Means of Identification for stations (call sign series, Maritime Identification Digits, etc.) published in Global Administrative Database (GLAD) – RR Article **19**
- Organization of radiomonitoring programmes in HF band and in 406-406.1 MHz; publishing summaries of monitoring results. Publication of the List of International Monitoring Stations (List VIII) – RR Article 16
- Maintenance of the database of emergency and disaster relief communications (Resolution 647(Rev.WRC-15))
- Maintenance of the database of oceanographic radars (Resolution 612(Rev.WRC-12))

Assistance to administrations

- **Assistance** to administrations:
  - In the procedures of the RR and Regional Agreements, training in the related software, e.g. RR9.21 procedure for PSE, POL, CTR…
  - In resolving cases of harmful interference and infringements
  - In transition to digital TV and allocation of Digital Dividend, e.g. in Africa, Arab, Caribbean regions
  - In multilateral coordination meeting, e.g. on spillover
  - Providing best practices of spectrum usage

Databases, software and online tools



Thank you!

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Questions to brmail@itu.int

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