
ITU and ITU-R

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Committed to connecting the world

ITU

Facts

- ✓ Founded in 1865
- ✓ 193 Member States
- ✓ > 700 Sector members
- ✓ > 100 Academies
- ✓ 4 regional and 8 area offices

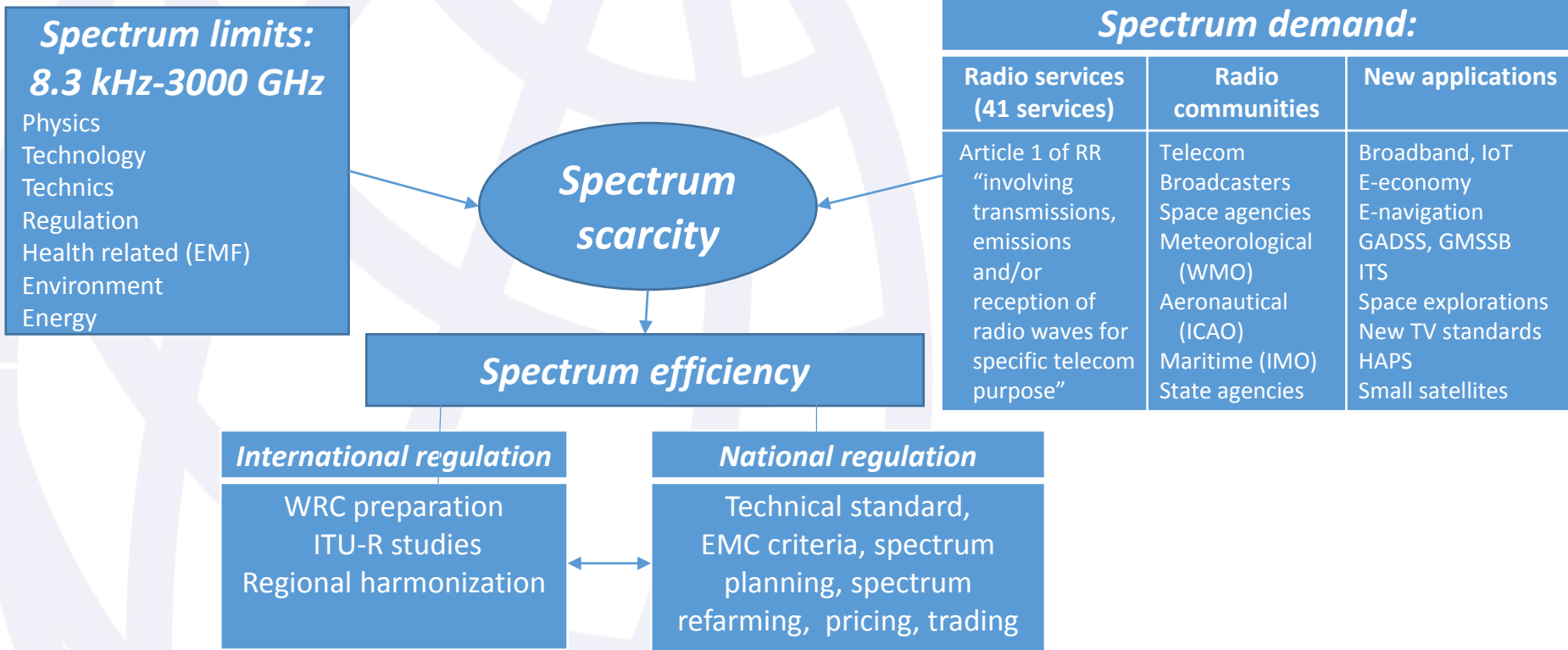
Structure

- ✓ *ITU-R* Radio standards and spectrum management
- ✓ *ITU-T* Telecom standards, regulation of numbering and tariffs
- ✓ *ITU-D* Assisting telecom projects in developing countries

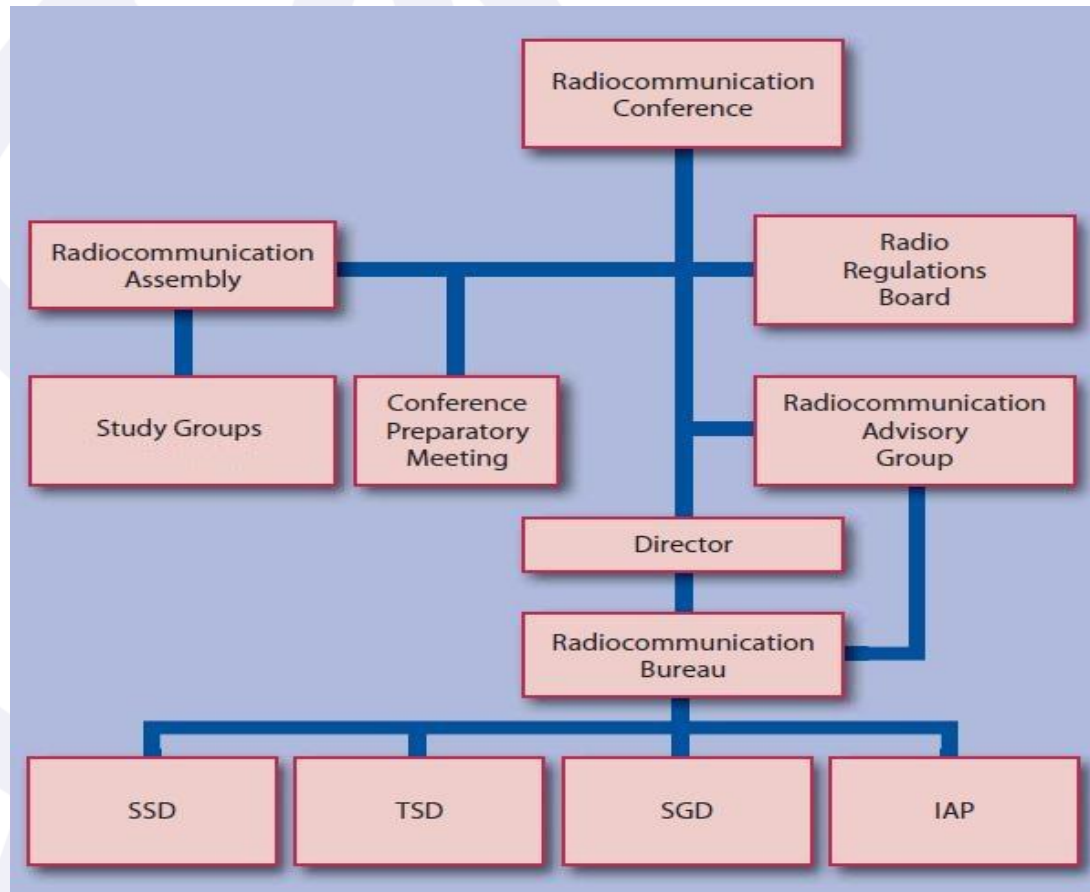
Why ITU-R- tips for NMOs

- **Spectrum is used by majority of meteorological observation systems**
- **Non-protected spectrum**
 - no operation
 - interference or restriction of technical parameters (degradation of quality)
 - rejection in national license for development of existing or new site
- **Endless story- increase of spectrum demand and use intensity**

Spectrum use paradigm



ITU-R



ITU-R activity

- Developing and updating international regulations on the use of orbit /spectrum

World Radiocommunication Conferences (WRC)

- Applying these regulations

Radiocommunication Bureau (BR)

- Developing and adopting standards and best practices on the use of orbit/spectrum

ITU-R Study Groups

- Disseminating information on these regulations, standards and best practices

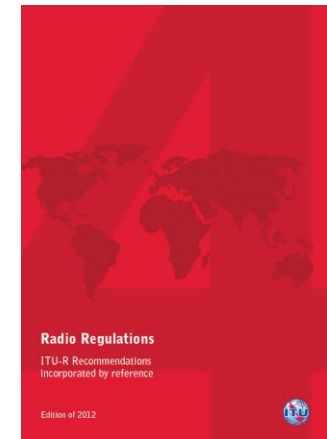
Seminars, workshop, presentations

WRC

- **Held every 3 to 4 years**
- **Review or revise Radio Regulations**
- **WRC-15- four weeks, more 4000 delegates, 160 Member states.**
- *Agenda for the Future*



Radio Regulations



- **Intergovernmental mandatory treaty**
- **Principles of use of orbit/spectrum**
- **Allocation of frequency bands for (radio) services**
- **Procedures, Plans, operational measures, technical restrictions**
- **International recognition of spectrum use**

Radio Regulations

RR Article 8:

Any frequency assignment recorded in the Master Register with a favourable finding shall have the right to *international recognition*.

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For such an assignment, this right means that other administrations shall take it into account when making their own assignments, in order to avoid harmful interference.

Spectrum allocations
Coordination procedures
Limitation of
operational parameters
Recording in Master
International Frequency
Register (MIFR)

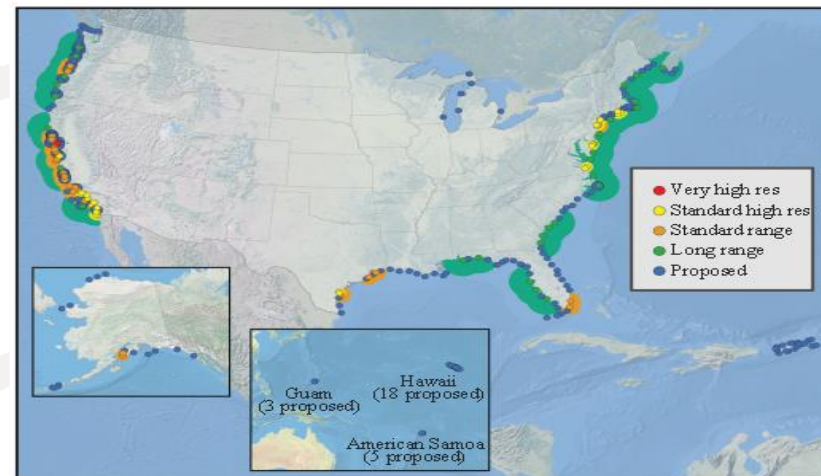
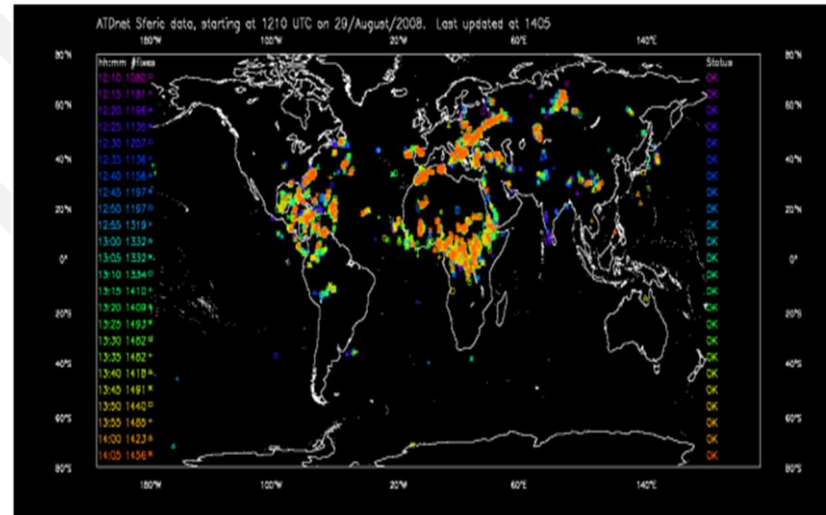
WRC-12

- **Issue:** lightning losses of **\$4-\$5** billion per year (*NLSI, 2010*)

Decision: Spectrum allocation for 24-hour thunderstorm detection system

- **Issue:** tsunami prediction, Japan, total damage **\$300** billion (*Live Science, 2011*)

Decision: worldwide spectrum for oceanographic radars



WRC-15

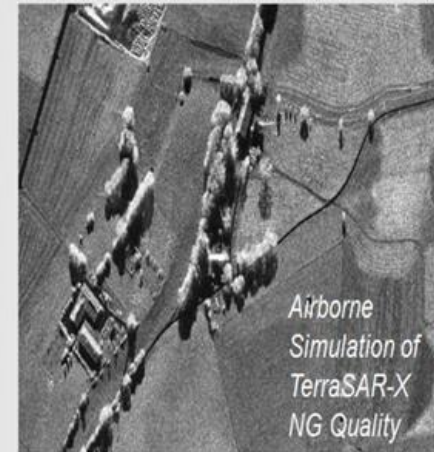
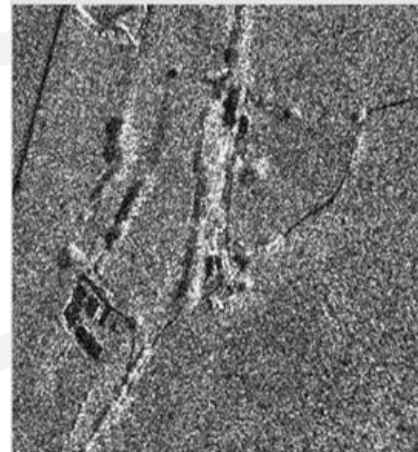
- **Issue:** Grow of number of meteorological satellites (100 existing and up to 90 new satellites until 2019 (*FAA*)). High data rate requirements for TT&C

Decision: worldwide allocation TT&C

- **Issue:** high resolution (about 0.2m) all weather surface monitoring

Decision: new allocation of 600 MHz.

Implication: TerraSAR (2020)



BR

- Maintenance and update Master International Frequency Registers (**MIFR**) for space and terrestrial services
- Processing of filings in accordance with Radio Regulations
- BR International Frequency Information Circular (**BR IFIC**)

ITU-R Study Groups



- efficient management and use of the spectrum/orbit
- characteristics and performance of radio systems
- operation of radio stations
- radiocommunication aspects of distress and safety matters

ITU-R Study Groups

Disaster phases	Major radiocommunication services involved	Major tasks of radiocommunication services	ITU-R
Prediction and Detection	<ul style="list-style-type: none"> - Meteorological services (meteorological aids and meteorological- satellite service) - Earth exploration-satellite service 	Weather and climate prediction. Detection and tracking of earthquakes, tsunamis hurricanes, typhoons, forest fires, oil leaks etc. Providing warning information	SG 7
Alerting	- Amateur services	Receiving and distributing alert messages	WP 5A
	- Broadcasting services terrestrial and satellite (radio, television, etc.)	Disseminating alert messages and advice to large sections of the public	SG 6
	- Fixed services terrestrial and satellite	Delivering alert messages and instructions to telecommunication centres for further dissemination to public	WP 4A, 5C
	- Mobile services (land, satellite, maritime services, etc.)	Distributing alert messages and advice to individuals	SGs 4,5
Relief	- Amateur services	Assisting in organizing relief operations in areas (especially when other services are still not operational)	WP 5A
	- Broadcasting services terrestrial and satellite (radio, television, etc.)	Coordination of relief activities by disseminating information from relief planning teams to population	SG 6
	- Earth exploration-satellite service	Assessment of damage and providing information for planning relief activities	SG 7
	- Terrestrial and satellite	Exchange of information between different teams/groups for planning and coordination relief activities	WP5A, 5D, 4A, 4C
	- Mobile services (land, satellite, maritime services, etc.)	Exchange of information between individuals and/or groups of people involved in relief activities	WP 5A, 5B, 5D

ITU-R publications

- **Emergency and Disaster relief Handbook.**
- **SM. 2092.** *Studies related to the impact of active services allocated in adjacent or nearby bands on Earth exploration-satellite service (passive)*

Methodology and framework for documenting the results of the interference assessment between active and EESS passive services operating in adjacent and nearby bands.

- **S.2151.** *Use and examples of systems in the fixed-satellite service in the event of natural disasters and similar emergencies for warning and relief operations*

Guidelines on the use of satellite networks in the event, overall system and terminal design

ITU-R publications

- **BT. 2299.** *Broadcasting for public warning, disaster mitigation and relief*

Rapid deployment of equipment and networks currently available in the terrestrial and satellite-broadcasting services

- **M.2085.** *Role of the amateur and amateur-satellite services in support of disaster mitigation and relief*

Roles of the amateur services in emergency telecommunications, frequency, communications modes

- **M.2149.** *Use and examples of mobile-satellite service systems for relief operation in the event of natural disasters and similar emergencies*

ITU-R publications

- **M.2291.** *The use of International Mobile Telecommunications for broadband public protection and disaster relief applications*

NMOs contributions

- Cooperation with national telecom administration (national preparation to WRC and ITU-R SG activities)
- WMO Steering Group on Radio-Frequency Coordination (SG-RFC)
- Notification of observation systems

Conclusion

Take care about your spectrum!