



ITU Kaleidoscope 2011

The fully networked human?
Innovations for future networks and services

ITU-R Study Group Activities

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Role of ITU-R

- ...
- carry out studies without limit of frequency range and adopting Recommendations on radiocommunication matters.

(ref. Article 12 of Constitution)

conducted through *(inter alia)*:

- ...
- Approval of **Recommendations** by Member States

Technical studies are required
which are conducted in **Study Groups**
(with participation of Members States, Sector Members and Associates, ITU-R Academia)

Objectives of ITU-R Study Groups

Develop technical bases for radio conferences (WRC)

Conference Preparatory Meeting process for WRCs

Establish Recommendations

International voluntary *standards* on:

- spectrum management
- system characteristics and operation

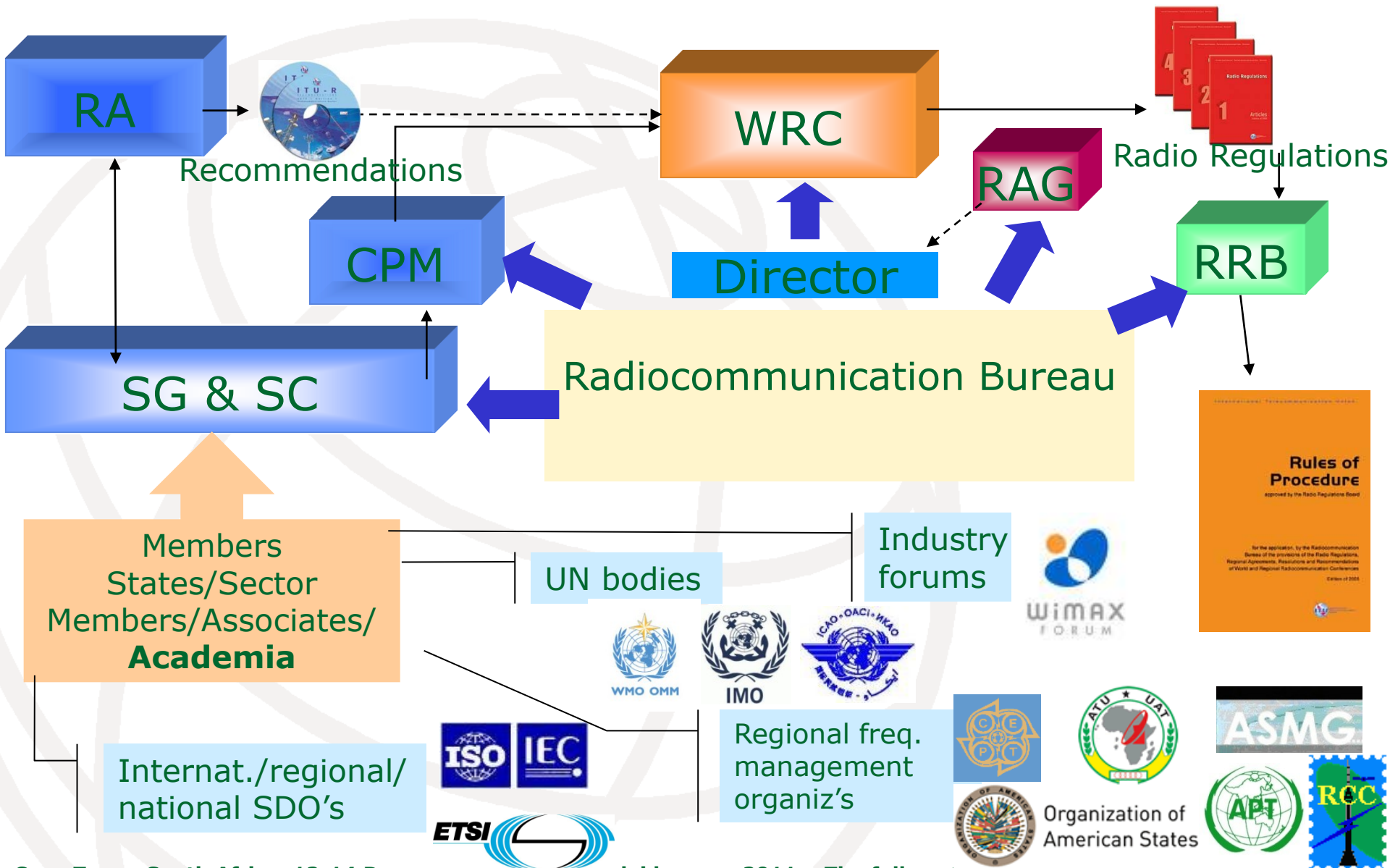
ITU-R represents:

International focal point for standardization of wireless systems

Compile Reports and Handbooks

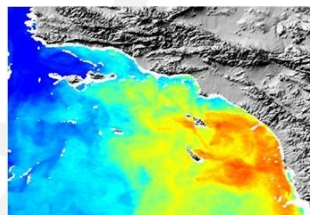


ITU-R structure & activities



Some key areas of ITU-R standardization

- Spectrum monitoring
- Broadband wireless access (terrestrial and satellite)
- IMT - International Mobile Telecommunications
- Broadcasting technologies
- Emergency communications
- Environmental monitoring



ITU-R Study Groups

SG 1: Spectrum management

SG 3: Radiowave propagation

SG 4: Satellite services

SG 5: Terrestrial services

SG 6: Broadcasting service

SG 7: Science services

CPM: Conference Preparatory Meeting

SC: Special Committee on Regulatory and procedural matters

CCV: Coordination Committee for Vocabulary

- ✓ **>900 Recommendations**
- ✓ **"Standards" in areas of spectrum management and radio technology**
- ✓ **Result of consensus from meetings of world-wide experts**
- ✓ **Some referred to in RR**
- ✓ **Used by spectrum planners and system designers**

**Counsellors and Assistants
in the Study Group
Department of BR**

<http://www.itu.int/ITU-R/go/rsg>

Radiocommunication Assembly

- ✓ convened every 3-4 years
- ✓ associated in time and place with WRCs

(Article 13 of Constitution)

**RA-12: Geneva,
16-20 January
2012**

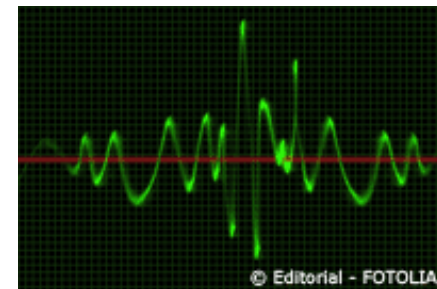
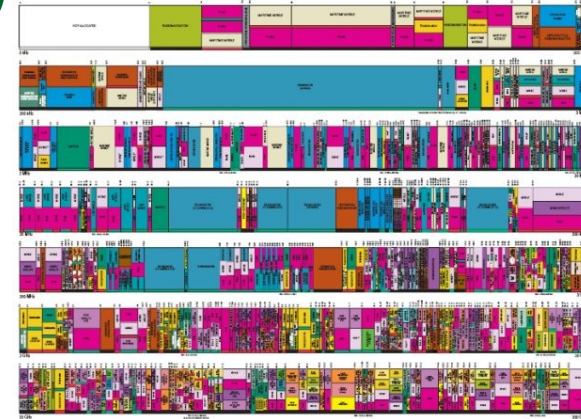


- Adopts Study Group work programmes
- Approves ITU-R Resolutions
- working procedures
- specific aspects of Study Group responsibility
- Approves Recommendations
- Establishes ITU-R Study Groups (and elects their chairmen/vice-chairmen)

Study Group 1

Spectrum management

- Spectrum management (SM)
 - principles and techniques
- General principles of sharing
- Spectrum monitoring
- Long-term strategies for spectrum utilization
- Economic approaches to national SM



International spectrum regulatory framework

Short range devices (SRD)

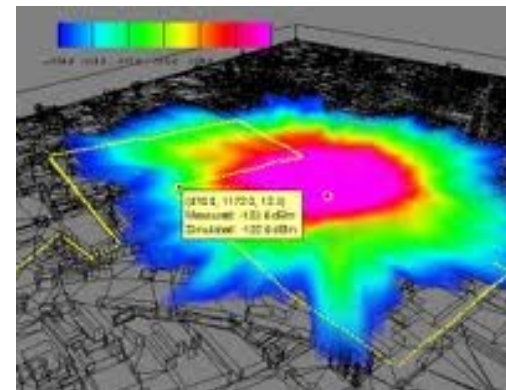
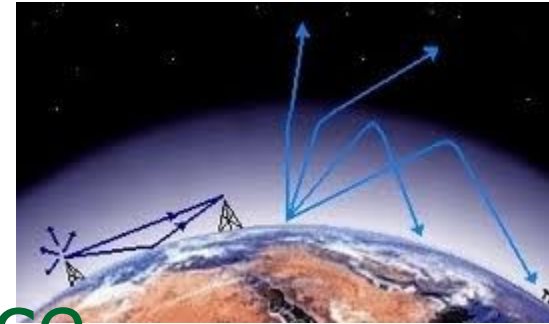
Study Group 3

Radiowave propagation

- Propagation in ionized and non-ionized media
- Point-to-point and Earth-space propagation
- Modelling and development of prediction methods
- Radio noise

Characteristics and mapping of propagation medium

Propagation prediction methods



Study Group 4

Satellite services

- ❑ Systems and performance in FSS, BSS, MSS and RDSS
- ❑ Efficient orbit/spectrum utilization for FSS, BSS, MSS and RDSS
- ❑ IP Global broadband Internet access via satellite
- ❑ Early warning and relief operations



Technical characteristics for systems and networks in the RNSS

Satellite radio interface of IMT-2000



Study Group 5

Terrestrial services



- IMT-2000 and IMT-Advanced
- Fixed, mobile, portable and nomadic communications, including BWA, RLANs, HAPS
- Maritime and aeronautical services
- Radiodetermination service
- Amateur service
- SDR and CRs



Next generation mobile access "IMT-Advanced"

Spectrum issues for maritime and aeronautical services

Study Group 6

Broadcasting service

- Programme production
- Programme assembly
- Delivery
- Reception quality

Sharing issues in the UHF band

**Multimedia and data
broadcasting for mobile
reception**

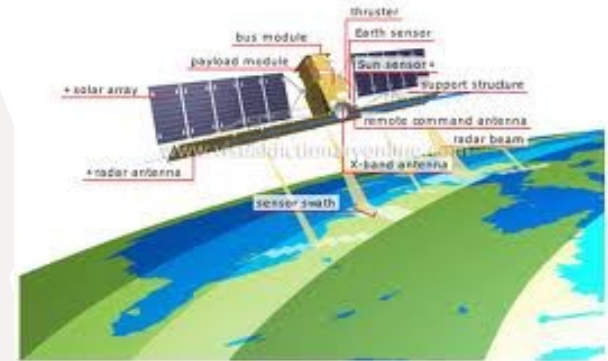
Accessibility



Study Group 7

Science services

- ❑ Systems for space operation, space research, Earth exploration and meteorology
- ❑ Radio astronomy
- ❑ Standard frequency and time signals



EESS including meteorological satellite service for disaster prediction and detection, and for climate monitoring

Protection of passive services, e.g. radioastronomy



ITU-R Study Groups on the Web

Home : [ITU-R](#) : Study Groups

Radiocommunication Sector (ITU-R) | Home | ITU Sectors | Newsroom | Events | Publications | About Us

Study Groups

Scope

More than 1 500 specialists, from telecommunication organizations and administrations throughout the world, participate in the work of the Study Groups concerned with:

- ▶ [drafting Technical bases for Radiocommunication Conferences](#)
- ▶ [developing Draft Recommendations](#)
- ▶ [compiling Handbooks](#)

Structure

- ▶ [Study Group 1 \(SG 1\) - Spectrum management](#)
- ▶ [Study Group 3 \(SG 3\) - Radiowave propagation](#)
- ▶ [Study Group 4 \(SG 4\) - Satellite services](#)
- ▶ [Study Group 5 \(SG 5\) - Terrestrial Services](#)
- ▶ [Study Group 6 \(SG 6\) - Broadcasting service](#)
- ▶ [Study Group 7 \(SG 7\) - Science services](#)
- ▶ [Coordination Committee for Vocabulary \(CCV\)](#)
- ▶ [Conference Preparatory Meeting \(CPM\)](#)
- ▶ [Special Committee \(SC\)](#)

General Information

- ▶ [Scope](#)
- ▶ [Study Groups Structure](#)
- ▶ [Brochure](#)
- ▶ [Chairmen and Vice-Chairmen](#)
- ▶ [Chairmen and Vice-Chairmen Meetings](#)
- ▶ [Contacts](#)

Disbanded Groups

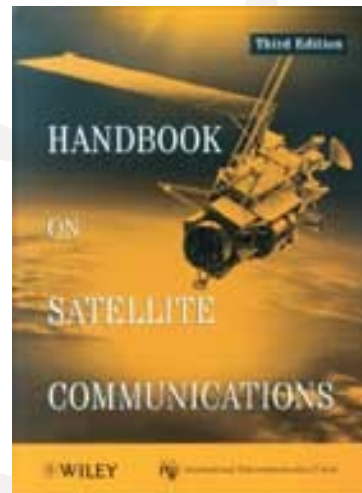
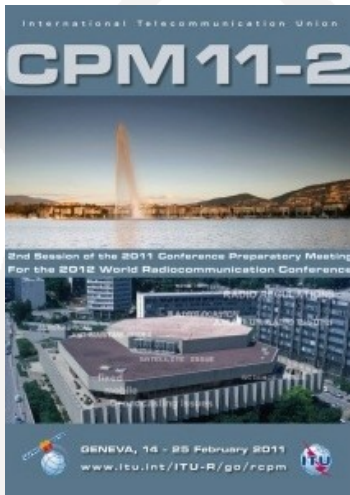
- ▶ [Study Group 8 \(SG 8\) - Mobile, radiodetermination, amateur and related satellite services](#)
- ▶ [Study Group 9 \(SG 9\) - Fixed service](#)

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See: <http://www.itu.int/ITU-R/go/rsg>

Study Group Products

- ITU-R Recommendations
- Reports and Handbooks
- Technical bases for radio conferences



Example Reports from ITU-R

- ❑ Economic aspects of spectrum management
- ❑ Fixed service applications using free-space optical links
- ❑ Means of calculating low-orbit satellite visibility statistics
- ❑ Guidelines for evaluation of radio interface technologies for IMT-Advanced
- ❑ Transition from analogue to digital terrestrial broadcasting

<http://www.itu.int/publ/R-REP/en>

Example Handbooks from ITU-R

- ❑ National Spectrum Management
- ❑ Spectrum Monitoring
- ❑ Satellite Communications (FSS)
- ❑ Radiowave Propagation information for designing terrestrial point-to-point links
- ❑ Use of radio spectrum for meteorology: weather, water, climate monitoring and prediction
- ❑ Digital terrestrial TV broadcasting
- ❑ Land mobile including wireless access
- ❑ Frequency adaptive systems

<http://www.itu.int/publ/R-HDB/en>

Concluding remarks

- ❑ ITU Radiocommunication Sector represents a focal point for standardization of radiocommunication services and systems
- ❑ ITU-R Study Groups are the “home” for the technical studies required for the standardization activities
- ❑ Principal products:
 - Recommendations, Reports and Handbooks
 - Technical bases for Radiocommunication Conferences