

ITU-D Regional Development Forum for the Asia Pacific Region:  
 "NGN and Broadband, Opportunities and Challenges"  
 Yogyakarta, Indonesia, 27-29 July 2009

## Role of the Radiocommunication Sector (ITU-R) in Bridging the Digital Divide

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## Key issues in ITU-R

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- **WRC-11** **World Radiocommunication Conference 2011**  
Information Meeting for Africa, Geneva, 14-16.9.09
- **WRC-07** **implementation of results**  
Software development: Appendix 30B (FSS Plan)
- **RRC-06** **implementation of results**  
Software development: GE06 (BS Digital Plan)
- **IMT-Advanced** **ITU global standard for international mobile telecommunications**  
  
Radio technology [evaluation process](#)
- **Space regulations BR Workshop on the efficient use of the spectrum/orbit resource, Geneva, 6 May 2009**

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## ITU-R history in brief

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<b>1906</b> (Berlin)	<b>International Radiotelegraph Convention</b> (1 <sup>st</sup> <i>Radio Regulations</i> )
<b>1927</b> (Washington DC)	<b>CCIR</b> (International Radio Consultative Committee)
<b>1932</b> (Madrid)	Telegraph & Radiotelegraph Conventions merged: the International Telegraph Union became the <b>International Telecommunication Union</b>
<b>1947</b> (Atlantic City)	<b>IFRB</b> (International Frequency Registration Board) ITU as UN specialized agency
<b>1992</b> (Geneva)	<b>ITU-R</b> (Radiocommunication Sector ): ▪ <b>RRB</b> (Radio Regulations Board) ▪ <b>BR</b> (Radiocommunication Bureau)
<b>2006</b>	 <b>100 years of ITU Radio Regulations</b>

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## ITU-R mission

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*“To ensure rational, equitable, efficient and economical use of the **radio-frequency spectrum** by all radiocommunication services, including those using satellite orbits, and to carry out studies and adopt **recommendations** (standards) on radiocommunication matters.”*

### International regulatory framework :

- to facilitate equitable access to and rational use of the natural resources of the radio-frequency spectrum and the geostationary-satellite orbit;
- to ensure the availability and protection from harmful interference of the frequencies provided for distress and safety purposes;
- to assist in the prevention and resolution of cases of harmful interference between the radio services of different administrations;
- to facilitate the efficient and effective operation of all radiocommunication services;
- to provide for and, where necessary, regulate new applications of radiocommunication technology.

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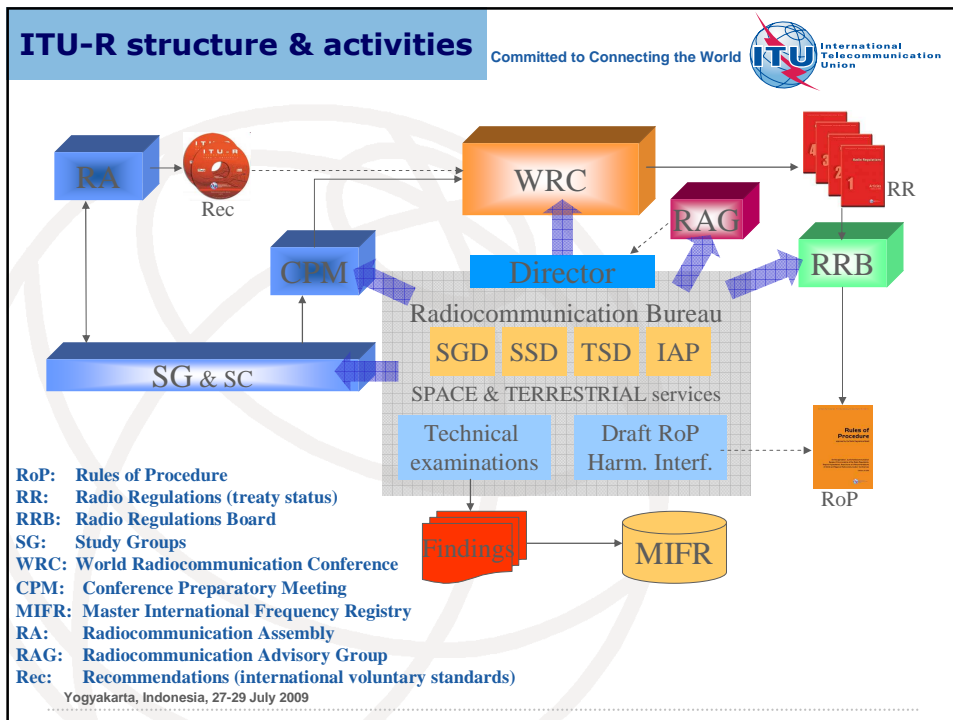
## How ITU-R implements these functions?

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- **Fulfilling international spectrum management functions (through the Radiocommunication Bureau and the Radio Regulations Board) in accordance with the Radio Regulations and Regional Agreements/ Plans, including:**
  - processing frequency assignments/allotments submitted by Administrations;
  - determination of coordination requirements;
  - maintenance of the Master International Frequency Register (MIFR) and Regional Plans; etc.
- **Developing and implementing ITU-R standards on:**
  - radio devices/applications/systems/networks;
  - procedures, rules and algorithms for development, introduction and maintenance of radio applications/devices/systems/networks.

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 **WRC**

**World Radiocommunication Conference**

- ✓ Updates the Radio Regulations (*treaty status*)
  - Spectrum Allocation
  - Notification procedures
  - Administrative and operational procedures
- ✓ Adopts Resolutions
- ✓ Held every 3-4 years



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






## WRC-07 Participation (Member States of ITU Region 3)



 Afghanistan	 Korea, DPR	 Malaysia	 Pakistan
 Australia	 India	 Maldives	 Papua New Guinea
 Bangladesh	 Indonesia	 Micronesia	 Philippines
 Bhutan	 Iran, Islamic Rep.	 Myanmar	 Singapore
 Brunei Darussalam	 Japan	 Nepal	 Sri Lanka
 Cambodia	 Korea, Rep.	 New Zealand	 Thailand
 China, P.R.	 Korea, Rep.	 New Zealand	 Vietnam

## WRC-07 & WRC-11

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### WRC-07 (22.10-16.11.2007)

- 30 agenda items, 3100 proposals, 2800 del.!
- almost all services (terrestrial: FS, MS, BS, Amat.S, RAS, RLS, space: FSS, BSS, MSS, EESS, SRS, SO, MetSat, Amat.Sat)
- several applications: IMT, HAPS, HF, GMDSS

### WRC-11 (03-28.10 or 24.10-18.11.2011)

- 33 agenda items,
- again almost all services (terrestrial: RLS, AM(R)S, passive S, FS, BS, MS, Maritime MS, Amat.S, space: AMS(R)S, SRS, BSS, MSS, MetAids, RDSS, MetSat) and other issues (Res.951, SRDs, Cognitive Radio)
- and many applications and systems : UAS, ENG, HAPS, oceanographic radar, ...

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## Radio Regulations (RR)

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The Radio Regulations (international *treaty*) incorporates the decisions of the World Radiocommunication Conferences, including all Appendices, Resolutions, Recommendations and ITU-R Recommendations incorporated by reference.



- Frequency block allocations to defined radio services (Article 5);
- Mandatory or voluntary **regulatory procedures** (coordination, plan modification, notification, recording) that are adapted to the allocation structure.

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## Radio standardization

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### Objectives of ITU-R Study Groups

Develop technical bases for radio conferences



CPM 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

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## ITU-R Study Groups

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**SG 1: Spectrum management**  
**SG 3: Radiowave propagation**  
**SG 4: Satellite services**  
**SG 5: Terrestrial services**  
**SG 6: Broadcasting service**  
**SG 7: Science services**

- ✓ >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

**In addition:**

**CCV: Coordination Committee for Vocabulary**  
**CPM: Conference Preparatory Meeting**  
**SC: Special Committee on regulatory and procedural matters**

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

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## ITU-R Recommendation

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- **Definition:**  
«An answer to a Question or part(s) of a Question which, within the scope of existing knowledge and studies, recommends specifications, data or guidance; provides a recommended way or ways of undertaking a specified task; or a recommended procedure or procedures for a specified application and which is considered to be sufficient to serve as a basis for international cooperation in a given context in the field of radiocommunications.»

*Source: Resolution ITU-R 1-5 (§ 6.1.2)*

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## ITU radio standardization

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- ✓ **Mobile (cellular) communications**
  - IMT (IMT-2000 & IMT-Advanced)
  - Intelligent Transportation Systems (ITS)
- ✓ **Broadband Wireless Access (BWA)**
  - fixed & mobile (terrestrial) & satellite
- ✓ **Digital Broadcasting**
  - Mobile TV
- ✓ **Spectrum management**
  - Software-Defined/Cognitive Radios
- ✓ **Emergency communications**
  - Climate Change

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## Radio standardization - reducing the gap

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### RESOLUTION 47 (Doha, 2006): Enhancement of knowledge and effective application of ITU Recommendations in developing countries

*noting*

- the difficulties in understanding ITU Recommendations and related international standards to apply new technology to the network appropriately and effectively;
- the lack of practical information on the application of ITU Recommendations and related standards of other countries, and the lack of guidelines on applying these technical documents,

#### → **ITU is instructed**

- to promote participation in training courses and workshops on best-practice application of ITU Recommendations for developing countries;
- to establish a database containing information on new technologies that are standardized and develop guidelines on applying ITU Recommendations.

#### → **Administrations are encouraged**

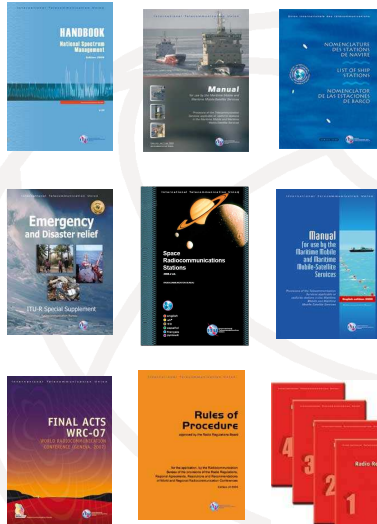
**to establish and maintain active national structures to provide for coordination of internal preparation and follow-up, and coordination of participation in external regional and international standardization bodies (e.g., ITU-R), to protect their government & industry interests.**

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# ITU-R Publications

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- BR International Frequency Information Circular (IFIC)
- Space Radiocommunication Stations on DVD-ROM
- Radio Regulations
- Service documents
- ITU-R Recommendations
  - Online subscriptions
  - CD/DVD-ROM
  - Paper
- Handbooks

**ITU BOOKSHOP**

<http://www.itu.int/publications>

The screenshot shows the ITU-R website interface. The top navigation bar includes 'Home', 'Information', 'Statistics', and 'About ITU'. The main content area features a central text block about the ITU-R's role in global management of radio-frequency spectrum and satellite orbits. Below this, there are sections for 'In Focus: Spotlight on ITU-R's key activities' with links to 'ITU global standard for international mobile telecommunications - IMT-Advanced', 'Maritime mobile Access and Retrieval System (MARS)', 'Radio Communications and Climate Change', and 'World Radiocommunication Conference 2011 (WRC-11)'. A 'Newsflashes' section lists recent updates such as 'RRB - Rules of Procedure, Edition of 2009, is now available' and 'MARS - BR Circular Letter (CM/17) - ITU maritime services database'. The right sidebar contains a 'Director's corner' with a photo of Ericsson, a 'Meetings' section listing upcoming events like 'SG-6' and 'JTG-5-8', and a 'Publications' section with links to 'Key Publications' and 'Latest Publications'.



**Thank you!**