

Regional Development Forum 2008

“Bridging the Standardization Gap in Developing Countries”

Brasília, 19-20 May 2008

ITU Radiocommunication Sector (ITU-R)

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Deputy Director

ITU Radiocommunication Bureau

Structure



Radiocommunications
- regulations
- standards



Standardization

Development

ITU key priorities

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- radio spectrum
- international standards
- emergency communications
- digital divide
- cybersecurity



ITU-R history in brief

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1906 (Berlin)	International Radiotelegraph Convention (1 st <i>Radio Regulations</i>)
1927 (Washington DC)	CCIR (International Radio Consultative Committee)
1932 (Madrid)	Telegraph & Radiotelegraph Conventions merged: the International Telegraph Union became the International Telecommunication Union
1947 (Atlantic City)	IFRB (International Frequency Registration Board) ITU as UN specialized agency
1992 (Geneva)	ITU-R (Radiocommunication Sector): <ul style="list-style-type: none">• RRB (Radio Regulations Board)• BR (Radiocommunication Bureau)
2006	 100 years of ITU <i>Radio Regulations</i>

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 on radiocommunication matters.”

Role conducted through
(inter alia):

- ✓ world and regional radio-communication conferences
- ✓ establishment of Recommendations

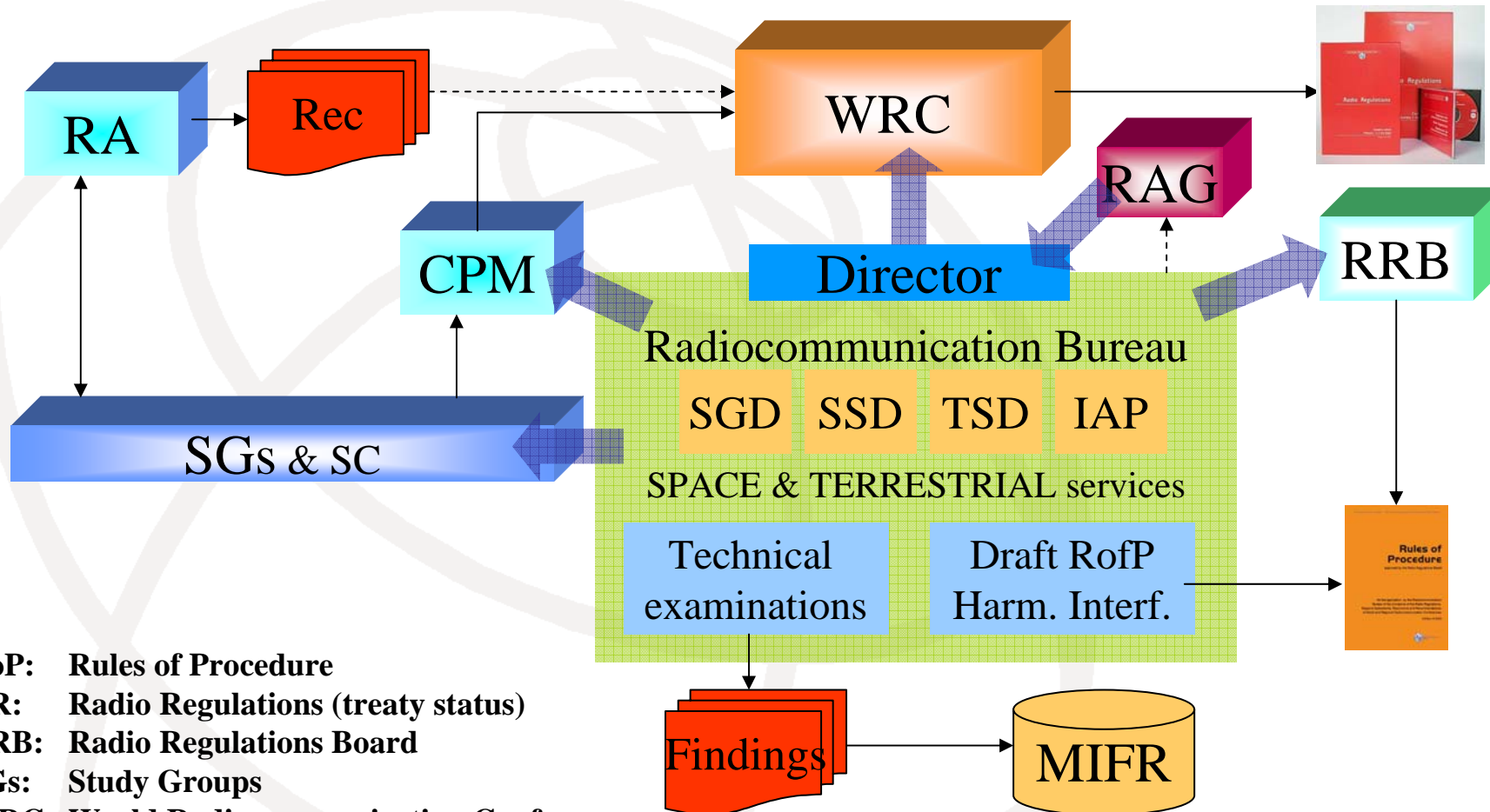
Technical studies are required which are conducted in **Study Groups**



In implementing this mission, the actions in ITU-R aim at creating the conditions for harmonized development and efficient operation of existing and new radiocommunication systems, taking due account of all parties concerned.

ITU-R structure & activities

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- RoP:** Rules of Procedure
- RR:** Radio Regulations (treaty status)
- RRB:** Radio Regulations Board
- SGs:** Study Groups
- WRC:** World Radiocommunication Conference
- CPM:** Conference Preparatory Meeting
- MIFR:** Master International Frequency Registry
- RA:** Radiocommunication Assembly
- RAG:** Radiocommunication Advisory Group
- Rec:** Recommendations (international voluntary standards)

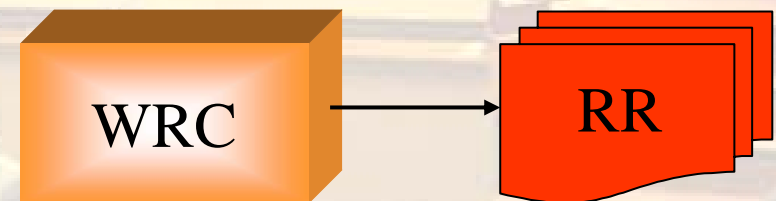
World Radiocommunication Conference

✓ Updates the Radio Regulations
(*treaty status*)

- Spectrum Allocation
- Notification procedures
- Administrative and operational procedures

✓ Adopts Resolutions

✓ Held every 3-4 years



Radio Regulations (RR)

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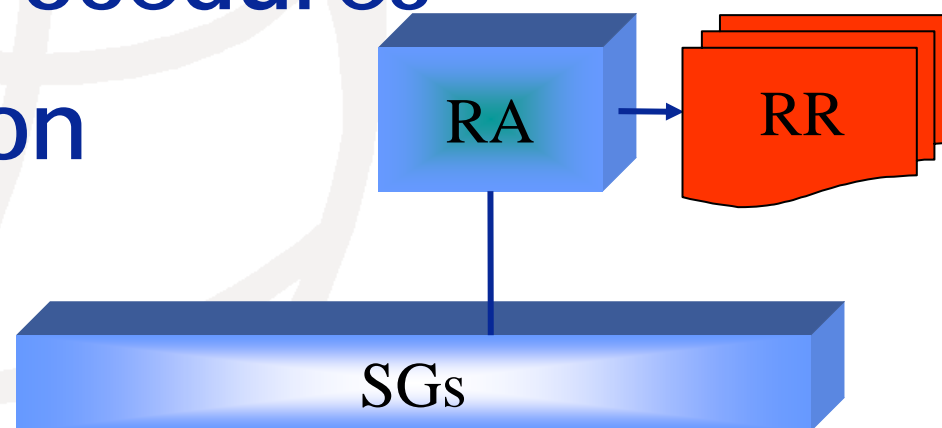


The **Radio Regulations** (*treaty status*) incorporates the decisions of the World Radiocommunication Conferences, including all Appendices, Resolutions, Recommendations and ITU-R Recommendations incorporated by reference.



- 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

- ✓ Approves ITU-R Recommendations and Resolutions
- ✓ Adopts a work program for the ITU-R Study Groups
- ✓ Adopts working procedures
- ✓ Held in conjunction with a WRC

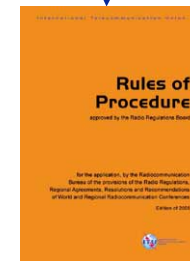


Radio Regulations Board (RRB)

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- ✓ Approves Rules of Procedure to facilitate the application of the Radio Regulations
- ✓ Considers cases of harmful interference & appeals against BR decisions on frequency assignment
- ✓ Part-time elected members & max. 4 meetings/year



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>

- **Groups of experts (> 1500) from ITU membership:**

- ITU Member States: **191**
- ITU-R Sector members: **276**
- ITU-R Study Group Associates: **27**

- **Unique global forum addressing standardization of radiocommunications and involving all actors:**

- Administrations of Member States
- Manufacturers, Scientific or Industrial Organizations
- Service providers / Operators

Study Group

Online information

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★ ☆ Radiocommunication Sector (ITU-R) - Study Groups

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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Study Group

Sample web page

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Radiocommunication Sector (ITU-R) - Study Group 1 (SG 1) - Spectrum management - Windows Internet Explorer

http://www.itu.int/ITU-R/index.asp?category=study-groups&link=rsg1&lang=en

Radiocommunication Sector (ITU-R) - Study Group 1 (...)

Scope

Spectrum management principles and techniques, general principles of sharing, spectrum monitoring, long-term strategies for spectrum utilization, economic approaches to national spectrum management, a...
[More...](#)

Next meeting

- ▶ [Thursday 26/06/08 - Friday 27/06/08](#)
- ▶ Place : **Switzerland [Geneva]**
- ▶ Status : **Confirmed** - [Add to Calendar](#)
- ▶ [All meetings](#)

[ITU-R Meetings schedule](#) - [Meeting sessions](#)

General Information

- ▶ [Brochure](#)
- ▶ [Chairmen and Vice-Chairmen](#)
- ▶ [Counsellor](#)
- ▶ Contributions submission: rsg1@itu.int
- ▶ [Mailing lists - FTP server](#)
- ▶ [ITU-R Electronic facilities](#)

Structure

- ▶ [Working Party 1A \(WP 1A\) - Spectrum engineering techniques](#)
- ▶ [Working Party 1B \(WP 1B\) - Spectrum management methodologies and economic strategies](#)
- ▶ [Working Party 1C \(WP 1C\) - Spectrum monitoring](#)

Publications

- ▶ [ITU-R Questions - SG 1](#)
- ▶ [Recommendations - ITU-R SM Series](#)
- ▶ [Reports - ITU-R SM Series](#)

Documents

- ▶ [Contributions](#) [TIES](#) [XML](#) [?](#)
- ▶ [Administrative Documents \(ADM\)](#)
- ▶ [Information Documents \(INFO\)](#)
- ▶ [Circular Letters \(LCCE\)](#) [TIES](#) [XML](#) [?](#)
- ▶ [Administrative Circulars \(CA\)](#) [XML](#) [?](#)
- ▶ [Administrative Circulars \(CACE\)](#) [XML](#) [?](#)
- ▶ [Administrative Circulars \(CAR\)](#) [XML](#) [?](#)
- ▶ [Archives](#)

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Study Group

Meeting schedule

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Item	Start Date	End Date	Study Group	Topic	Location	Status
[9]	2008-04-17	2008-04-18	SG 4	Satellite services	Switzerland [Geneva]	Confirmed
[10]	2008-05-13	2008-05-19	WP 6D	Broadcasting delivery, excluding the RF system and spectrum aspects of the BSS	Switzerland [Geneva]	Confirmed
[11]	2008-05-15	2008-05-21	WP 6X	Access to broadcasting services, including converged services, rich-media content, interactivity and service requirements	Switzerland [Geneva]	Confirmed
[12]	2008-05-19	2008-05-23	WP 6G	Generation of broadcasting services, including technologies for content creation, production and quality control	Switzerland [Geneva]	Confirmed
[13]	2008-05-26	2008-05-27	SG 6	Broadcasting service	Switzerland [Geneva]	Confirmed
[14]	2008-05-28	2008-06-03	JTG 5-6	Studies on the use of the band 790-862 MHz by mobile applications and by primary services	Switzerland [Geneva]	Confirmed
[15]	2008-06-05	2008-06-13	WP 3J	Propagation fundamentals	United States [Boulder, Colorado]	Confirmed
[16]	2008-06-05	2008-06-13	WP 3M	Point-to-point and Earth-space propagation	United States [Boulder, Colorado]	Confirmed
[17]	2008-06-05	2008-06-09	WP 3L	Ionospheric propagation and radio noise	United States [Boulder, Colorado]	Confirmed
[18]	2008-06-06	2008-06-13	WP 3K	Point-to-area propagation	United States [Boulder, Colorado]	Confirmed
[19]	2008-06-18	2008-06-24	WP 1A	Spectrum engineering techniques	Switzerland [Geneva]	Confirmed
[20]	2008-06-18	2008-06-24	WP 1B	Spectrum management methodologies	Switzerland [Geneva]	Confirmed
[21]	2008-06-18	2008-06-24	WP 1C	Spectrum monitoring	Switzerland [Geneva]	Confirmed
[22]	2008-06-23	2008-06-27	RRB-08.2	Radio Regulations Board	Switzerland [Geneva]	Proposed
[23]	2008-06-24	2008-07-01	WP 5D	IMT Systems	Outside Geneva	Proposed
[24]	2008-06-26	2008-06-27	SG 1	Spectrum management	Switzerland [Geneva]	Confirmed

Study Group

Sample web page

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Radiocommunication Sector (ITU-R) - Study Group 1 (SG 1) - Spectrum management - Windows Internet Explorer

http://www.itu.int/ITU-R/index.asp?category=study-groups&mlink=rsg1&lang=en

Radiocommunication Sector (ITU-R) - Study Group 1 (...)

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Spectrum management principles and techniques, general principles of sharing, spectrum monitoring, long-term strategies for spectrum utilization, economic approaches to national spectrum management, a...
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Next SG-1 Meeting

- ▶ [26–27/06/08](#)
- ▶ Place : **Switzerland**
[Geneva]

Scope

Spectrum management principles and techniques, general principles of sharing, **spectrum monitoring**, long-term strategies for spectrum utilization, **economic approaches to national spectrum management**, automated techniques and assistance to developing countries in **cooperation with the Telecommunication Development Sector.**

Mandate

- UWB, SRD, compatibility with active and passive services and RAS,
 - Measurements of Radio noise, monitoring receivers/stations, DF ...
 - International spectrum regulatory framework
 - National spectrum management aspects (regulatory, economic, strategic, planning, ..
- Next Working Party Meetings - Place : Switzerland [Geneva]**

WP1A - Spectrum engineering techniques

▶ [18–24/06/08](#)

WP1B - Methodologies and economic strategies

▶ [18–24/06/08](#)

WP1C - Spectrum monitoring

▶ [18–24/06/08](#)

Radiowave propagation

Next SG-3 Meeting

- ▶ [22–23/09/08](#)
- ▶ Place : **Switzerland**
[Geneva]

Scope

- Propagation in ionized and non-ionized media
- Development of prediction methods

Mandate

- Characteristics and mapping of propagation medium
- Propagation prediction methods for
 - terrestrial broadcasting,
 - slant path from satellites
 - mobile and personnel,
 - ionospheric propagation

Next Working Party Meetings - Place : United States [Boulder, Colorado]

- | | |
|--|-------------------------------|
| WP3J - Propagation fundamentals | ▶ 05–13/06/08 |
| WP3K - Point-to-area propagation | ▶ 06–13/06/08 |
| WP3L - Ionospheric propagation and radio noise | ▶ 05–09/06/08 |
| WP3M - Point-to-point and Earth-space propagation | ▶ 05–13/06/08 |

Study Group 4

Satellite Services

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Next SG-4 Meeting

- ▶ [16–17/10/08](#)
- ▶ Place : **Switzerland**
[Geneva]

Scope

Systems and networks for **Fixed, Broadcasting, Mobile and Radio-Determination Satellite Services**

Mandate

- All technical and sharing issues related to non-plan space services and Appendices 30, 30A, 30B of the RR
- HEO, HIO (characteristics and interference calc. methods)
- HDFSS (definition and characteristics)
- IP, Global broadband Internet access via Satellite

Next Working Party Meetings - Place : Switzerland [Geneva]

- WP4A** - Efficient orbit/spectrum utilization for FSS and BSS ▶ [01–10/10/08](#)
- WP4B** - Systems, air interfaces, performance and availability objectives for FSS, BSS and MSS, including IP-based applications and satellite news gathering ▶ [08–15/10/08](#)
- WP4C** - Efficient orbit/spectrum utilization for MSS and RDSS ▶ [13–22/10/08](#)

Study Group 5
Terrestrial Services

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Next SG-5 Meeting

- ▶ [10–11/11/08](#)
- ▶ Place : **Switzerland**
[Geneva]

Scope

Systems and networks for **Fixed, Mobile, Radio-determination, Amateur and Amateur-satellite** services.

Mandate

- IMT-2000, IMT-Advanced, maritime and aeronautical mobile services
- Fixed, mobile, portable and nomadic communications, including Broadband Wireless Access (BWA), RLANs, HAPS
- Adaptive systems at HF
- Software defined and cognitive radio systems (technical aspects)

Next Working Party Meetings – **Interim Structure**

WP5A - Land mobile service excluding IMT; amateur and amateur-satellite service

WP5B - Maritime mobile service including Global Maritime Distress and Safety System (GMDSS); aeronautical mobile service and radiodetermination service

WP5C - Fixed wireless systems; HF systems in the Fixed and Land Mobile Services

WP 5A, 5B, 5C

▶ [27/10–07/11/08](#) - Place : **Switzerland** [Geneva]

WP5D - IMT Systems

▶ [24/06–01/07/08](#) - Place : **Dubai** [UAE]

Study Group 6
Broadcasting Service

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Next SG-5 Meeting

Scope

- ▶ [26–27/05/08](#)
- ▶ Place : **Switzerland**
[Geneva]

Programme production, Programme assembly, Delivery, Reception quality (incl. vision, sound, multimedia, data, etc.)

Mandate

- Protection criteria for digital TV and sound systems (RRC-06)
- Spectrum issues at HF
- Multimedia and data broadcasting for mobile reception
- Large Screen Digital Imagery (LSDI)
- Recording formats

Next Working Party Meetings - Place : Switzerland [Geneva] – Interim Structure

WP6D - Broadcasting delivery, excluding the RF system and spectrum aspects of the BSS

▶ [13–19/05/08](#)

WP6G - Generation of broadcasting services, including technologies for content signal creation, production and quality control

▶ [19–23/05/08](#)

WP6X - Access to broadcasting services, including converged services, multimedia, interactivity and service requirements

▶ [15–21/05/08](#)

Study Group 7

Science Services

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Next SG-5 Meeting

- ▶ 06 and 14/10/08
- ▶ Place : **Switzerland**
[Geneva]

Scope

- Systems for space operation, space research, Earth exploration and meteorology
- Systems for remote sensors (active/passive) on both ground and space-based platforms
- Radio and radar astronomy
- Standard frequency and time signals

Mandate

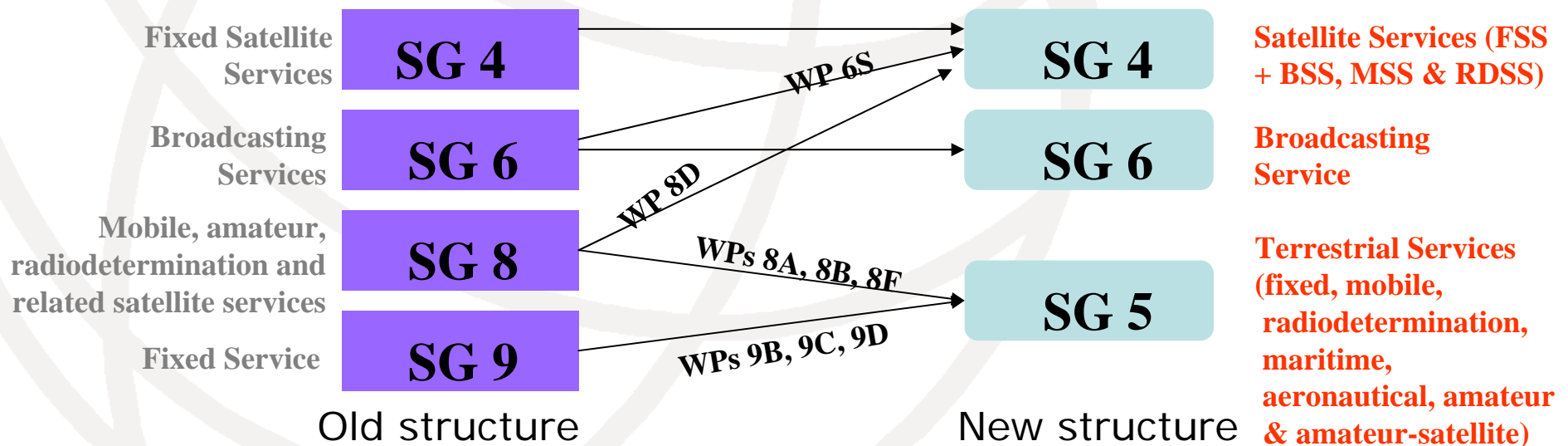
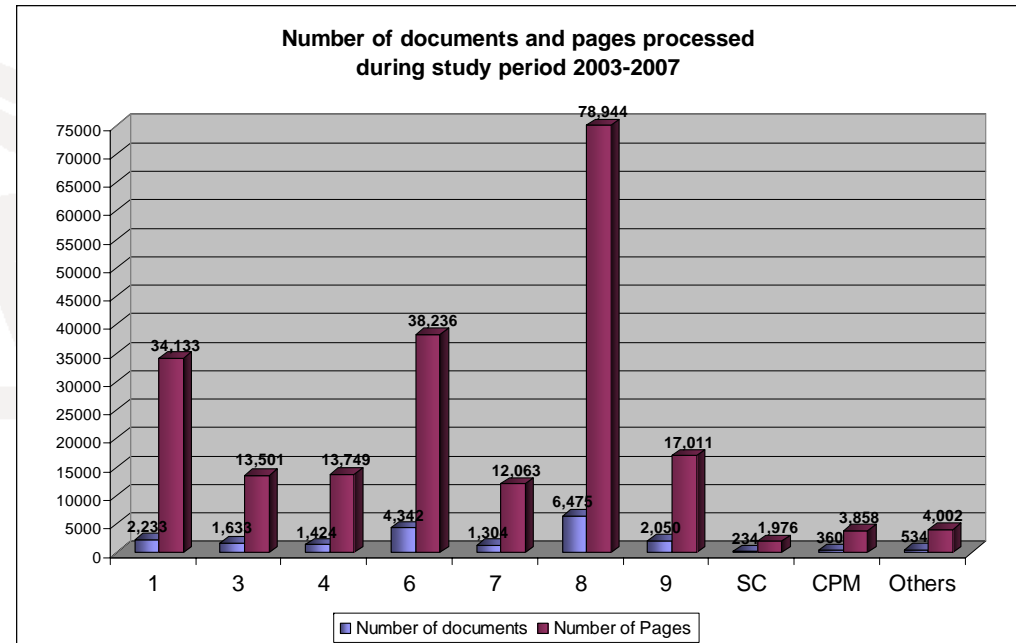
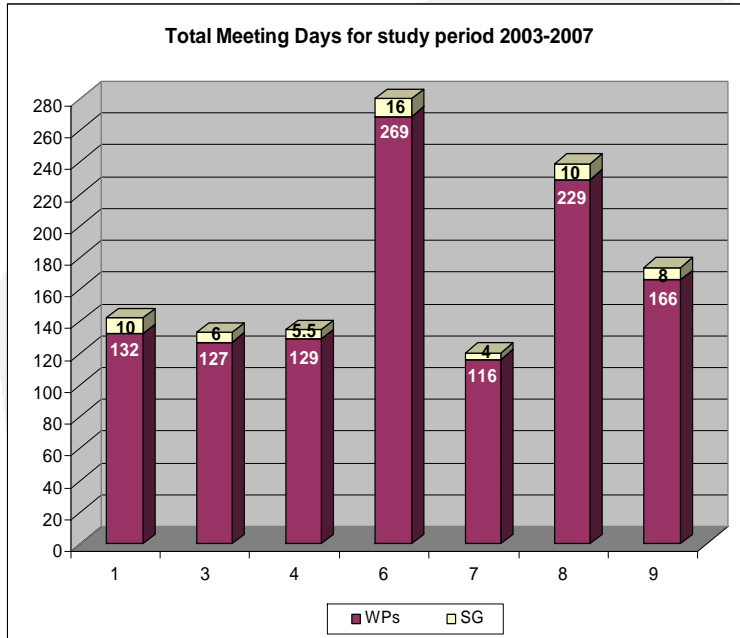
- EESS including meteorological satellite service for disaster prediction and detection
- Deep space research (e.g. Mars)
- Future of leap second
- Protection of the Radio astronomy service from other services

Next Working Party Meetings - Place : Switzerland [Geneva]

- | | |
|---|----------------------|
| WP7A - Time signals & frequency standard emissions | ▶ <u>07-13/10/08</u> |
| WP7B - Space radiocommunication applications | ▶ <u>07-13/10/08</u> |
| WP7C - Remote sensing systems | ▶ <u>07-13/10/08</u> |
| WP7D - Radio astronomy | ▶ <u>07-13/10/08</u> |

ITU-R Study Group meeting statistics

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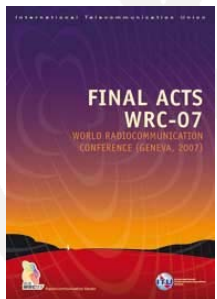
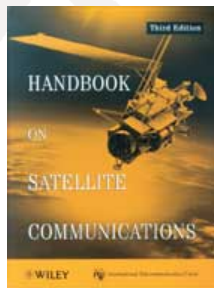
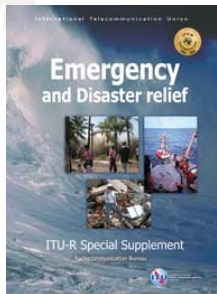
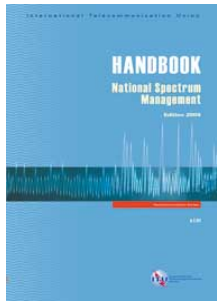
Space Services

- ✓ *Coordination and recording* procedures for space systems and earth stations: capture, processing and publication of data and examination of frequency assignment notices submitted by administrations for inclusion in the formal coordination procedures or recording in the Master International Frequency Register (MIFR).
- ✓ Procedures for space related assignment or allotment *plans*
- ✓ *Assistance* to administrations on all of the above issues

- ✓ **Regulatory and Technical Functions**
 - Broadcasting / Fixed and Mobile / Maritime Mobile / Aeronautical Mobile
- ✓ **Terrestrial Plans**
 - AP25, AP26, AP27, ST61, GE75, RJ81, GE84, GE85M, GE85N, RJ88, GE89, GE06
- ✓ **HF Broadcasting (Art.12)**
- ✓ **Administrative and Operational Procedures**
 - International means of identification
 - all sign series / maritime identification digits / blocks of selective call sign numbers
 - Service Documents
 - Ship stations / coast stations / radio determination / call signs / MARS, etc
- ✓ **Harmful interference & monitoring programs**

ITU-R Publications

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