# International Telecommunication Union

## *Structure & Study Groups*

ITU Centres of Excellence Network for Asia and the Pacific
State Radio Monitoring Center - China
Training on
MONITORING RF SPECTRUM IN MODERN WIRELESS ERA
Kunming, Yunnan Province, China (Peoples Republic of)
16 – 20 April 2018

## Specialized Agencies of the United Nations

UNESCO

WHO

ILO

UPU

ICAO

WMO

IMO

IAEA

WB

UNWTO

FAO

IFAD

UNIDO

WIPO

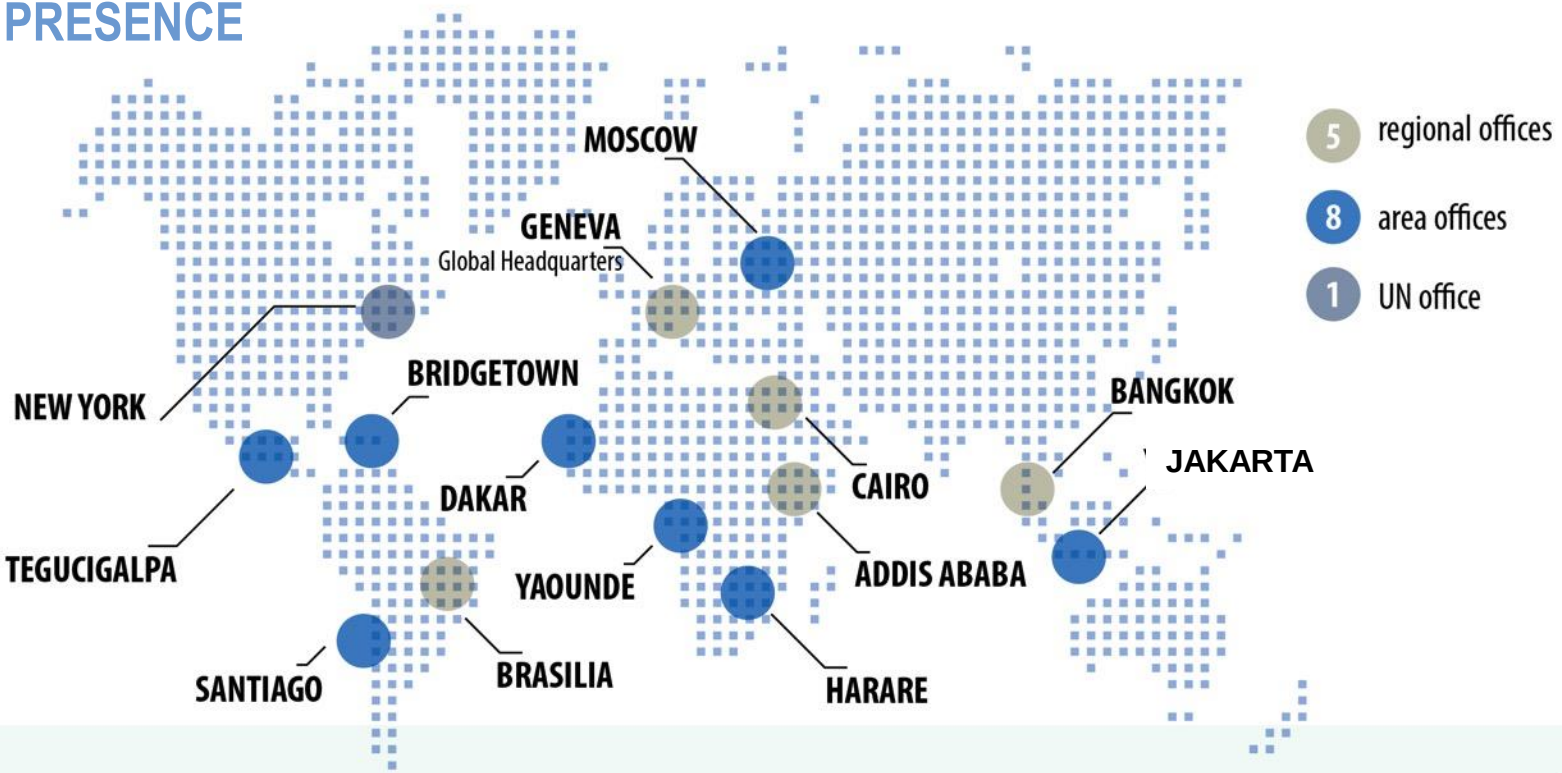
WFP

IMF

***Specialized UN agency with focus on Telecommunication / ICTs***

*Where are we?*

## PRESENCE

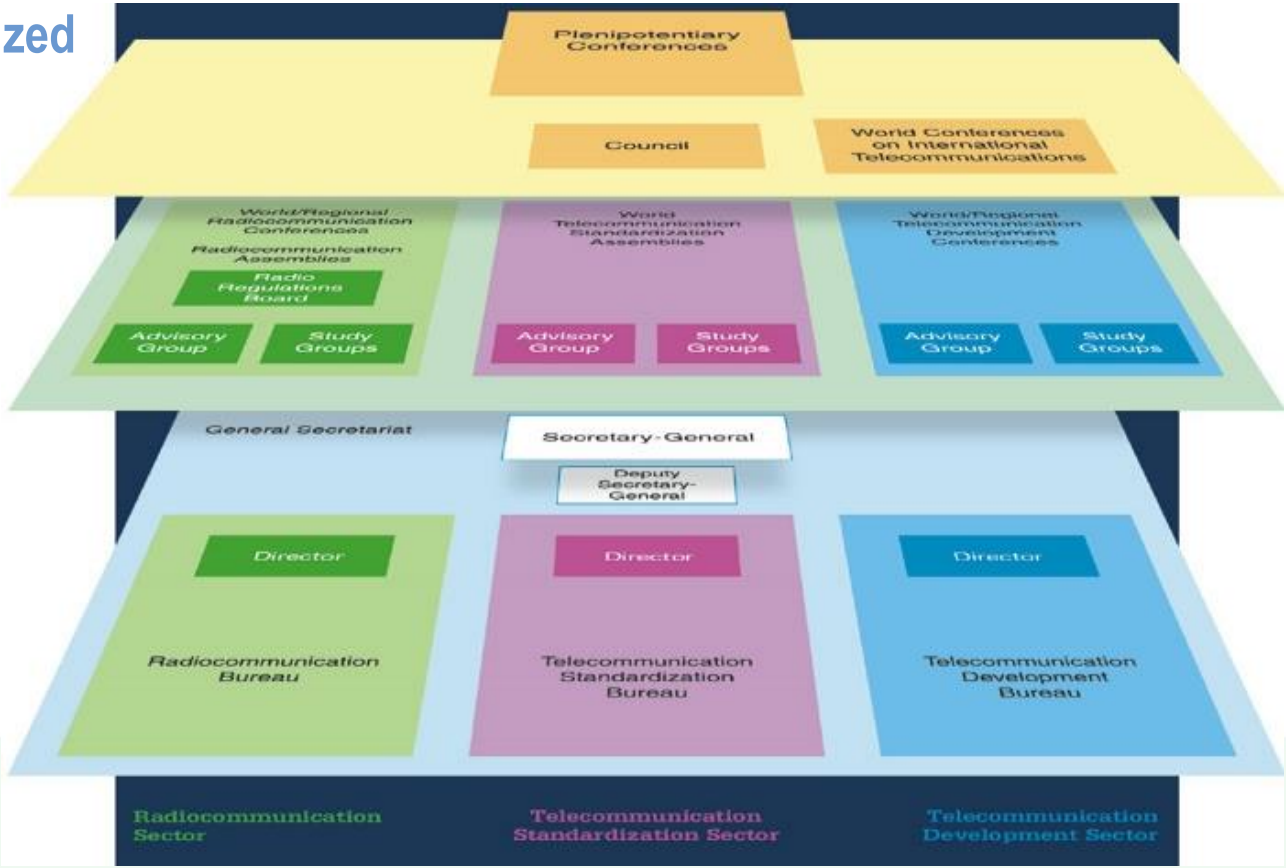


| *Meet us*

# How we work

## How are we organized

Each sector has separate mandate, but all work cohesively towards connecting the world



*Meet us*

# WHO ARE WE?

## *Our numbers*

**193**
MEMBER STATES

**700**
PRIVATE SECTOR ORGANIZATIONS

**70**
ACADEMIA MEMBERS

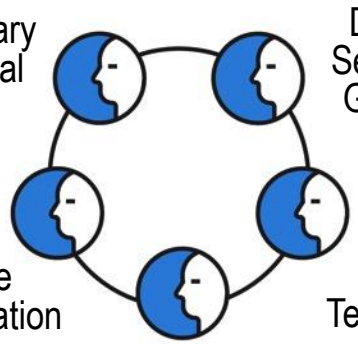
# WHO ARE WE?

***ITU Elections :*** *during Highest Governance Forum i.e. Plenipotentiary conference*

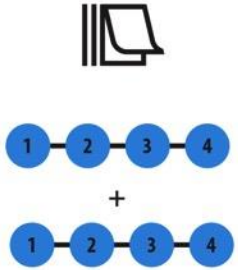
*ITU Officials*

**5**

ELECTED OFFICIALS




**DURATION**




A maximum of two four-year terms in any elected post

*Meet us*

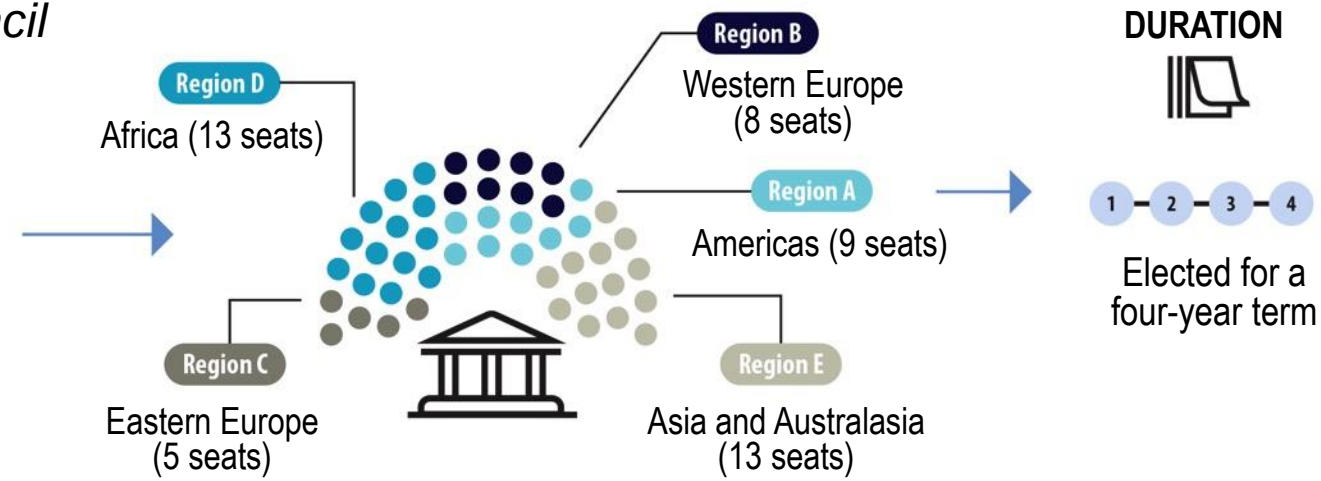
## But what about the time between plenipotentiary conferences?

***ITU Elections :*** *during highest Governance Forum i.e Plenipotentiary conference*

*ITU Council*

**48**

MEMBERS



## Other Elections during Plenipotentiary

***ITU Elections :*** *during Highest Governance Forum i.e Plenipotentiary conference*

*Radio Regulations Board (RRB)*

**12**
MEMBERS

- Region A: 2
- Region B: 2
- Region C: 2
- Region D: 3
- Region E: 3

**DURATION**

1 2 3 4
+
1 2 3 4

A maximum of two four-year terms in any elected post

http://www.itu.int/en/plenipotentiary/2014/Pages/default.aspx

*About us*

## WHAT WE DO

**‘Committed to Connecting the World’**

**Coordinating** radio spectrum and **assigning** orbital slots for satellites

**Bridging** the digital divide

**Establishing** global standards

*Meet us*

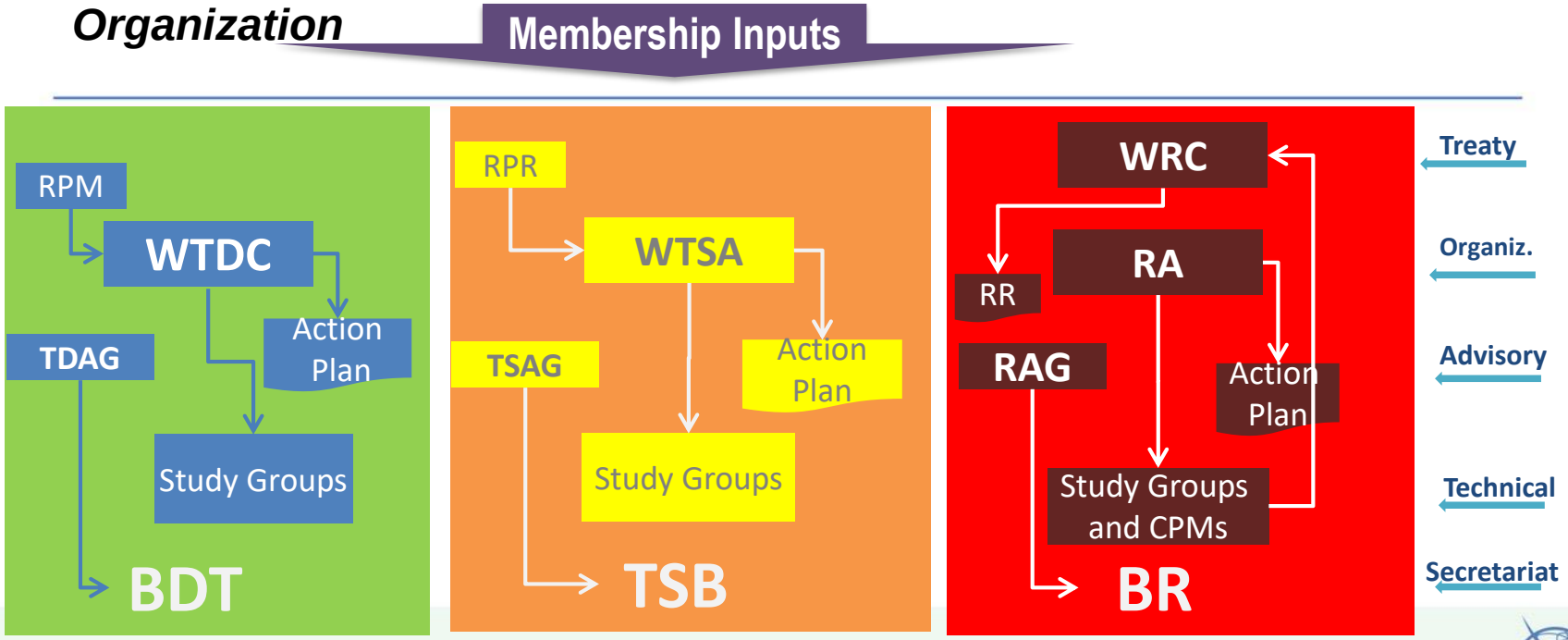
# WHO ARE WE?

## *Organization*

*Meet us*

# WHO ARE WE?

## *Organization*




| Meet the sectors
ITU-R
/RADIOCOMMUNICATIONS/

*Meet the sectors*

# ITU - R

ITU Radiocommunication Sector (ITU-R) plays a vital role in the global management of the radio-frequency spectrum and satellite orbits - limited natural resources which are increasingly in demand from a large and growing number of services such as fixed, mobile, broadcasting, amateur, space research, emergency telecommunications, meteorology, global positioning systems, environmental monitoring and communication services - that ensure safety of life on land, at sea and in the skies.

**Organization**

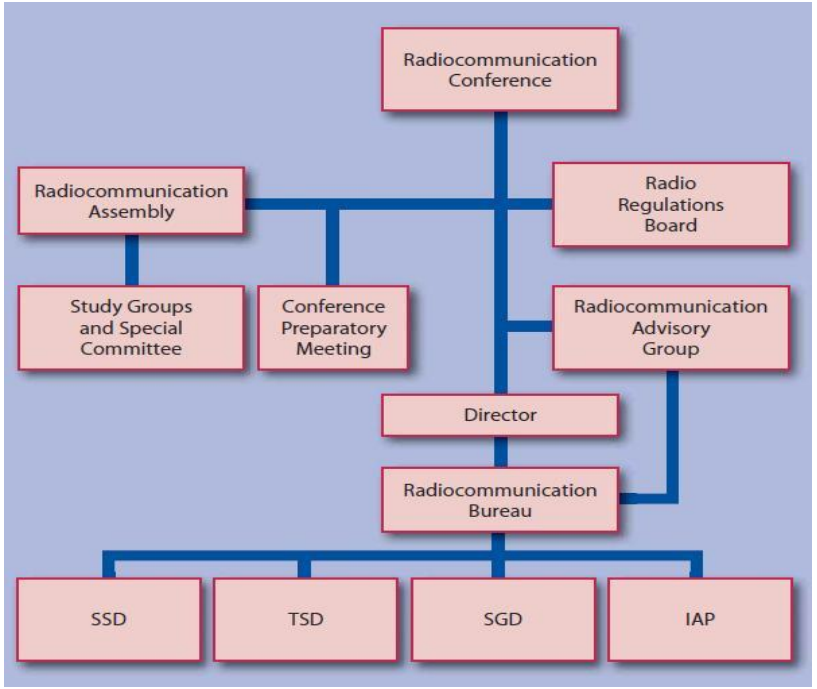
4 Departments

1. Space Services Department (SSD)
2. Terrestrial Services Department (TSD)
3. Study Groups Department (SGD)
4. Informatics, Administration and Publications Department (IAP)

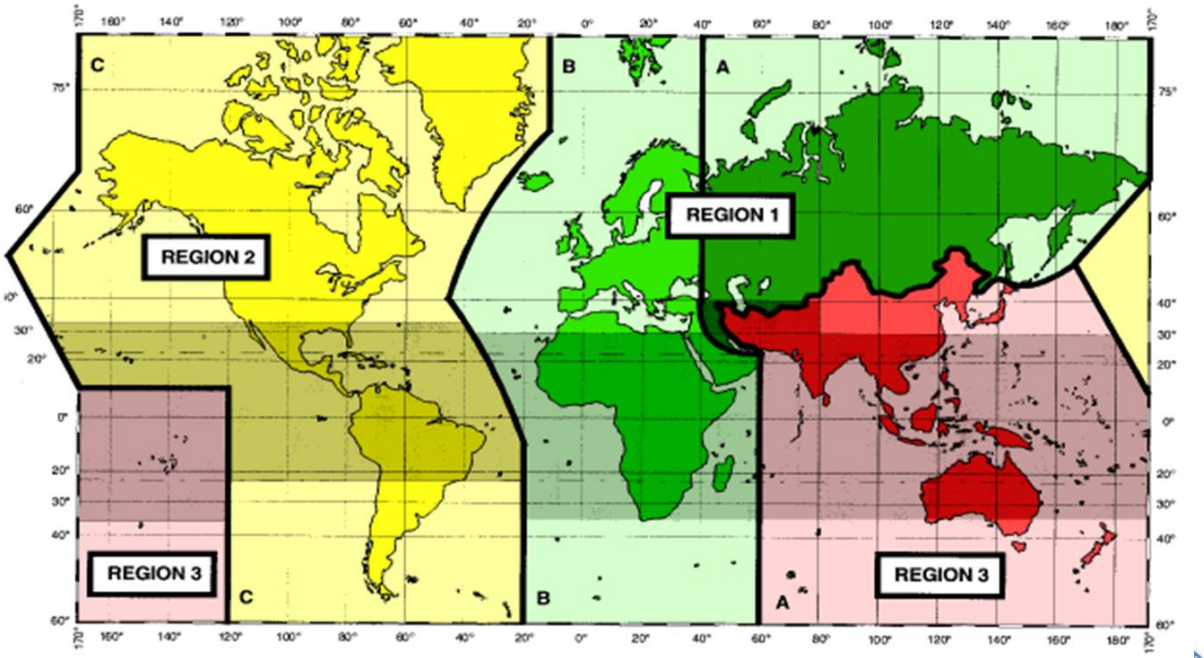
*Meet the sectors*

# ITU - R

## Sector Organization

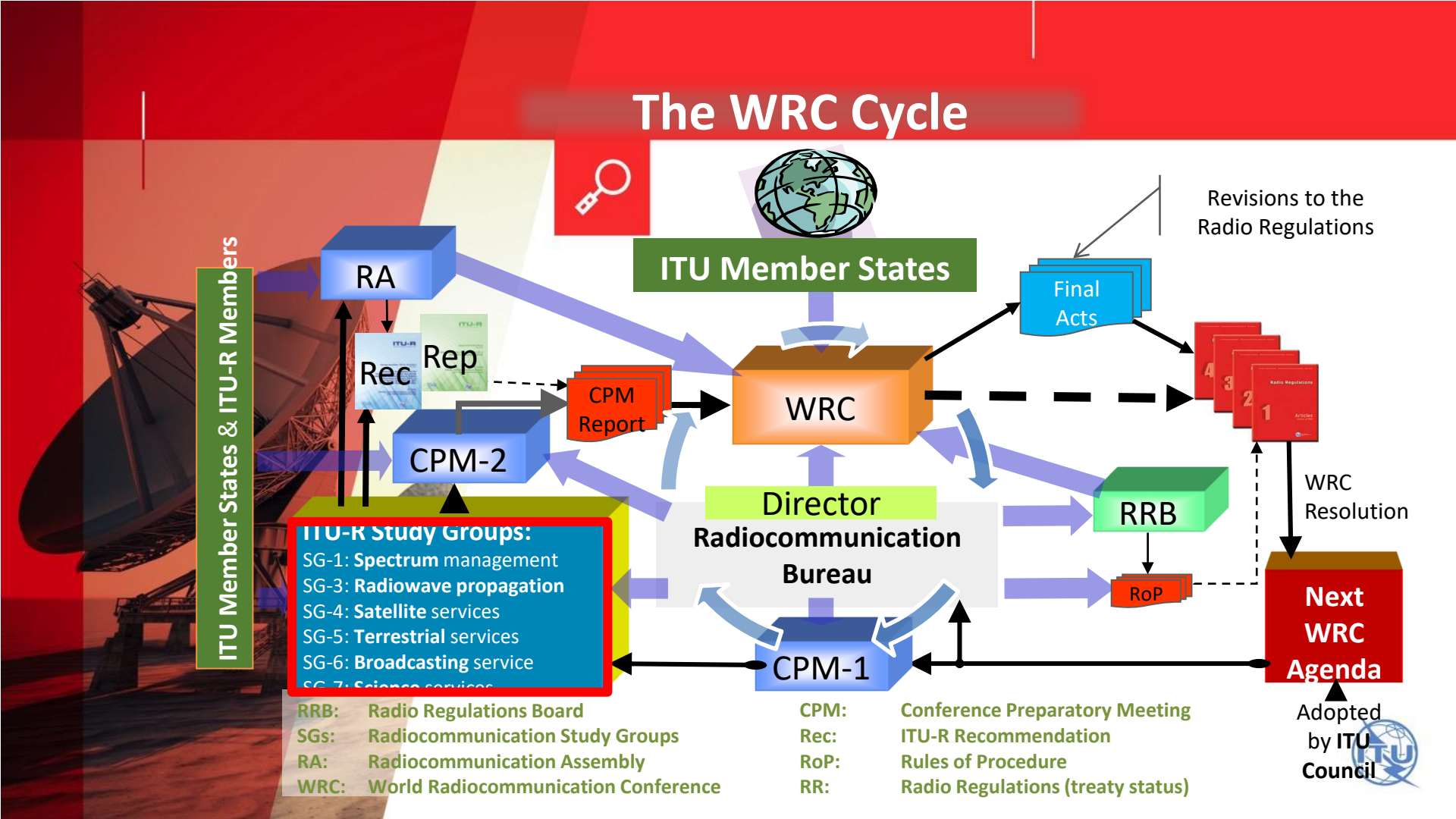


# International Frequency Allocations




**The shaded part represents the Tropical Zones as defined in Nos. 5.16 to 5.20 and 5.21**

# The WRC Cycle




RRB: Radio Regulations Board
SGs: Radiocommunication Study Groups
RA: Radiocommunication Assembly
WRC: World Radiocommunication Conference

CPM: Conference Preparatory Meeting
Rec: ITU-R Recommendation
RoP: Rules of Procedure
RR: Radio Regulations (treaty status)

# ITU-R Study Groups

# Study Group 1 (SG 1)

Spectrum Management

## 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.

## 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

# Study Group 3 (SG 3)

Radiowave Propagation

**Scope:**

Propagation of radio waves in ionized and non-ionized media and the characteristics of radio noise, for the purpose of improving radiocommunication systems.

**Structure**:

- Working Party 3J (WP 3J) - Propagation fundamentals
- Working Party 3K (WP 3K) - Point-to-area propagation
- Working Party 3L (WP 3L) - Ionospheric propagation and radio noise
- Working Party 3M (WP 3M) - Point-to-point and Earth-space propagation

# Study Group 4 (SG 4)

Satellite Services

## Scope:

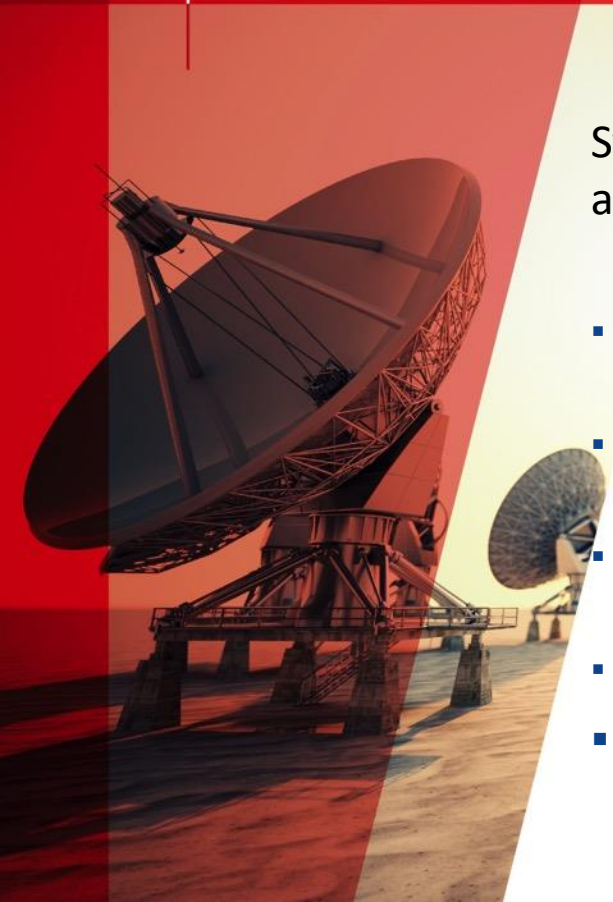
Systems and networks for the fixed-satellite service, mobile-satellite service, broadcasting-satellite service and radiodetermination-satellite service.

## Structure:

- Working Party 4A (WP 4A) - Efficient orbit/spectrum utilization for FSS and BSS
- Working Party 4B (WP 4B) - Systems, air interfaces, performance and availability objectives for FSS, BSS and MSS, including IP-based applications and satellite news gathering
- Working Party 4C (WP 4C) - Efficient orbit/spectrum utilization for MSS and RDSS

# Study Group 5 (SG 5)

Terrestrial Services



## Scope:

Systems and networks for fixed, mobile, radiodetermination, amateur and amateur-satellite services.

## Structure:

- Working Party 5A (WP 5A) - Land mobile service above 30 MHz (excluding IMT); wireless access in the fixed service; amateur and amateur-satellite services
- Working Party 5B (WP 5B) - Maritime mobile service including Global Maritime Distress and Safety System (GMDSS); aeronautical mobile service and radiodetermination service
- Working Party 5C (WP 5C) - Fixed wireless systems; HF and other systems below 30 MHz in the fixed and land mobile services
- Working Party 5D (WP 5D) - IMT Systems
- Task Group 5/1 - WRC-19 Agenda item 1.13

# Study Group 6 (SG 6)

Broadcasting Service

## Scope:

Radiocommunication broadcasting, including vision, sound, multimedia and data services principally intended for delivery to the general public. to delivery nodes, and secondary distribution to consumers.

## Structure

- Working Party 6A (WP 6A) - Terrestrial broadcasting delivery
- Working Party 6B (WP 6B) - Broadcast service assembly and access
- Working Party 6C (WP 6C) - Programme production and quality assessment

# Study Group 7 (SG 7)

Science Services

## Scope:

- Systems for space operation, space research, Earth exploration and meteorology, including the related use of links in the inter satellite service.
- Systems for remote sensing, including passive and active sensing systems, operating on both ground-based and space-based platforms.
- Radio astronomy and radar astronomy.
- Dissemination, reception and coordination of standard-frequency and time-signal services, including the application of satellite techniques, on a worldwide basis.

## Structure:

- Working Party 7A (WP 7A) - Time signals and frequency standard emissions
- Working Party 7B (WP 7B) - Space radiocommunication applications
- Working Party 7C (WP 7C) - Remote sensing systems
- Working Party 7D (WP 7D) - Radio astronomy

# Task Group 5/1

Task Group 5/1 is responsible for the development of draft CPM text under WRC-19 Agenda item 1.13.

In developing sharing studies and draft CPM text, Task Group 5/1 has to consider, the results of appropriate studies from Working Party 5D on the spectrum needs, technical and operational characteristics including protection criteria, and deployment scenarios for the terrestrial component of IMT, as well as propagation models, technical characteristics including protection criteria for existing services allocated in, or adjacent to, the bands identified in resolves to invite ITU-R 2 of Resolution 238 (WRC-15).

Task Group 5/1 is also required to conduct the appropriate sharing and compatibility studies, taking into account the protection of services to which the band is allocated on a primary basis.

**More information at** https://www.itu.int/dms_pub/itu-r/opb/gen/R-GEN-SGB-2016-PDF-E.pdf#page=42&pagemode=none

# ITU-R Study Groups

| Study Group Number | Focus Area | Structure |
|---|---|---|
| SG – 1 | Spectrum Management | ▪ Working Party 1A (WP 1A) - Spectrum engineering techniques<br>▪ Working Party 1B (WP 1B) - Spectrum management methodologies and economic strategies<br>▪ Working Party 1C (WP 1C) - Spectrum monitoring |
| SG – 3 | Radio Wave Propagation | ▪ Working Party 3J (WP 3J) - Propagation fundamentals<br>▪ Working Party 3K (WP 3K) - Point-to-area propagation<br>▪ Working Party 3L (WP 3L) - Ionospheric propagation and radio noise<br>▪ Working Party 3M (WP 3M) - Point-to-point and Earth-space propagation |
| SG – 4 | Satellite Services | ▪ Working Party 4A (WP 4A) - Efficient orbit/spectrum utilization for FSS and BSS<br>▪ Working Party 4B (WP 4B) - Systems, air interfaces, performance and availability objectives for FSS, BSS and MSS, including IP-based applications and satellite news gathering<br>▪ Working Party 4C (WP 4C) - Efficient orbit/spectrum utilization for MSS and RDSS |

# ITU-R Study Groups

| Study Group | Focus Area | Structure |
|---|---|---|
| SG – 5 | Terrestrial Services | ▪ Working Party 5A (WP 5A) - Land mobile service above 30 MHz (excluding IMT); wireless access in the fixed service; amateur and amateur-satellite services<br>▪ Working Party 5B (WP 5B) - Maritime mobile service including Global Maritime Distress and Safety System (GMDSS); aeronautical mobile service and radiodetermination service<br>▪ Working Party 5C (WP 5C) - Fixed wireless systems; HF and other systems below 30 MHz in the fixed and land mobile services<br>▪ Working Party 5D (WP 5D) - IMT Systems<br>▪ Task Group 5/1 - WRC-19 Agenda item 1.13 |
| SG – 6 | Broadcasting Services | ▪ Working Party 6A (WP 6A) - Terrestrial broadcasting delivery<br>▪ Working Party 6B (WP 6B) - Broadcast service assembly and access<br>▪ Working Party 6C (WP 6C) - Programme production and quality assessment |
| SG – 7 | Science Services | ▪ Working Party 7A (WP 7A) - Time signals and frequency standard emissions<br>▪ Working Party 7B (WP 7B) - Space radiocommunication applications<br>▪ Working Party 7C (WP 7C) - Remote sensing systems<br>▪ Working Party 7D (WP 7D) - Radio astronomy |

# Examples of ITU Reports and Recommendations

| Category | Report/Recommendation Details |
|---|---|
| General | • Recommendation ITU-R SM.1050<br>• Recommendation ITU-R SM.1723<br>• Recommendation ITU-R SM.1794<br>• ITU Spectrum Monitoring Handbook, 2011, Chapter 1 |
| Direction finding measurement and location determination | • Recommendation ITU-R SM.854<br>• Recommendation ITU-R SM.1598<br>• ITU Spectrum Monitoring Handbook, 2011, Section 4.7 |
| Spectrum and channel Occupancy measurement | • Recommendation ITU-R SM.1880<br>• Report ITU-R SM.2256<br>• ITU Spectrum Monitoring Handbook, 2011, Section 4.10 |
| Unwanted emissions | • Recommendation ITU-R SM.328<br>• Recommendation ITU-R SM.329<br>• Recommendation ITU-R SM.1752<br>• Recommendation ITU-R SM.1792<br>• ITU Spectrum Monitoring Handbook, 2011, Section 4.12 |
| Measurement on digital broadcasting systems | • Recommendation ITU-R SM.1682<br>• Recommendation ITU-R SM.1792<br>• ITU Spectrum Monitoring Handbook, 2011,Sections 4.11 and 5.2 |
| Mobile monitoring | • Recommendation ITU-R SM.1708<br>• Recommendation ITU-R SM.1723<br>• ITU Spectrum Monitoring Handbook, 2011,Section 2.4.2 |
| Standard data exchange format at monitoring stations | • Recommendation ITU-R SM.1809 |

# Examples of ITU Reports and Recommendations

| Category | Report/Recommendation Details |
|---|---|
| Frequency | • Recommendation ITU-R SM.377<br>• ITU Spectrum Monitoring Handbook, 2011, Section 4.2 |
| Field strength<br>(see also Radio Regulations Art. 21) | • Recommendation ITU-R P.845<br>• Recommendation ITU-R SM.378<br>• Recommendation ITU-R SM.1447<br>• Recommendation ITU-R SM.1708<br>• ITU Spectrum Monitoring Handbook, 2011, Section 4.10 |
| Modulation | • Recommendation ITU-R SM. 1268<br>• ITU Spectrum Monitoring Handbook, 2011, Sections 4.6 and 4.8 |
| Bandwidth | • Recommendation ITU-R SM.443<br>• ITU Spectrum Monitoring Handbook, 2011, Section 4.5 |
| Identification | • Recommendation ITU-R SM.1052<br>• Recommendation ITU-R SM.1600<br>• ITU Spectrum Monitoring Handbook, 2011, Section 4.8 |
| Signal analysis | • ITU Spectrum Monitoring Handbook, 2011, Section 4.8 |
| Measurements related to inspection of radio installations | • Report ITU-R SM.2130 |

# Examples of ITU Reports and Recommendations

| Category | Report/Recommendation Details |
|---|---|
| Selectivity of monitoring receivers | • Recommendation ITU-R SM.1836<br>• Report ITU-R SM.2125 |
| IP3 of monitoring receivers | • Recommendation ITU-R SM.1837<br>• Report ITU-R SM.2125 |
| Noise figure of monitoring receivers | • Recommendation ITU-R SM.1838<br>• Report ITU-R SM.2125 |
| Scanning speed of monitoring receivers | • Recommendation ITU-R SM.1839<br>• Report ITU-R SM.2125 |
| Sensitivity of monitoring receivers | • Recommendation ITU-R SM.1840<br>• Report ITU-R SM.2125 |
| Other parameters | • Report ITU-R SM.2125 |
| Selectivity of monitoring receivers | • Recommendation ITU-R SM.1836<br>• Report ITU-R SM.2125 |


| Meet the sectors
ITU-T
/STANDARDIZATION/

*Meet the sectors*

## ITU - T

## KEY ROLE

Crucial role in **defining operation and interoperability of technologies** that underpin global communications network

**200 - 300** new global standards approved every year, with over **4,000** in use today

*Meet the sectors*

ITU - T

## SOME MAJOR ACHIEVEMENTS

### PKI

Public-key infrastructure, central to e-commerce

### H.264

The **Emmy award** winning **video codec** and its successor, H.265

*Meet the sectors*

ITU - T

# WORLD TELECOMMUNICATION STANDARDIZATION ASSEMBLY (WTSA)

Draws up the ITU-T **Action Plan** (actions, their associated responsibilities, necessary collaborations, reporting mechanisms and implementation status.

Sets ITU-T Study Group top **priorities and questions**

*Meet the sectors*

ITU - T

## Study Groups (Period 2017 - 2020)

Standardization work is carried out by the technical Study Groups (SGs) in which representatives of the ITU-T membership develop Recommendations (standards) for the various fields of international telecommunications.

1. SG2 - Operational aspects
2. SG3 - Economic and policy issues
3. SG5 - Environment and cellular economy
4. SG9 - Broadband cable and TV
5. SG11 - Protocols and test specifications
6. SG12 - Performance, QoS and QoE
7. SG13 - Future networks (& cloud)
8. SG15 - Transport, Access and Home
9. SG16 - Multimedia
10. SG17 - Security
11. SG20 - IoT and applications, smart cities

*Meet the sectors*

ITU - T

## Example

**Focus Group on Machine Learning for Future Networks including 5G**

The ITU-T Focus Group on Machine Learning for Future Networks including 5G was established by ITU-T Study Group 13 at its meeting in Geneva, 6-17 November 2017.

The Focus Group will draft technical reports and specifications for machine learning (ML) for future networks, including interfaces, network architectures, protocols, algorithms and data formats.

*Meet the sectors*

## ITU - T

## Example: New Standards on

- **ITU Y.3101** "*Requirements of the IMT-2020 network" describes the features of 5G networks necessary to ensure efficient 5G deployment and high network flexibility*.

- **ITU Y.3150** "*High-level technical characteristics of network softwarization for IMT-2020*"
  - describes the value of slicing in both horizontal and vertical, application-specific environments.

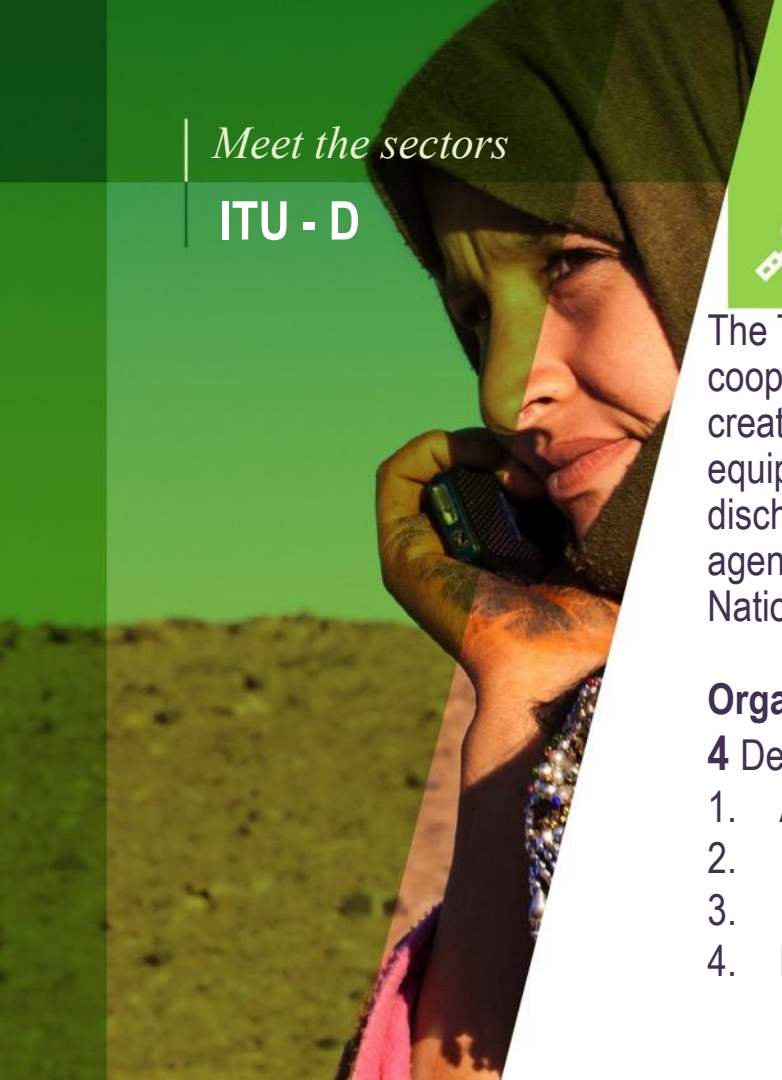
- **ITU Y.3130 "Requirements of IMT-2020 fixed-mobile convergence"**
  - calls for unified user identity, unified charging, service continuity, guaranteed support for high quality of service, control plane convergence and smart management of user data.

*| Meet the sectors*

# ITU-D
## /DEVELOPMENT/

*Meet the sectors*

# ITU - D



The Telecommunication Development Sector (ITU-D) fosters international cooperation and solidarity in the delivery of technical assistance and in the creation, development and improvement of telecommunication and ICT equipment and networks in developing countries. ITU-D is required to discharge the Union's **dual responsibility** as a United Nations specialized agency and executing agency for implementing projects under the United Nations development system or other funding arrangements,

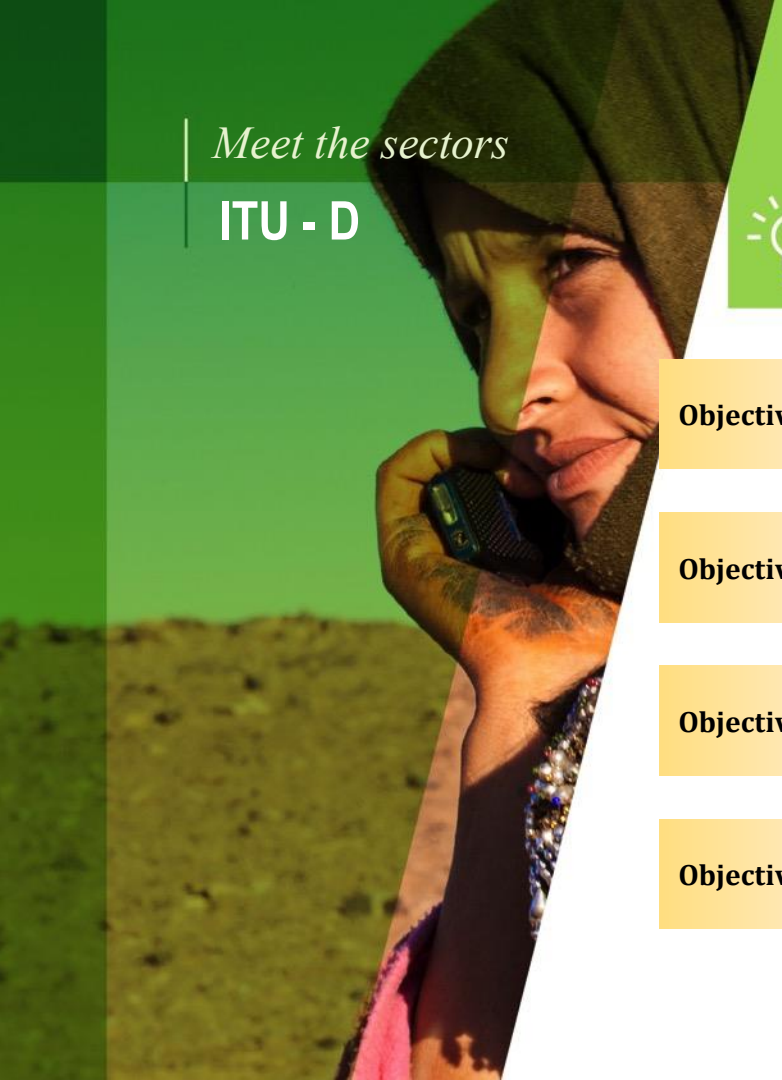
## Organization

**4** Departments (Geneva), **5** Regional Offices and **8** Area Offices:

1. Administration and Operations Coordination Department;
2. Infrastructure, Enabling Environment & E-applications Department;
3. Innovation and Partnership Department; (includes SG)
4. Project Support and Knowledge Management Department

*Meet the sectors*

## ITU - D



## How its Done: Global Objectives (2018-2021)

| | |
|---|---|
| **Objective #1** | **Coordination**: Foster international cooperation and agreement on telecommunication/ICT development issues |
| **Objective #2** | **Modern and secure telecommunication/ICT Infrastructure**: Foster the development of infrastructure and services, including building confidence and security in the use of telecommunications/ICTs |
| **Objective #3** | **Enabling environment:** Foster an enabling policy, and regulatory environment conducive to sustainable telecommunication/ICT development |
| **Objective #4** | **Inclusive digital society:** Foster the development and use of telecommunications /ICTs and applications to empower people and societies for sustainable development |

*16 related Outcomes*

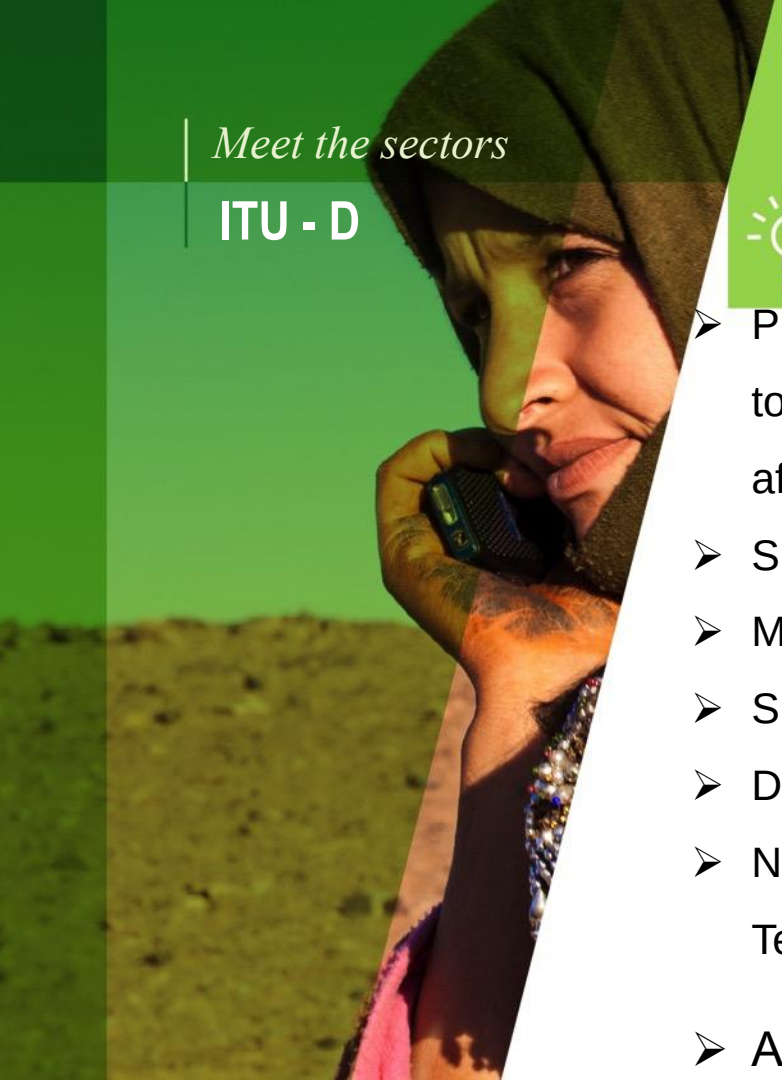
# **ITU:** Asia- Pacific (ASP)

**Set by Members of ITU from ASP total 38 including**

| | |
|---|---|
| **ASP1** | Addressing special needs of least developed countries, small island developing states, including Pacific island countries, and landlocked developing countries |
| **ASP2** | Harnessing ICTs to support the digital economy and an inclusive digital society |
| **ASP3** | Fostering development of infrastructure to enhance digital connectivity |
| **ASP4** | Enabling policy and regulatory environments |
| **ASP5** | Contributing to secure and resilient environment |

*Meet the sectors*

**ITU - D**

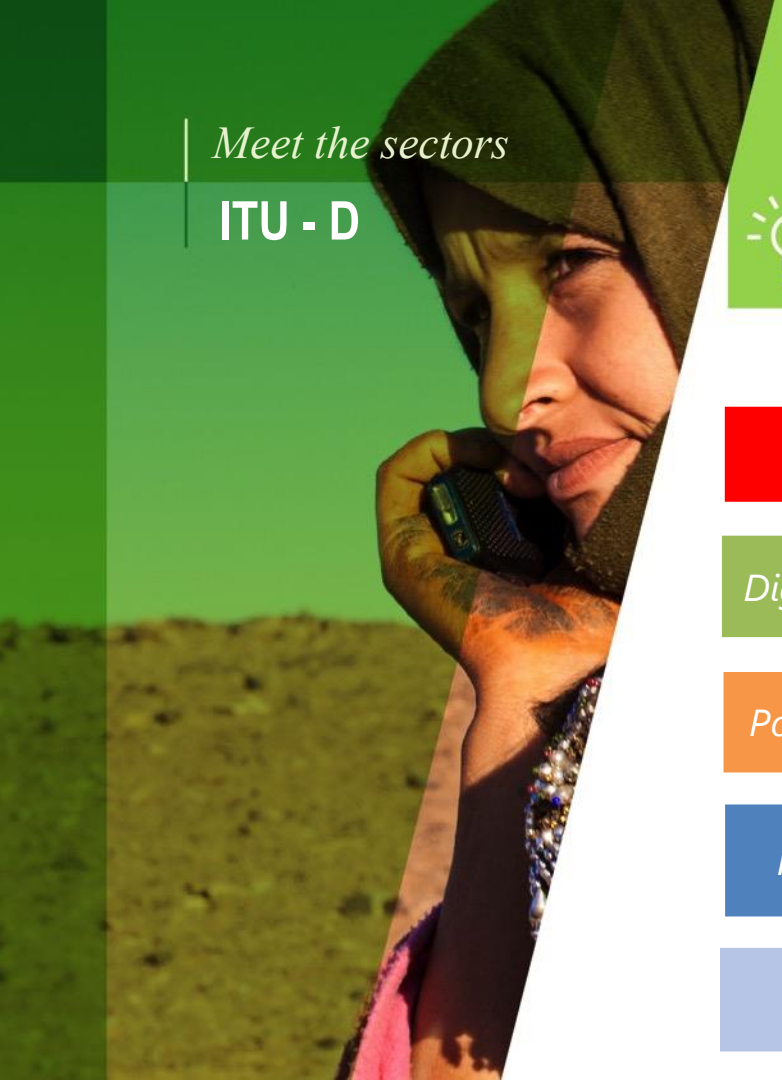


## SOME MAJOR ACHIEVEMENTS

- Providing vital emergency Telecommunications to assist rescue and relief operations in the immediate aftermath of a disaster
- SMS4DC
- Masterplans of Spectrum Management
- SMTP
- Digital Inclusion
- National roadmaps for transition from Analog to Digital Terrestrial TV
- And many others……

*Meet the sectors*

## ITU - D



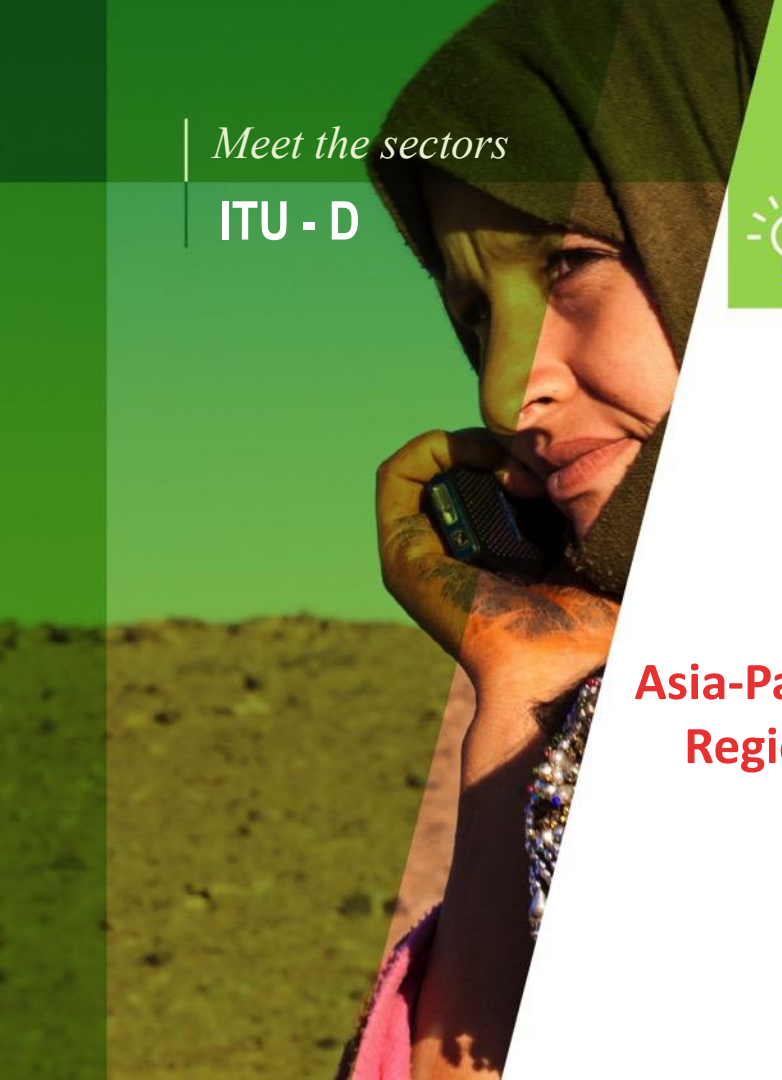
## SOME MAJOR ACHIEVEMENTS
## ITU Projects and Partnerships in Asia-Pacific

- *Spectrum Management*
- *Digital Broadcasting*
- *Policy & Regulation*
- *ICT Applications*
- *Other activities*

Human Capacity Building

*Meet the sectors*

# ITU - D



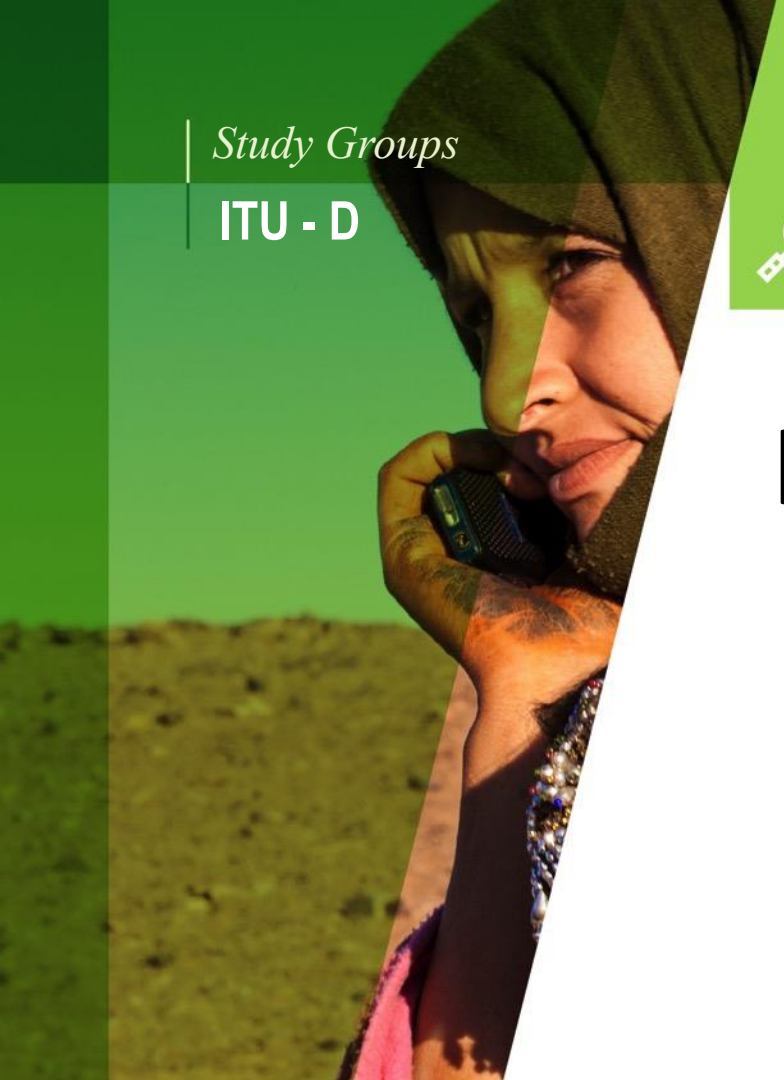
## SOME MAJOR ACHIEVEMENTS:

### 36 ITU Centres of Excellence

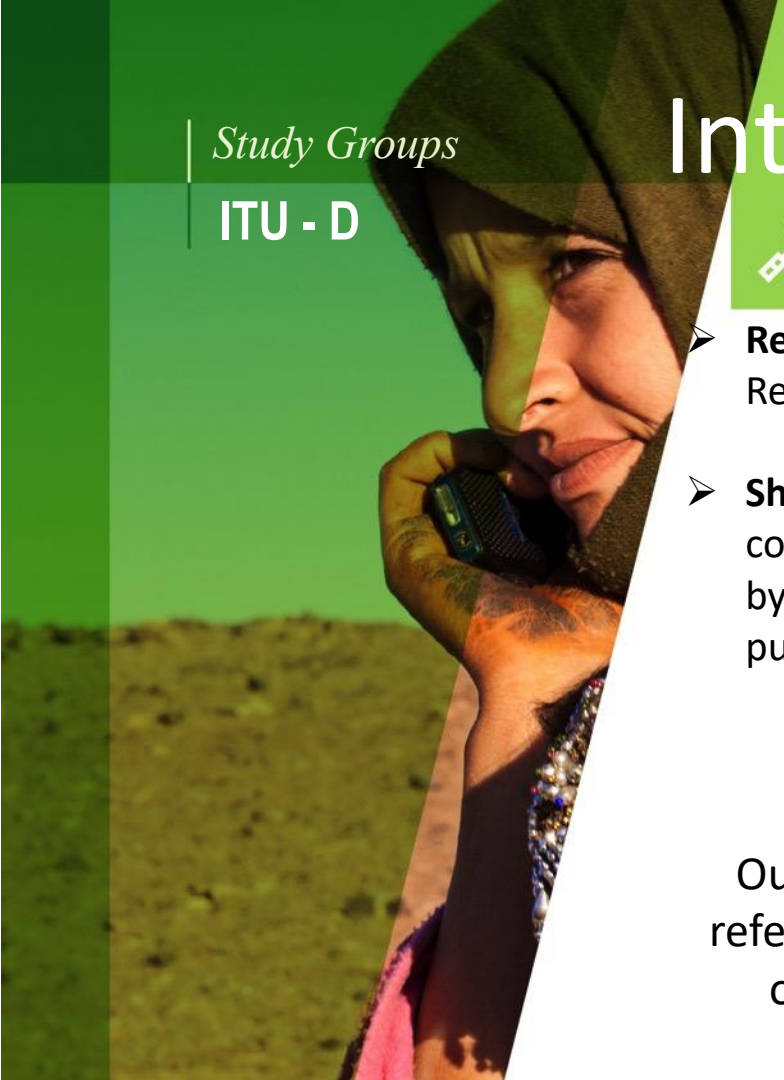
Africa, Americas, Arab, Asia-Pacific, CIS and Europe Region

**Asia-Pacific Region**

- **TOT Academy – Ministry of ICT (Thailand)**
  Policy & Regulation & Broadband Access
- **National Information Society Agency (Rep. of Korea)**
  Policy & Regulation
- **IMPACT (Malaysia)**
  Cybersecurity
- **State Radio Monitoring Centre (China)**
  Spectrum Management
- **China Academy of Telecommunications Research (MIIT, China)**
  Conformance and Interoperability
- **Advanced Level Telecom Training Centre (India)**
  Broadband Access



# ITU-D Study Groups



Study Groups

ITU - D

# Introduction

- **Responsible for** developing Reports, Guidelines, and Recommendations based on input received from the membership.

- **Shared knowledge base** Information is gathered through surveys, contributions and case studies and is made available for easy access by the membership using content management and web publication tools.

## IMPACT

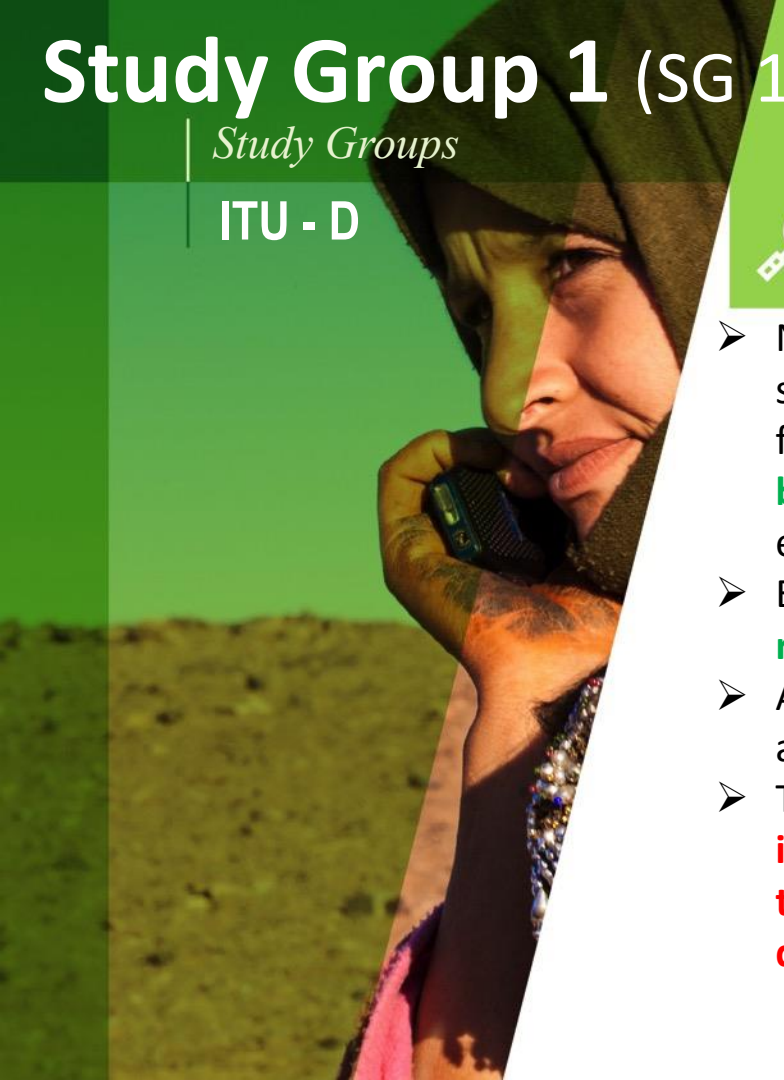
Outputs agreed on in the ITU-D Study Groups, and related reference material, are used as input for the implementation of policies, strategies, projects and special initiatives in Member States.

# Study Group 1 (SG 1)

*Study Groups*

ITU - D

Enabling environment for the development of telecommunications/ICTs



## Scope

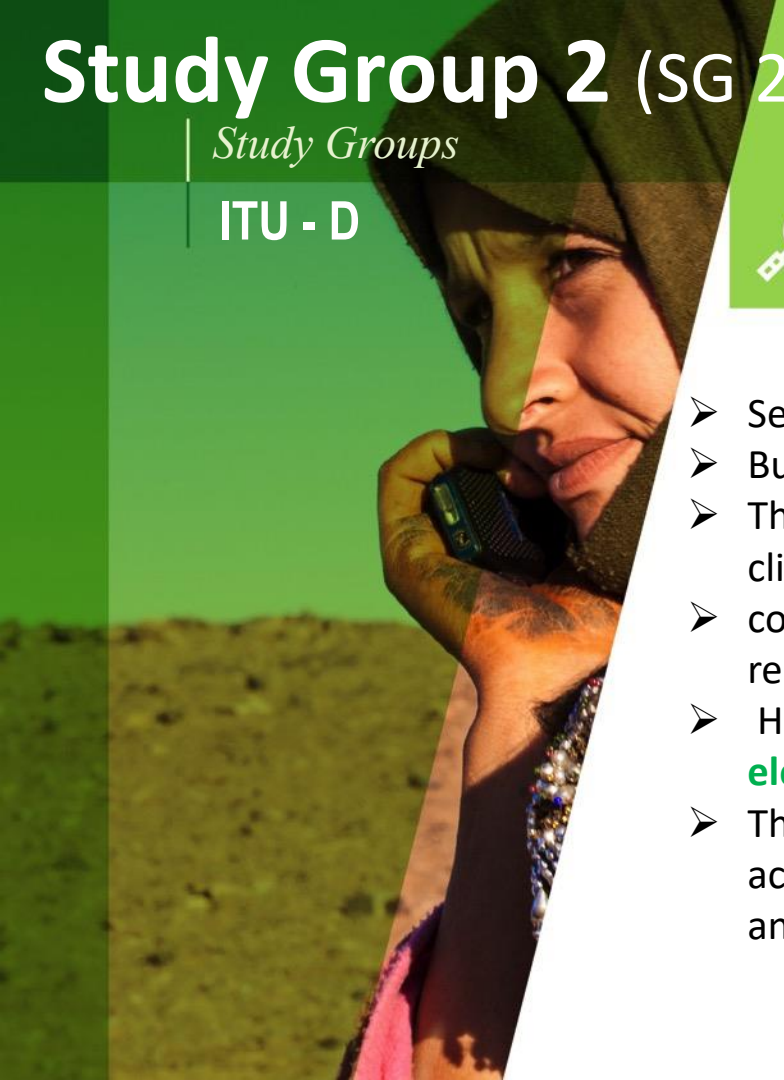
- National telecommunication/ICT policy, regulatory, technical and strategy development which best enables countries to benefit from the impetus of telecommunications/ICTs, including **broadband, cloud computing and consumer protection**, as an engine for sustainable growth.
- Economic policies and methods of **determining costs of services related to national telecommunications/ICTs**.
- Access to telecommunications/ICTs for rural and remote areas and by persons with disabilities and specific needs.
- The needs of developing countries in **spectrum management, including the ongoing transition from analogue to digital terrestrial television broadcasting and the use of the digital dividend, in addition to any future digital switchover**.

# Study Group 2 (SG 2)

*Study Groups*

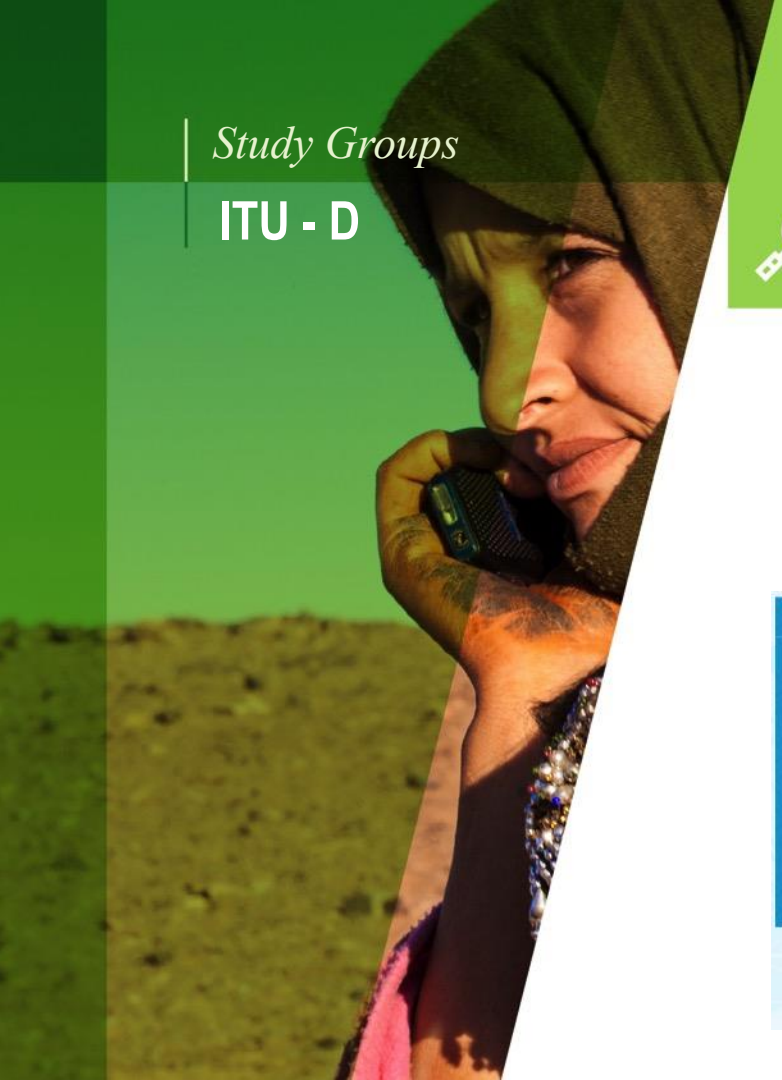
ITU - D

ICT applications, cybersecurity, emergency telecommunications & climate change adaptation



## Scope

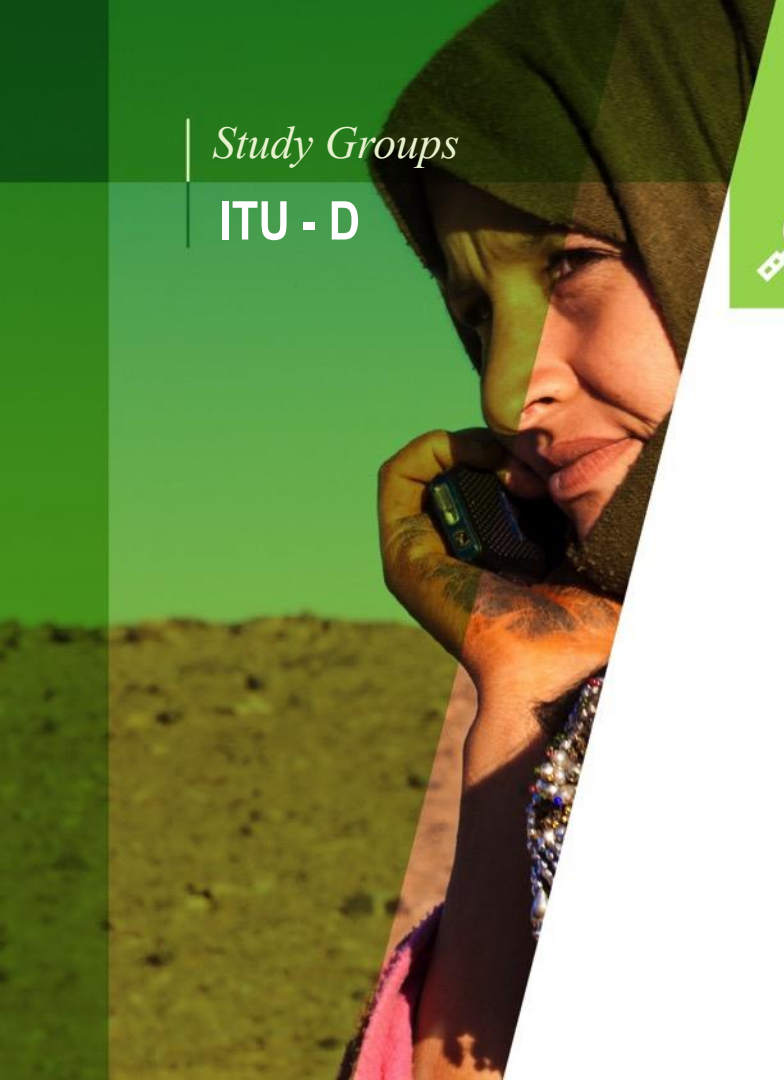
- Services and applications supported by telecommunications/ICTs.
- Building confidence and security in the use of ICTs.
- The use of telecommunications/ICTs in mitigating the impact of climate change on developing
- countries, and for natural disaster preparedness, mitigation and relief, as well as **conformance and interoperability** testing.
- Human exposure **to electromagnetic fields and safe disposal of electronic waste.**
- The implementation of telecommunications/ICTs, taking into account the results of the studies carried out by ITU-T and ITU-R, and the priorities of developing countries.



# SOME MAJOR ACHIEVEMENTS

## *Study period 2010 – 2014*

***19 final reports and guidelines available for download in all 6 official languages at:***
http://www.itu.int/pub/D-STG



Study Groups

ITU - D

# ITU-D Study Groups

*(for Period 2018 to 2021)*

# Study Group 1 (SG 1)

*Questions Under Study*

Enabling environment for the development of telecommunications/ICTs

| | |
|---|---|
| Question 1/1 | Strategies and policies for the deployment of **broadband** in developing countries |
| Question 2/1 | Strategies, policies, regulations and methods of migration and adoption of digital broadcasting and implementation of new services |
| Question 3/1 | Emerging technologies, including cloud computing: m-services, and **OTTs**: Challenges and opportunities, economic and policy impact for developing countries |
| Question 4/1 | Economic policies and methods of determining the **costs** of services related to national telecommunication/ICT networks |
| Question 5/1 | Telecommunications/ICTs for rural and remote areas |
| Question 6/1 | Consumer information, protection and rights: Laws, regulation, **economic** bases, consumer networks |
| Question 7/1 | Access to telecommunication/ICT services by persons with disabilities and other persons with specific needs |

# Study Group 2 (SG 2)

*Questions under study*

ICT applications, cybersecurity, emergency telecommunications & climate change adaptation

| | |
|---|---|
| Question 1/2 | Creating the **smart cities** and society: Employing ICTs for sustainable social and economic development |
| Question 2/2 | Telecommunications/ICTs for **eHealth** |
| Question 3/2 | Securing information and communication networks: Best practices for developing a culture of **cybersecurity** |
| Question 4/2 | Assistance to developing countries for implementing conformance and interoperability (C&I) programmes and combating counterfeit ICT equipment and theft of mobile devices |
| Question 5/2 | Utilizing telecommunications/ICTs for disaster risk reduction and management |
| Question 6/2 | ICTs and the environment |
| Question 7/2 | **Strategies and policies concerning human exposure to electromagnetic fields** |

| *What we do*

# events

*What we do*

## EVENTS

### *World Telecommunication Standardization Assembly / WTSA*


Held every four years and defines the next period of study for ITU-T.

- *Draws up the **ITU-T Action Plan** (actions, their associated responsibilities, necessary collaborations, reporting mechanisms and implementation status.*
- ***Sets ITU-T Study Group top** priorities and questions*

Last WTSA-16 took place 25 October - 3 November 2016 in Yasmine Hammamet, Tunisia.

*What we do*

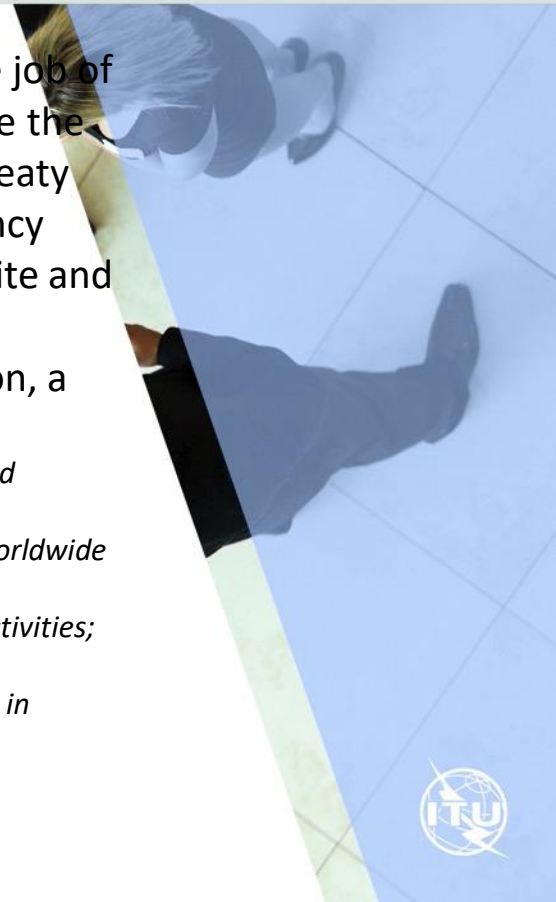
## EVENTS

### *World Radio Conference / WRC*

Held every three to four years. It is the job of WRC to review, and, if necessary, revise the Radio Regulations, the international treaty governing the use of the radio-frequency spectrum and the geostationary-satellite and non-geostationary-satellite orbits.

Under the terms of the ITU Constitution, a WRC can:

- *revise the Radio Regulations and any associated Frequency assignment and allotment Plans;*
- *address any radio-communication matter of worldwide character;*
- *instruct the RRB and ITU-R, and review their activities;*
- *determine Questions for study by the Radio-communication Assembly and its Study Groups in preparation for future Radio-communication Conferences.*



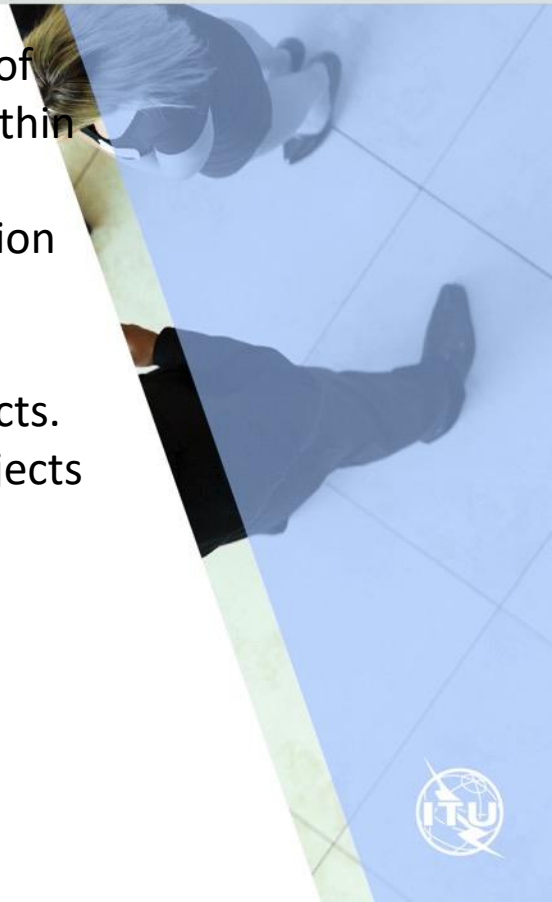
*What we do*

## EVENTS

*World Telecommunication Development Conference / WTDC*

ITUWTDC
BUENOS AIRES 2017
9-20 October

Held every 4 years and a number of Regional Preparatory Meetings within that same period.
WTDC serve as forums for discussion by all concerned with the Development Sector, review the numerous programmes and projects. Results are reported and new projects are launched.



*What we do*

## EVENTS

*World Summit on the Information Society / WSIS*

Establishes internationally agreed foundations for the Internet Society to **ensure digital opportunities for all people**. The WSIS Forum is held annually to review the implementation of the Summit outcomes.

This year WSIS Forum 2018, was hosted by ITU in Geneva (Switzerland) from 19 to 23 March 2018.

*What we do*

## EVENTS

*Global Symposium for Regulators*

*GSR*


9-12 July 2018

The event to unite the global community of ICT regulators to **examine and debate** the latest ICT regulatory challenges. This year it would include

- Global Dialogue on AI, IoT and Cybersecurity – Policy and regulatory challenges and opportunities
- Chief Regulatory Officials (CRO)/ Industry Advisory Group for Development (IAGDI) Meeting
- Regional Regulatory Associations Meeting

*What we do*

## EVENTS

### *AI for Good Summit*


The AI for Good series is the leading United Nations platform for dialogue on AI.

The action-oriented 2018 summit will

- identify practical applications of AI and supporting strategies to improve the quality and sustainability of life on our planet.
- Continue to formulate strategies to ensure trusted, safe and inclusive development of AI technologies and equitable access to their benefits.


ITU

# For further reading:

- ITU Handbook - Computer-Aided Techniques for Spectrum Management (CAT), 2015
- ITU Handbook on National Spectrum Management, 2015
- SMS4DC 5.0 User Guide
- ITU Handbook on Spectrum Monitoring, 2011
- Recommendation ITU-R SM 1370
- Recommendation ITU-R SM 1537
- Recommendation ITU-R SM.1604

# Radio-Electric Spectrum: *General Technical Usage*

| Band | Frequency range | Range | Common use | Bandwidth |
|---|---|---|---|---|
| **VLF (myriametric waves)** | 3-30 kHz | 1 000 km | Long-range radionavigation | Very narrow |
| **LF (kilometric waves)** | 30-300 kHz | 1 000 km | Long-range radionavigation | Very narrow |
| **MF (hectometric waves)** | 300-3 000 kHz | 2-3 000 km | Long-range radionavigation | Moderate |
| **HF (decametric waves)** | 3-30 MHz | Up to 1 000 km | Fixed point-to-point, Global broadcasting | Wide |
| **VHF (metric waves)** | 30-300 MHz | 2-300 km | Broadcasting, Mobile, WAN | Very wide |
| **UHF (decimetric waves)** | 300-3 000 MHz | < 100 km | Broadcasting, Mobile, Satellite | Very wide |
| **SHF (centimetric waves)** | 3-30 GHz | 30-2 000 km | Fixed, Broadcasting, Mobile, WAN, Satellite communications | Very wide up to 1 GHz |
| **EHF (millimetric waves)** | 30-300 GHz | 20-2 000 km | Broadcasting, Fixed point-to-point, Mobile, Satellite communications | Very wide up to 10 GHz |

# Spectrum Management (SM)

Key Terms

| | Allocation | Allotment | Assignment |
|---|---|---|---|
| **Definition** | Allocation (of a frequency band): Entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space radiocommunication services or the radio astronomy service under specified conditions. This term shall also be applied to the frequency band concerned. | Allotment (of a radio frequency or radio frequency channel): Entry of a designated frequency channel in an agreed plan, adopted by a competent conference, for use by one or more administrations for a terrestrial or space radiocommunication service in one or more identified countries or geographical areas and under specified conditions. | Assignment (of a radio frequency or radio frequency channel): Authorization given by an administration for a radio station to use a radio frequency or radio frequency channel under specified conditions. |
| **Frequency Distribution to** | **Services** | **Areas or Countries** | **Stations** |

# RF Spectrum as a National Resource

| Features | Natural Resource | | | |
|---|---|---|---|---|
| | Spectrum | Land | Oil | Water |
| Is the resource varied? | **YES** | YES | Not very | Not very |
| Is it scarce? | **YES** | YES | YES | YES |
| Is it renewable? | **YES** | Partially | NO | YES |
| Can it be stored for later use? | **NO** | NO | YES | YES |
| Can it be exported? | **NO** | NO | YES | YES |
| Can it be traded? | **YES** | YES | YES | YES |
| Can it be made more productive? | **YES** | YES | YES | NO |