ITU and ITU-R
Basics and Facts

Joaquin RESTREPO
Head OPS Division
Radiocommunication Bureau

Overview

- ITU: Brief history and Structure
- ITU Radiocommunications Sector (ITU-R)
- ITU Radiocommunications Bureau (BR)
- ITU-R Study Groups

International Telegraph Union

153 years old : founded on 17 May 1865 by 20 nations

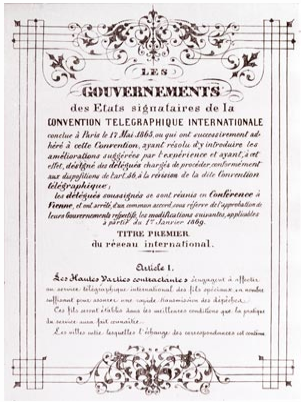
- common rules to standardize equipment to facilitate international interconnection,
- adopted uniform operating instructions which would apply to all countries,
- common international tariff and accounting rules.

Took ITU name on 1934

Became UN agency on 1947

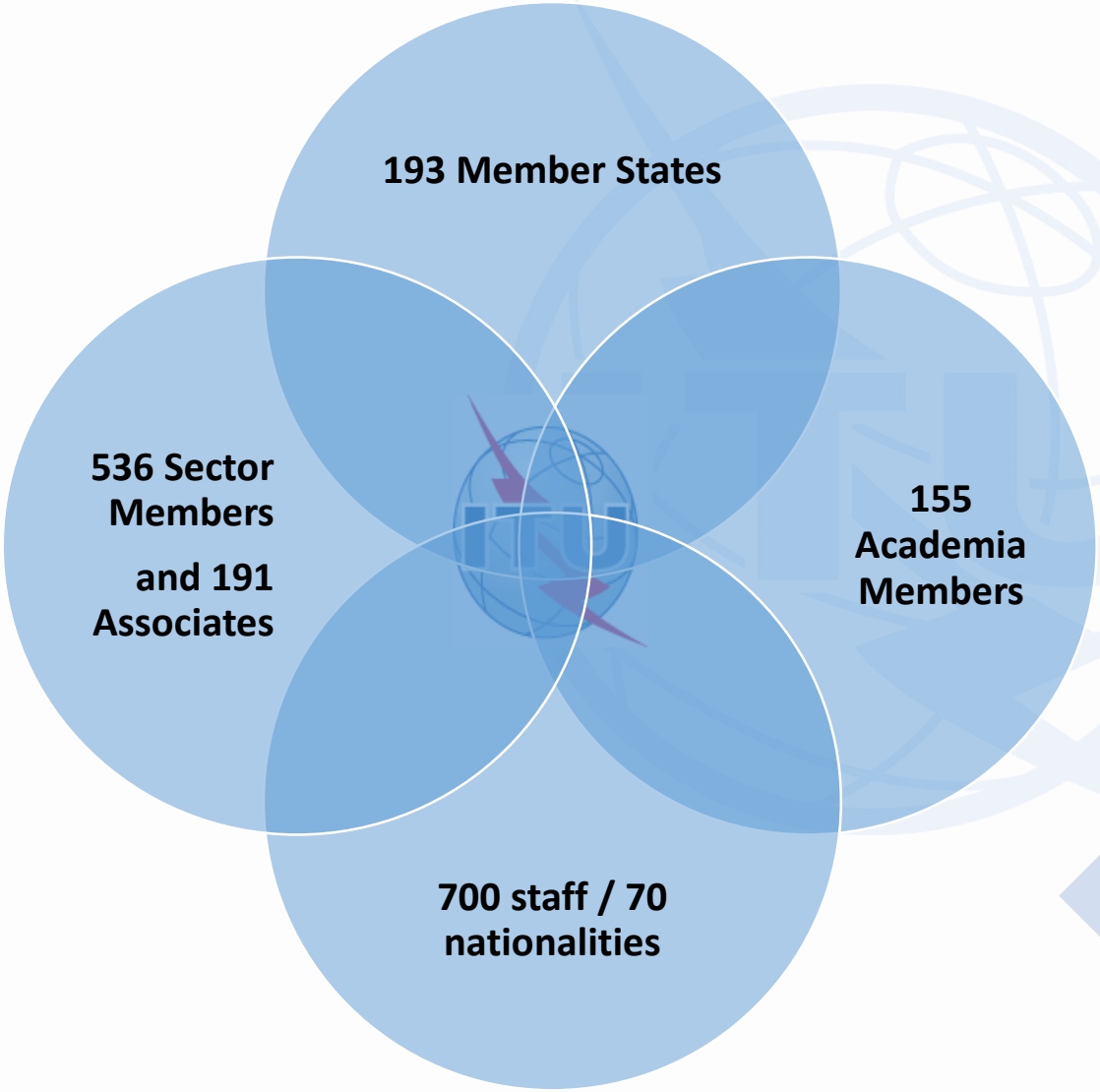
History of ITU-R in brief

1906 (Berlin)	International Radiotelegraph Convention (1st *Radio Regulations*)
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): •RRB (Radio Regulations Board) •BR (Radiocommunication Bureau)


LES
GOUVERNEMENTS
des Etats signataires de la
CONVENTION TELEGRAPHIQUE INTERNATIONALE
TITRE PREMIER
du réseau international.
Article 1.

International Telecommunication Union

Website: www.itu.int



United Nations specialized agency for information and communication technologies – ICTs:

allocate global radio spectrum and satellite orbits,

develop the technical standards that ensure networks/technologies interconnect,

strive to improve access to ICTs to underserved communities worldwide.

Legal framework

comprises, in particular, the following legal instruments of the Union, which have treaty status:

The Constitution:

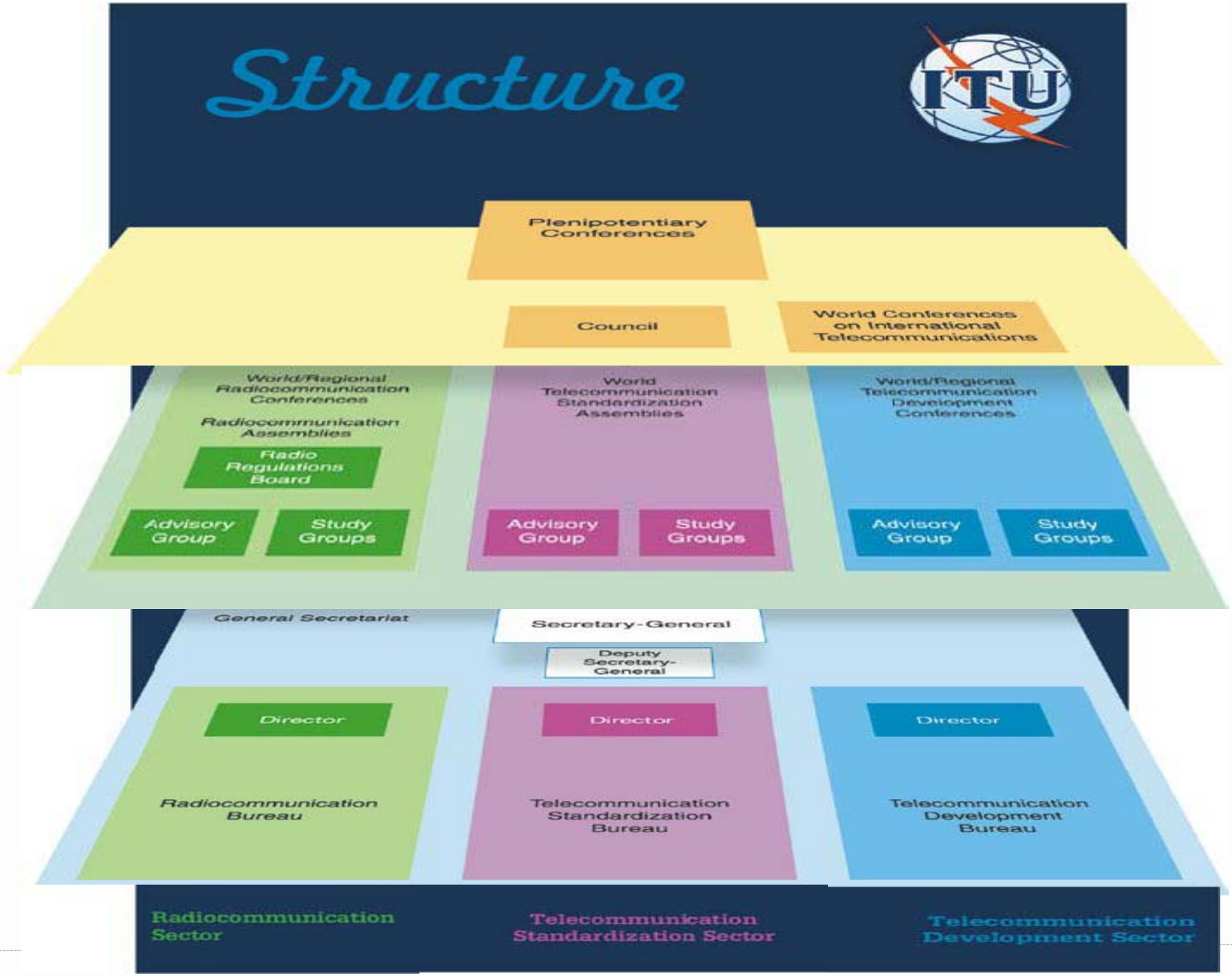
- **basic instrument of the International Telecommunication Union, with the object of facilitating peaceful relations, international cooperation among peoples and economic and social development by means of efficient telecommunication services**

The Convention:

- **complements the Constitution**

The Administrative Regulations:

- **Radio Regulations;**
- **International Telecommunication Regulations**, which complement the Constitution and the Convention: establish general principles which relate to the provision and operation of international telecommunication services offered to the public as well as to the underlying international telecommunication transport means used to provide such services. They also set rules applicable to administrations


Structure
ITU
Plenipotentiary Conferences
Council
World Conferences on International Telecommunications
World/Regional Radiocommunication Conferences
Radiocommunication Assemblies
Radio Regulations Board
Advisory Group
Study Groups
World Telecommunication Standardization Assemblies
Advisory Group
Study Groups
World/Regional Telecommunication Development Conferences
Advisory Group
Study Groups
General Secretariat
Secretary-General
Deputy Secretary-General
Director
Radiocommunication Bureau
Director
Telecommunication Standardization Bureau
Director
Telecommunication Development Bureau
Radiocommunication Sector
Telecommunication Standardization Sector
Telecommunication Development Sector

ITU Governance

ITU is governed by the Plenipotentiary Conference (PP) and the Administrative Council.

Plenipotentiary Conference, PP

Supreme organ of the Union. It is the decision making body which determines the direction of the Union and its activities. PP is held every 4 years:

- PP10: Guadalajara, Mexico, October 2010
- PP14: Busan, Korea, October 2014
- **PP18: Dubai, United Arab Emirates, 29/10 to 16/11 2018**
- PP22: 3Q 2022, venue tbd

https://www.itu.int/web/pp-18

Plenipotentiary Conferences, PP

Recent PP-18 elected officials (from 01-01-2019 to 31-12-2022)

- Secretary General : Houlin Zhao, China (re-elected)
- Deputy-Secretary General: Malcolm Johnson, United Kingdom (re-elected)
- ITU Radiocommunications Bureau (BR): Mario Maniewicz, Urugay
- ITU Standardization Bureau (TSB): Chaesub Lee, Korea (re-elected)
- ITU Development Bureau (BDT): Doreen Bogdan-Martin, USA

Radio Regulations Board:

- Americas: Chantal Beaumier, Canada; Fernando Borjón Figueroa, Mexico
- West Europe: Yvon Henri, France; Lilian Jeanty, Netherlands,
- East Europe, North Asia: Sahiba Hasanova, Azerbaijan, Nikolay Varlamov, Russia
- Africa: Elsayed Azzouz, Egypt; Hassan Talib, Morroco; Samuel Mandla Mchunu South Africa
- Asia: Akira Hashimoto, Japan; Tariq Alamri, Saudi Arabia; Doan Hoan, Vietnam

https://www.itu.int/web/pp-18/en/home/electionResult

ITU Council

ITU Council acts as the Union's governing body in the interval between Plenipotentiary Conferences.

Council is conformed by Administrations elected during PP (less than 25% of State Members, i.e. 48 Members)

ITU Council meets every year (next meeting: April 2018)

Its role is to consider broad telecommunication policy issues to ensure that the Union's activities, policies, strategies, and budget, fully respond to today's dynamic, rapidly changing telecommunications environment.

http://www.itu.int/en/council/Pages/default.aspx

ITU Council

New Council will be composed by (from 01-01-2019 to 31-12-2022):

- Region A (Americas): 9 seats; Argentina, Bahamas, Brazil, Canada, Cuba, El Salvador, Mexico, Paraguay, United States
- Region B (Western Europe): 8 seats; France, Germany, Greece, Hungary, Italy, Lithuania Spain, Switzerland, Turkey
- Region C (Eastern Europe and Northern Asia): 5 seats; Azerbaijan, Bulgaria, Czech Republic, Kyrgyzstan, Poland, Romania, Russia
- Region D (Africa): 13 seats; lgeria, Burkina Faso, Cameroon, Côte d'Ivoire, Egypt, Ghana, Kenya, Mali, Mauritania, Morocco, Nigeria, Rwanda, Senegal, South Africa, Sudan, Uganda, Tanzania, Togo, Tunisia
- Region E (Asia and Australasia): 13 seats; Australia, China, Japan, Korea (South), Kuwait, India, Indonesia, Iran, Pakistan, Philippines, Thailand, United Arab Emirates

Radiocommunication Sector (ITU-R)

vital role in the global management of the radio-frequency spectrum and satellite orbits -

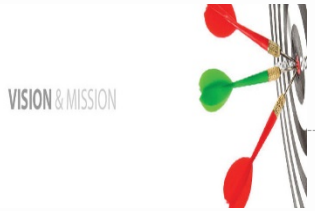
Manages limited natural resources which are increasingly in demand from a large and growing number of services

The ITU Radiocommunication Sector (ITU-R) role and mission

rational, equitable, efficient and economical use of the radiofrequency spectrum by all radiocommunication services,

- ensure interference free operations of radiocommunication systems

- carry out studies and approve Recommendations on radiocommunication-related matters



Radiocommunication Sector (ITU-R)

- **is to ensure <u>interference free</u> through the implementation and the efficient and timely update of the:**
  - <u>Radio Regulations</u> and
  - Regional Agreements.

Objective

- Developing and updating international regulations on the use of orbit /spectrum
- Applying these regulations
- Developing and adopting standards and best practices on the use of orbit/spectrum
- Disseminating information on these regulations, standards and best practices

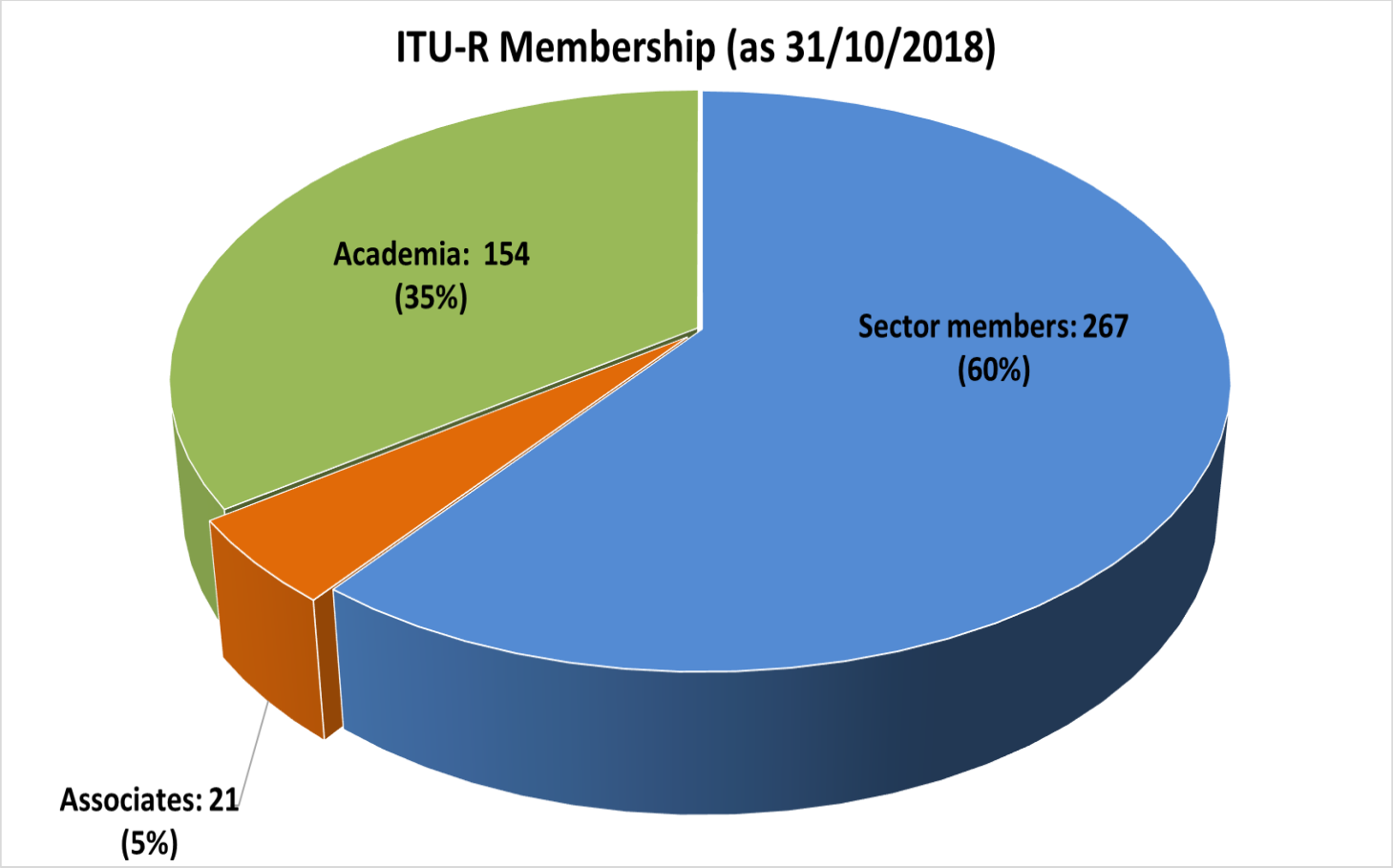
Role/Duties

Radio standardization also establishes *´Recommendations´* intended to assure the necessary performance and quality in operating radiocommunication systems, and seeks <u>ways and means to conserve spectrum and ensure flexibility for future expansion and new technological developments.</u>

ITU-R Membership

ITU-R counts with all 193 ITU States members and 420 memberships coming from 58 countries and 81 Regional & International Organizations (as 30/Oct/2018):

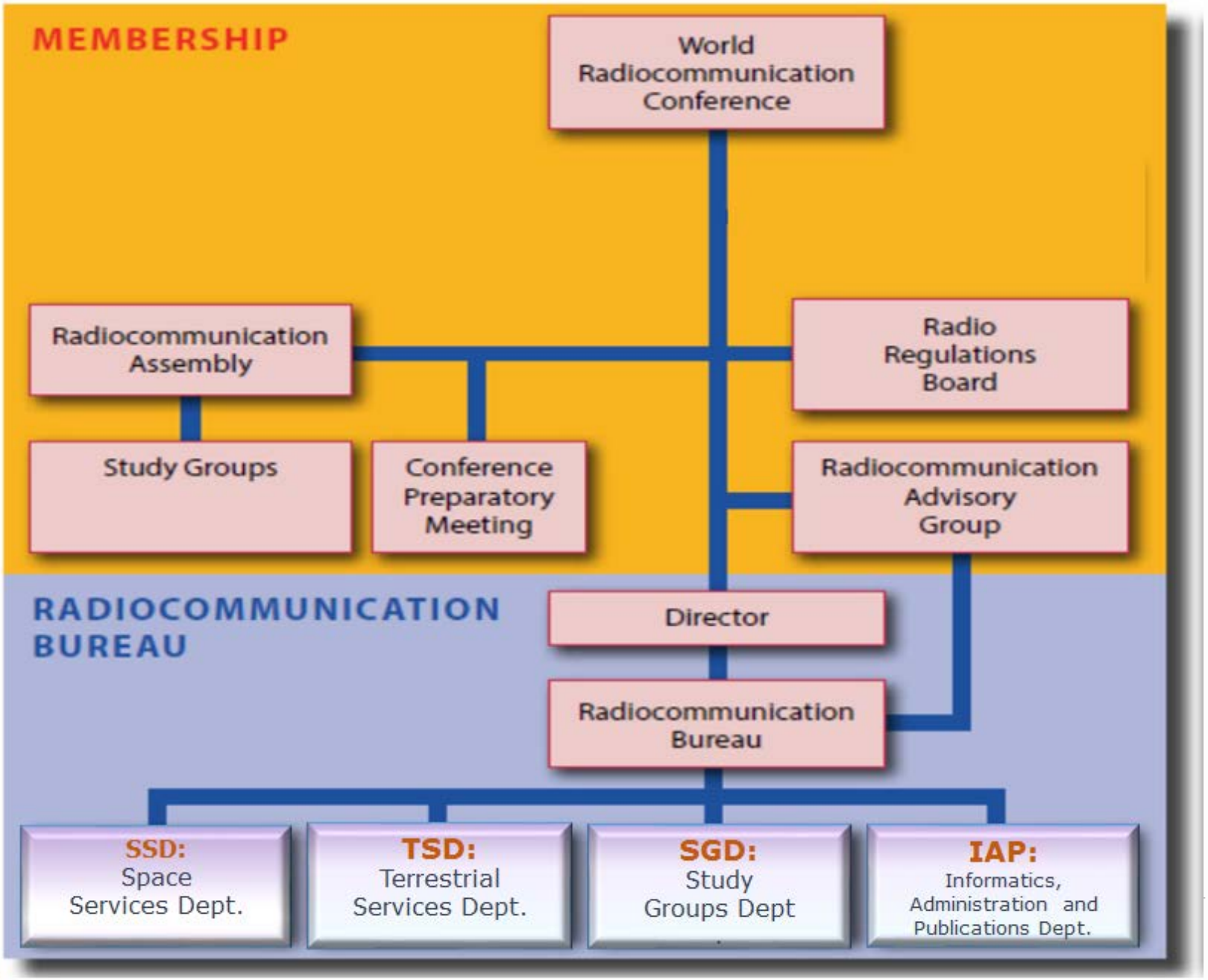
- Sector members: 267
- Associates: 21
- Academia*: 154



* PP14 decision (Res 169, rev Busan 2014): Academia join all 3 sectors with a single fee

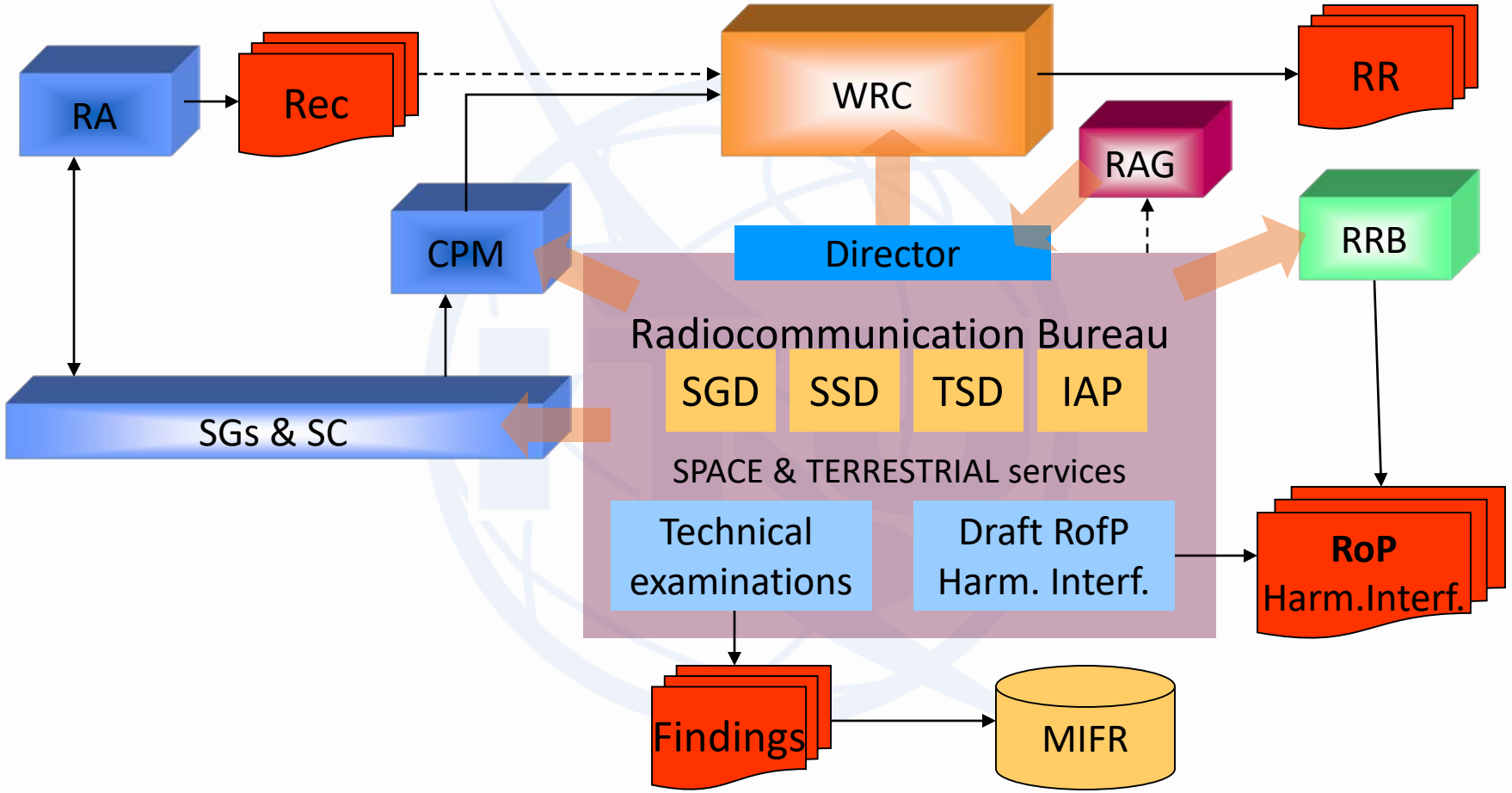
ITU-R and BR Structure

www.itu.int/go/ITU-R



Radiocommunication Sector (ITU-R)

Structure & Activities



CPM: Conference Preparatory Meeting
MIFR: Master International Frequency Registry
RA: Radiocommunication Assembly
RAG: Radiocommunication Advisory Group
Rec: Recommendations (international voluntary standards)

RoP: Rules of Procedure
RR: Radio Regulations (treaty status)
RRB: Radio Regulations Board
SGs: Study Groups
WRC: World Radiocommunication Conference

World Radio Conferences, WRC

- by considering technological developments on Radio sector, its realities and challenges, to respond early and appropriately to these.

WRC performs a complete and detailed review of the RR

- modify the RR and consider any radiocommunication matter of worldwide character
- Develop instructions to the RRB and the BR
- Determine issues considered by RA and SGs as part of the preparatory work for WRC future
- Set agenda of next WRC, and subsequent draft.

WRC has the authority, among others, to

- develop and maintain, by consensus, a sustainable ecosystem for radiocommunications and avoid massive disruptions.
- **only if necessary, a vote (one vote per administration)**

On a consensus basis

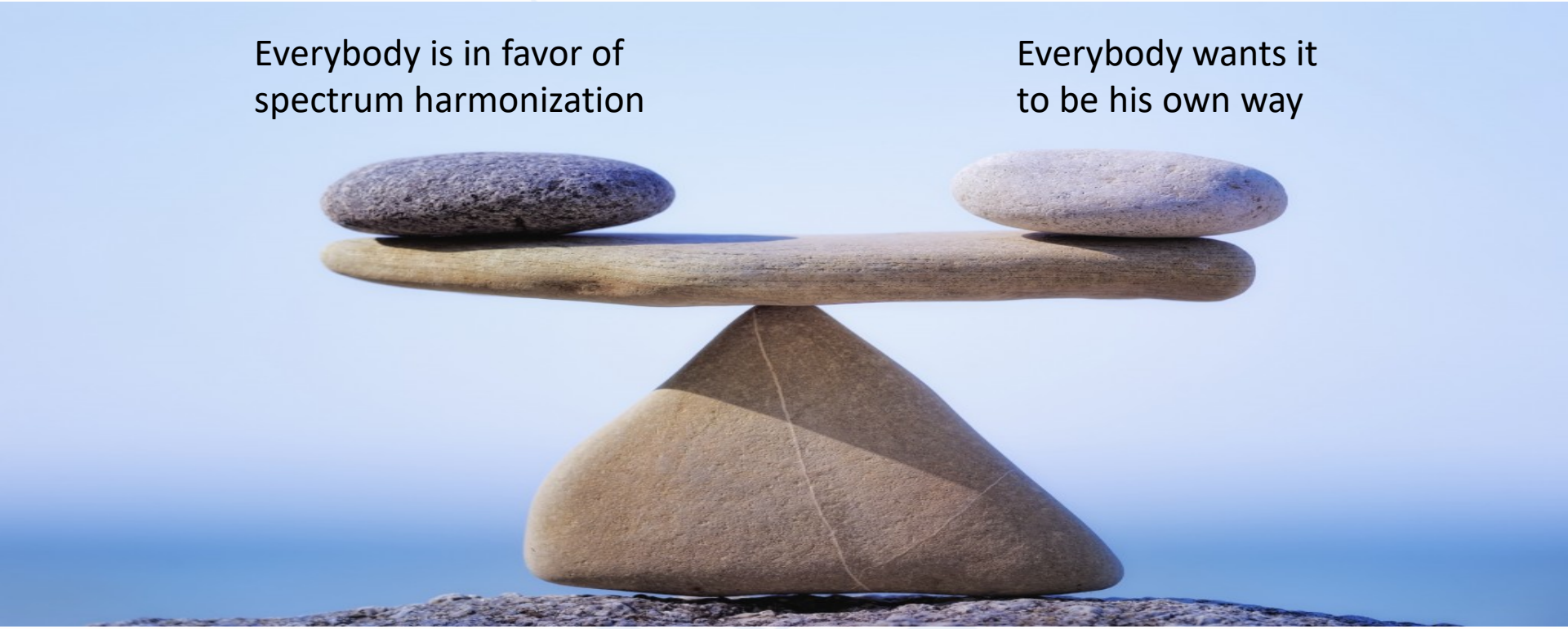
Create regulatory certainty for a multi-trillion dollars activity which plays an increasingly important role in the development of our societies

Creating certainty requires consensus in order to achieve stable results on a sustainable use of orbit/spectrum resources

Challenges

Everybody is in favor of spectrum harmonization

Everybody wants it to be his own way



Ex.: The success of mobile broadband and its ubiquitous nature represents a threat of disruption to other services if IMT is identified in the same band, even though technical solutions may exist to share it between countries

Radiocommunication Assembly (RA)

- Assign conference preparatory work and other questions to the Study Groups
- Respond to other requests from ITU conferences
- Suggest suitable topics for the agenda of future WRCs
- Approve and issue ITU-R Recommendations and ITU-R Questions developed by the Study Groups
- Set the programme for Study Groups, and disband or establish Study Groups according to need.

Radiocommunication Assemblies (RA) are responsible for the structure, programme and approval of radiocommunication studies. RA duties includes:

Last RA: Geneva, Switzerland 26-30 October 2015 (RA-15)

Next RAs

- RA-19: 21-25 October Sharm El-sheikh, Egypt
- RA-23: 4Q 2023; same venue of WRC-23, hold week before it

RAs are convened every 4 years (Res. 77 PP14), associated in time and place with WRC (the week before)

Radiocommunications Advisory Group (RAG)

- Review the priorities and strategies adopted in the Sector
- Monitor progress of the work of the Study Groups;
- Provide guidance for the work of the Study Groups;
- Recommends measures to foster cooperation/ coordination with other organizations and with the other ITU Sectors.
- Provide advice on these matters to the Director of the Radiocommunication Bureau (BR).

Radiocommunication Assemblies (RAs) may refer specific matters within its competence to the RAG. The RAG may be authorized to act on behalf of the RA between two Assemblies.

RAG meets yearly in Geneva.

Last meeting: 26-29 March 2018

Next meeting: 15-17 April 2019

RAG meetings are open to ITU-R members.

Radio Regulations Board, RRB

- **Approve the Rules of Procedure (RoP) which uses the ITU-R to implement the provisions of RR, and registering frequency assignments made by Member States;**
- **Consider matters referred by the BR can not be solved by applying the RR and its Rules of Procedure;**
- **Browse research reports unresolved interference by BR application of one or more treatments, and make recommendations thereon;**
- **Advise the WRC and RA**
- **Consider appeals against decisions taken by the BR regarding frequency assignments;**

RRB meets 3 - 4 times per year at the ITU headquarters in Geneva, Switzerland.
http://www.itu.int/en/ITU-R/conferences/RRB/Pages/default.aspx

RRB, addresses the correct and accurate application of RR and RoP.

RRB is conformed by 12 members, elected during PP, it performs their functions independently and non-permanent basis, including:

Radiocommunications Bureau (ITU BR)

- BR is headed by an elected Director responsible for the coordination of the work of the Sector, managing professional and administrative teams of BR.

BR management

- administrative and technical support to WRCs, RAs, ITU-R SG, WPs and Task Groups;
- Applies the provisions of the RR and various Regional Agreements;
- Records and registers frequency assignments and orbital characteristics of space services,
- maintains the Master International Frequency Register, MIFR
- Coordinates the preparation, editing and dispatch of circulars, documents and publications developed within the Sector;

BR duties

BR Study Groups Dept.

BR Study Groups Dept supports

The work of:

- **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)**

Space Services

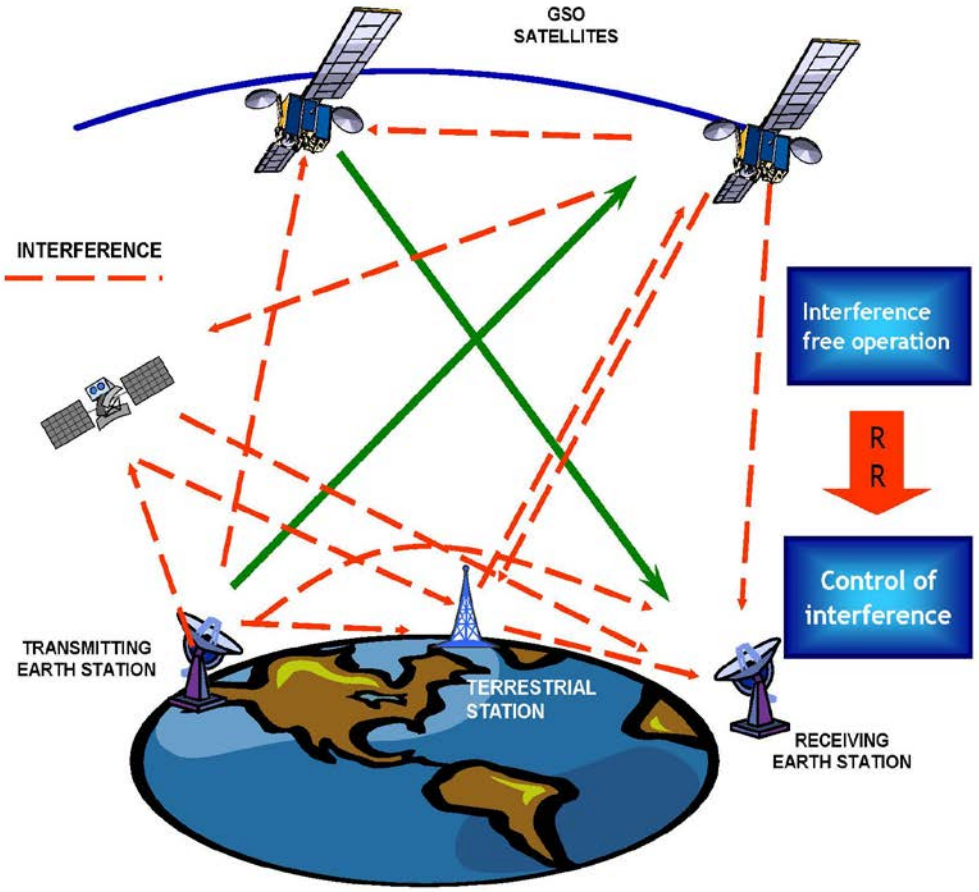
www.itu.int/ITU-R/space/

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



Terrestrial Services

(www.itu.int/ITU-R/terrestrial/)

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*

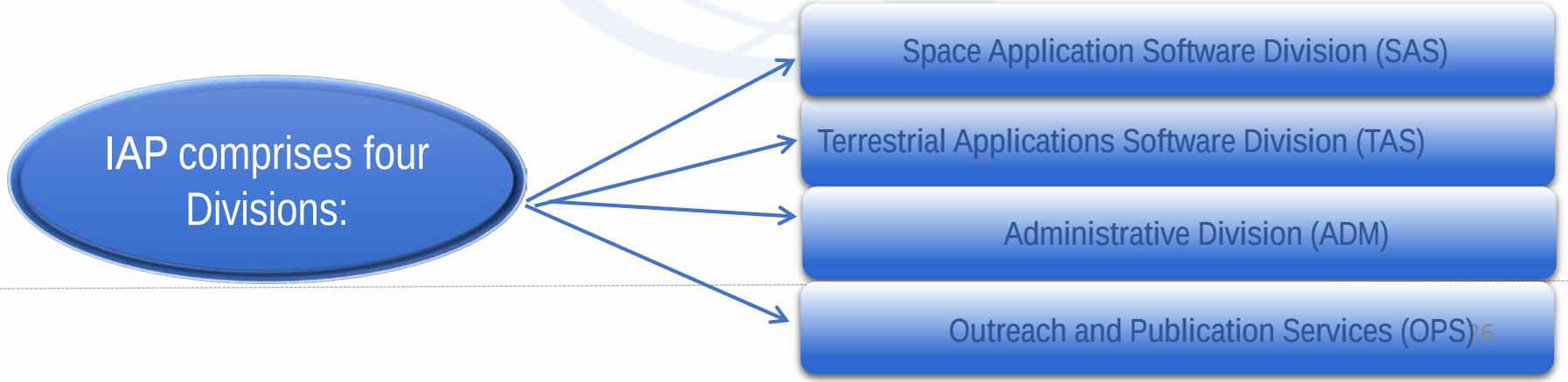
Harmful interference & monitoring programs

IAP

IAP is responsible for the development and maintenance of major software packages used by the BR as well as software adapted to national frequency management units. IAP carries out studies related to policies for the technologies to be used for the information handling within the BR and administrations in the fields of management of the radio frequency spectrum and satellite orbits.

IAP undertakes activities related to:

- ITU-R Publications
- Website development;
- Membership and outreach in coordination with the General Secretariat and the other Bureaux.
- Also centralizes the IT resources of ITU-R. I
- IAP undertakes actions and activities relating to development and enhancement of the automation tools for the support of all the other activities and outputs of the Sector. In addition, VI) IAP is responsible for the general administrative functions of BR, including the correspondence registry, document and delegate registration management for conferences and meetings. It also oversees all BR financial and personnel matters



ITU-R Study Groups (SG)

http://www.itu.int/en/ITU-R/study-groups

develop the technical bases for decisions taken at WRCs and develop global standards (Recommendations), Reports and Handbooks on radiocommunication matters.

gather more than 5000 specialists from ITU Member States, Sector and Associate Members, and Academia ;

counts with 6 SG, composed by 21 Working Parties, WP.

WP meets twice a years (some WP 1 or 3), normally at Geneva. SG meets yearly (after sessions of their respective WP)

Currently 1165 Recommendations and 536 Reports in force, and also 42 Handbooks

ITU-R Publications: Resolutions (ITU-R RA), Recommendations, Reports, Handbooks, Opinions, Questions, and some software and databases are of public access (download), free of charge.

http://www.itu.int/en/ITU-R/Documents/BD_Flyer_A4_E.pdf

ITU-R Study Groups

ITU-R Study Groups develop the technical bases for decisions taken at WRCs and develop global standards (Recommendations), Reports and Handbooks on radiocommunication matter. Particular attention is paid to the radiocommunication needs of developing countries.

ITU-R SGs gathers more than 4,000 specialists, from: ITU Member States, Sector and Associate Members, and Academia participate on ITU-R SG activities; ITU-R SG work in cooperation with other international radiocommunication organizations.

ITU-R counts with 6 SG, composed by 21 Working Parties, WP

WP meets twice a years (some WP 1 or 3), normally at Geneva.

SG meets yearly (after sessions of their respective WP)

http://www.itu.int/en/ITU-R/study-groups

All ITU-R Rec, Rep, Op, and the Spectrum Management related Handbooks are of public access (download), free of charge

http://www.itu.int/en/ITU-R/Documents/BD_Flyer_A4_E.pdf

ITU-R Study Groups

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

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

- "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
- 1170 Recommendations, 536 Reports, 42 Handbooks in force

ITU-R Study Groups

ITU-R STUDY GROUPS (SG) AND WORKING PARTIES (WP)

SG 1	**Spectrum Management**	**WP 1A**	**WP 1B**	**WP 1C**	
		Spectrum engineering techniques	Spectrum management methodologies and economic strategies	Spectrum monitoring	
SG 3	**Radiowave Propagation**	**WP 3J**	**WP 3K**	**WP 3L**	**WP 3M**
		Propagation fundamentals	Point-to-area propagation	Ionospheric propagation and radio noise	Point-to-point and Earth-space propagation
SG 4	**Satellite Services**	**WP 4A**	**WP 4B**	**WP 4C**	
		Efficient orbit/spectrum utilization for the fixed-satellite service (FSS) and broadcasting-satellite service (BSS)	Systems, air interfaces, performance and availability objectives for the fixed-satellite service (FSS), broadcasting-satellite service (BSS) and mobile-satellite service (MSS), including IP based applications and satellite news gathering (SNG)	Efficient orbit/spectrum utilization for the mobile-satellite service (MSS) and the radiodetermination-satellite service (RDSS).	
SG 5	**Terrestrial Services**	**WP 5A**	**WP 5B**	**WP 5C**	**WP 5D**
		Land mobile service above 30MHz (excluding IMT); wireless access in the fixed service; amateur and amateur-satellite services	Maritime mobile service including the Global Maritime Distress and Safety System (GMDSS); the aeronautical mobile service and the radiodetermination service	Fixed wireless systems; HF and other systems below 30 MHz in the fixed and land mobile services	IMT systems
SG 6	**Broadcasting Services**	**WP 6A**	**WP 6B**	**WP 6C**	
		Terrestrial broadcasting delivery	Broadcast service assembly and access	Programme production and quality assessment	
SG 7	**Science Services**	**WP 7A**	**WP 7B**	**WP 7C**	**WP 7D**
		Time signals and frequency standard emissions	Space radiocommunication applications	Remote sensing systems	Radio astronomy
CCV	Coordination Committee for Vocabulary				
CPM	Conference Preparatory Meeting				
SC	Special Committee on regulatory/procedural matters				

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, automated techniques and assistance to developing countries in cooperation with the Telecommunication Development Sector.

In addition, inter-service sharing and compatibility (urgent studies by request), including the development of Recommendations(s) or Reports(s) to the Conference Preparatory Meeting in answer to those urgent Questions concerning inter-service sharing and compatibility requiring special attention.

Structure

- WP 1A : Spectrum engineering techniques
- WP 1B : Spectrum management methodologies and economic strategies
- WP 1C: Spectrum monitoring

ITU-R Study Group 3

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

Structure

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

ITU-R Study Group 4

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

Structure

- WP 4A: Efficient orbit/spectrum utilization for the fixed-satellite service (FSS) and broadcasting-satellite service (BSS)

- WP 4B: Systems, air interfaces, performance and availability objectives for the fixed-satellite service (FSS), broadcasting-satellite service (BSS) and mobile-satellite service (MSS), including IP based applications and satellite news gathering (SNG)

- WP 4C: Efficient orbit/spectrum utilization for the mobile-satellite service (MSS) and the radiodetermination-satellite service (RDSS).

ITU-R Study Group 5

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

Structure

- WP 5A: Land mobile service above 30MHz (excluding IMT); wireless access in the fixed service; amateur and amateur-satellite services

- WP 5B: Maritime mobile service including the Global Maritime Distress and Safety System (GMDSS); the aeronautical mobile service and the radiodetermination service

- WP 5C: Fixed wireless systems; HF and other systems below 30 MHz in the fixed and land mobile services

- WP 5D: IMT systems

ITU-R Study Group 6

Scope: Radiocommunication broadcasting, including vision, sound, multimedia and data services principally intended for delivery to the general public; it encompasses the production and distribution of programmes (vision, sound, multimedia, data etc.) as well as contribution circuits among studios, information gathering circuits (ENG, requirements for SNG, etc.), primary distribution to delivery nodes, and secondary distribution to consumers.

Structure

- WP 6A: Terrestrial broadcasting delivery
- WP 6B: Broadcast service assembly and access
- WP 6C: Programme production and quality assessment

ITU-R Study Group 7

Scope: "Science services" refer to the standard frequency and time signal, space research (SRS), space operation, Earth exploration-satellite (EESS), meteorological-satellite (MetSat), meteorological aids (MetAids) and radio astronomy (RAS) services.

Structure

- WP 7A: Time signals and frequency standard emissions: Systems and applications (terrestrial and satellite) for dissemination of standard time and frequency signals;

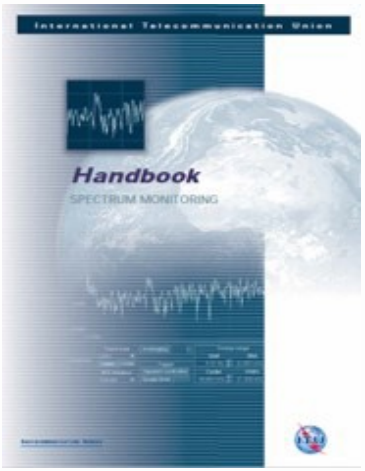
- WP 7B: Space radiocommunication applications: Systems for transmission/ reception of telecommanded and tele-metry data;

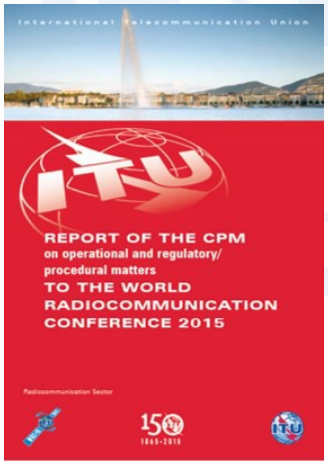
- WP 7C: Remote sensing systems: for space operation and for space research;

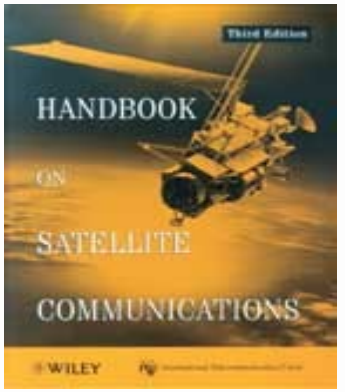
- WP 7D: Radio astronomy: remote sensing systems and applications for Earth exploration meteorology and plantetary sensing

Study Group Products

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







ITU-R Releases

- *ITU-R Recommendations:* http://www.itu.int/pub/R-REC
- *ITU-R Reports:* http://www.itu.int/pub/R-REP
- *ITU-R Opinions:* http://www.itu.int/pub/R-OP
- *ITU-R Handbooks:* http://www.itu.int/pub/R-HDB

Compliance with ITU-R Recommendations is not mandatory. However, while some are incorporated by reference in the ITU Radio Regulations,

ITU-R Recommendations are developed by radiocommunication world experts, thereby enjoying a high reputation and worldwide implementation, having the status of international standards in their domain of application.

There are 1170 Recommendations and 536 Reports in force (June 2018). All ITU-R Rec, Rep, Op, and the SM related Handbooks are of public access (download), free of charge

More than one million downloads expected this year.

ITU-R Series

BO: Satellite delivery

BR: Recording for production, archival and play-out; film for television

BS: Broadcasting service (sound)

BT: Broadcasting service (television)

F: Fixed service

M: Mobile, radiodetermination, amateur and related satellite services

P: Radiowave propagation

RA: Radio astronomy

RS: Remote sensing systems

S: Fixed-satellite service

SA: Space applications and meteorology

SF: Frequency sharing and coordination between fixed-satellite and fixed service systems

SM: Spectrum management

Nomenclature : Recommendation ITU-R SM.2103-0 (09/2017)

Type Sector Serie.Number-version* Issued date

* Normally version .x supersedes version.(x-1)

ITU-R Publications

SERIES	TOPIC	Study Group*	SG matters	Recommendations	Reports
BO	Satellite delivery	**SG4 & SG6**		46	30
BR	Recording for production, archival and play-out; film for television	**SG6**	Broadcasting service	4	0
BS	Broadcasting service (sound)	**SG6**	Broadcasting service	84	49
BT	Broadcasting service (television)	**SG6**	Broadcasting service	160	109
F	Fixed service	**SG5**	Terrestrial services	147	23
M	Mobile, radiodetermination, amateur and related satellite services	**SG4 & SG5**		253	177
P	Radiowave propagation	**SG3**	Radiowave Propagation	79	14
RA	Radio astronomy	**SG7**	Science services	14	10
RS	Remote sensing systems	**SG7**	Science services	40	22
S	Fixed-satellite service	**SG4**	Satellite services	143	23
SA	Space applications and meteorology	**SG4 & SG7**		56	30
SF	Frequency sharing and coordination between fixed-satellite and fixed service systems	**SG4 & SG7**		20	1
SM	Spectrum management	**SG1**	Spectrum Management	95	48
SNG	Satellite news gathering	**SG4**	Satellite services	9	0
TF	Time signals and frequency standards emissions	**SG7**	Science services	15	0
V	Vocabulary and related subjects	**(CCV)**	Coordination Comitee for Vocabulary	5	0
TOTAL				**1170**	**536**

*SGs mainly involved; due to transversal nature, some series also involve other(s) SG

SG	SG1	SG3	SG4	SG5	SG6	SG7	Special Supplements	TOTAL
	Spectrum Management	Radiowave Propagation	Satellite Services	Terrestrial Services	Broadcasting Services	Science Services		
Handbooks	**4**	**8**	**5**	**12**	**6**	**6**	**1 (1-4) - MSS**	**42**

Period: Jan 1, 2018 - Jun 30, 2018

ITU-R RECOMMENDATIONS DOWNLOADS TREND

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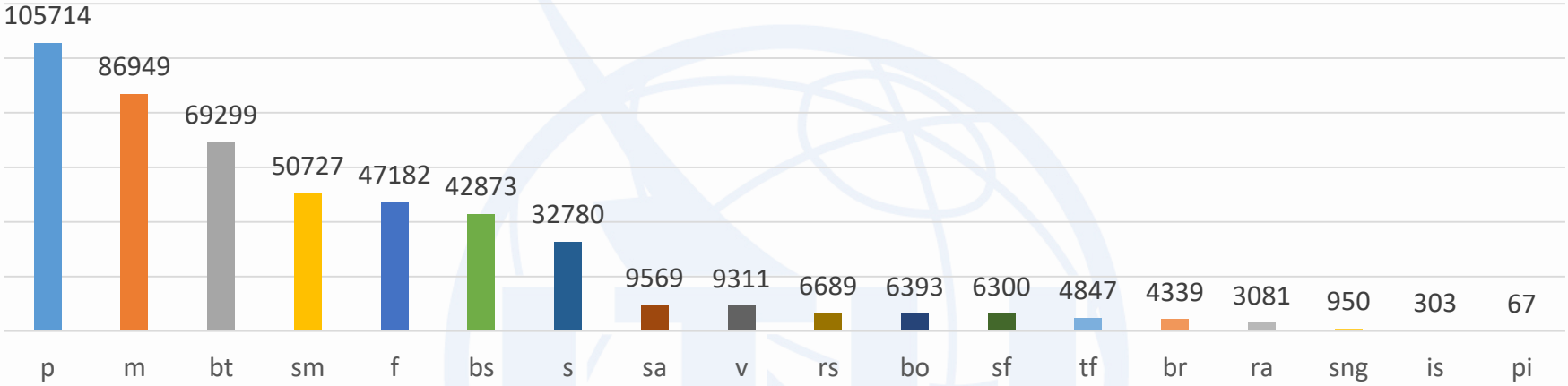

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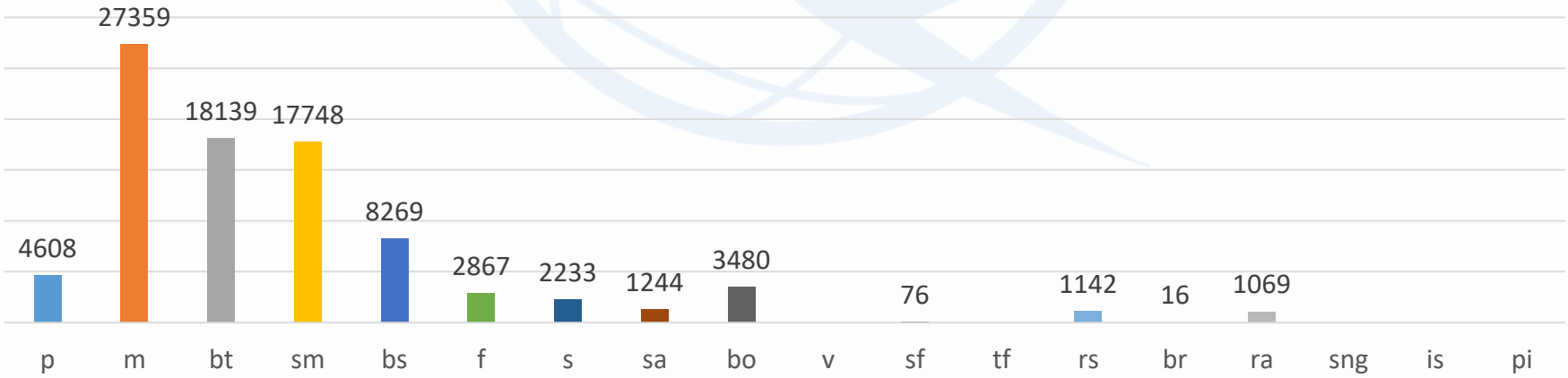

ITU-R Resources free access

https://www.itu.int/oth/R040200003F/en

ITU-R Resources free access

- WRC-19 Agenda & Resolutions
https://www.itu.int/oth/R1402000001/

- ITU Radio Regulations (edition of 2016)
https://www.itu.int/pub/R-REG-RR-2016/

- Free online access to ITU-R Publications, Software and Databases
http://www.itu.int/oth/R040200003F/

- Status of the transition to Digital Terrestrial Television Broadcasting (portal)
https://www.itu.int/en/ITU-D/Spectrum-Broadcasting/Pages/DSO/

ITU-R Documents Database Search Facility:
http://itu.int/brdocsearch

World and Regional Radio Seminars (WRS/RRS)

After WRC-15, BR a intra-WRCs WRS/RRS cycle was started, aimed at disseminating worldwide the revision of the Radio Regulations made by WRC-15 and the associated Rules of Procedure.

These Seminars foster human capacity building on the use of the radio-frequency spectrum and the satellite orbits, in particular the application of the provisions of the ITU Radio Regulations. RRS are complemented with Forum sessions dedicated to spectrum-related topics of particular interest to the involved region.

These seminars were hosted by the governments, the regulators or the spectrum management authorities of the host countries, in cooperation with the relevant regional organizations and the ITU regional/areas offices

– WRS-16: more than 350 participants from over 120 countries
– In eight RRS: more than 700 participants from over 110 countries

WRS18: more than 400 participants from over 130 countries

3 RRS are planned for 2019, concluding the 2016-2019 cycle

Thank you

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Questions/request of assistance: brmail@itu.int