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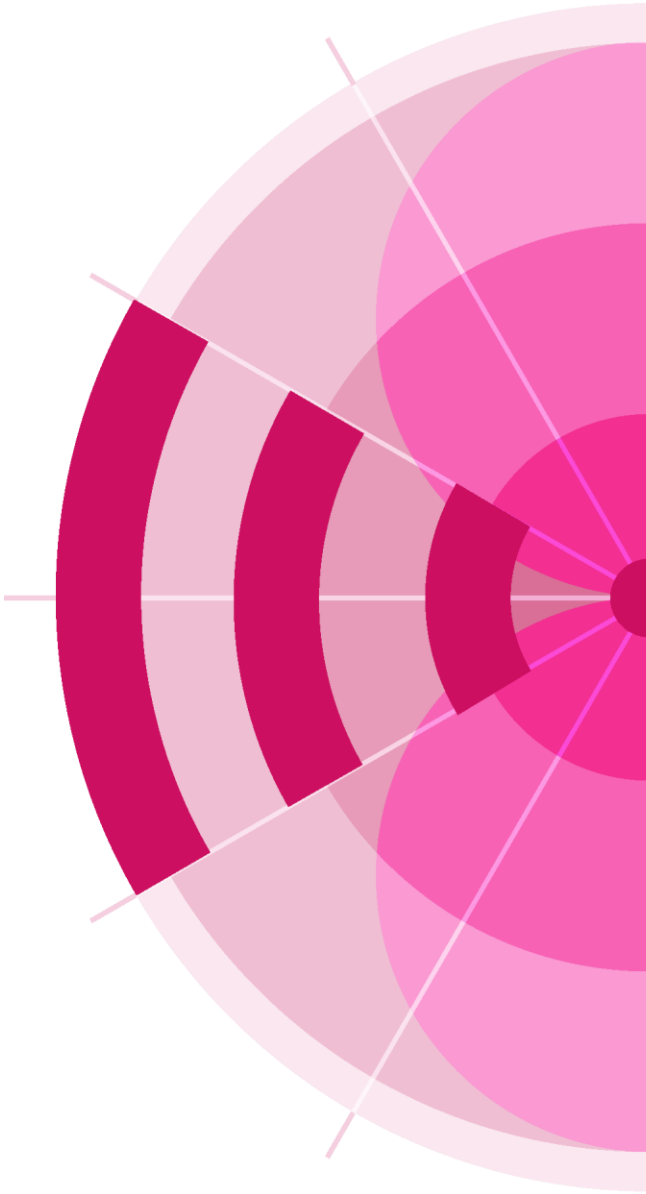
29TH WORLD RADIOCOMMUNICATION SEMINAR

30 November – 11 December 2020

ITU-R Study Groups

Sergio Buonomo

Chief, Radiocommunication Study Groups Department



www.itu.int/go/wrs-20

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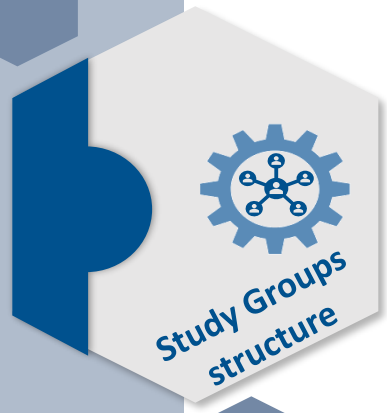
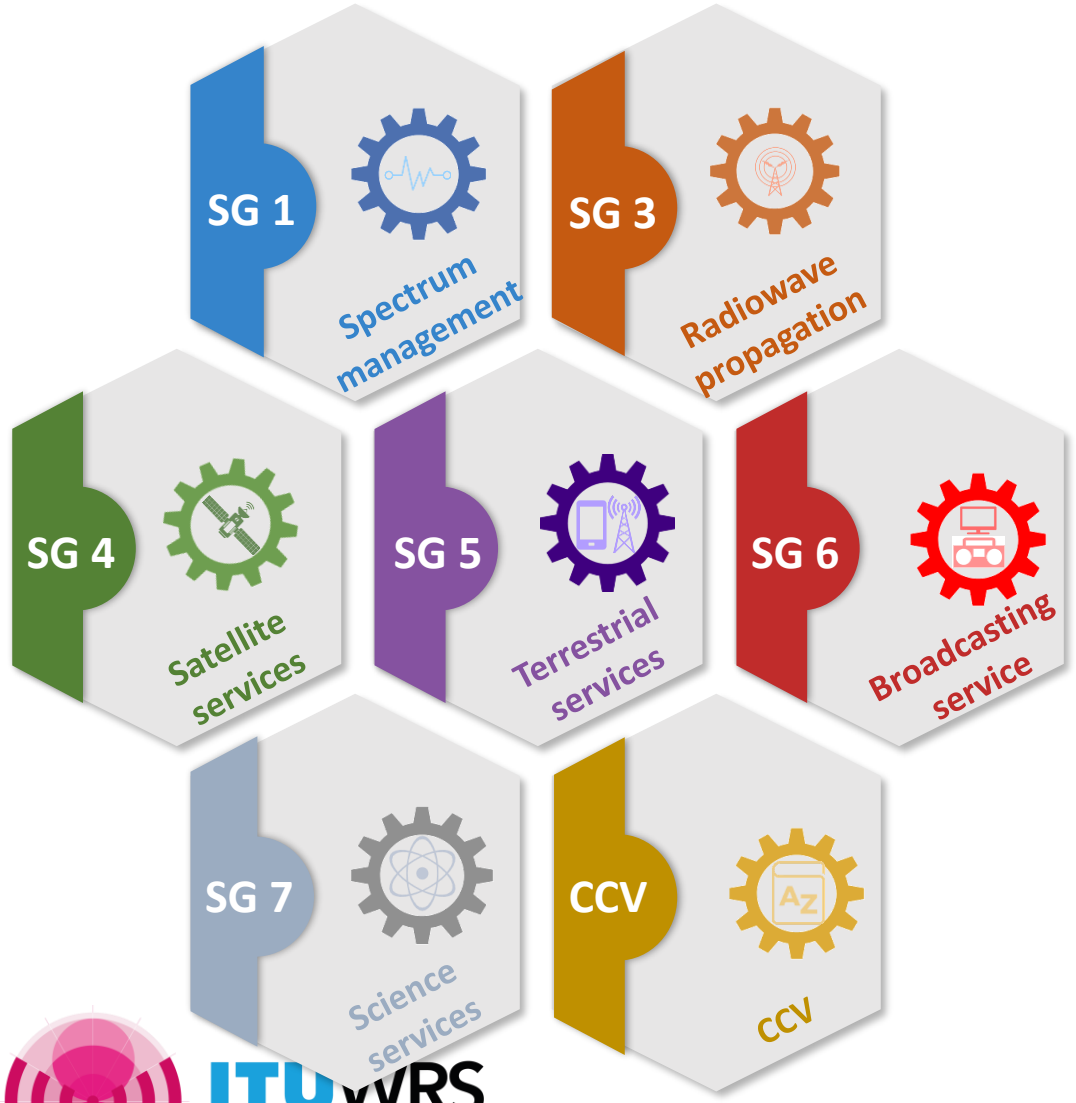
Study Groups



- The work of the Study Groups is governed by the **ITU-R Resolutions**, in particular Resolution ITU-R 1, and **WRC agenda items** requesting preparatory studies.
- The studies are driven by Contributions from the Membership.
- Each Study Group carries out studies, adopting Recommendations and Questions, as well as approving Reports, Decisions, Opinions and Handbooks, on radiocommunication matters under its mandate.
- These are the technical, operational and procedural basis for decisions taken at WRCs and for efficient use of the radio spectrum and the geostationary-satellite orbit.

ITU-R Study Groups and their Working Parties



SG 1	WP 1A	Spectrum engineering techniques
	WP 1B	Spectrum economic approaches
	WP 1C	Spectrum monitoring
SG 3	WP 3J	Propagation fundamentals
	WP 3K	Point-to-point propagation
	WP 3L	Ionospheric propagation and radio noise
	WP 3M	Earth-space propagation
SG 4	WP 4A	Efficient orbit/satellite utilization for FSS and BSS
	WP 4B	Systems, air interfaces, performance and availability objectives for FSS, BSS & MSS
	WP 4C	Efficient orbit/satellite utilization for MSS and RDSS
SG 5	WP 5A	Land mobile, fixed, amateur and amateur-satellite services
	WP 5B	Maritime and aeronautical mobile services and radiodetermination
	WP 5C	HF and systems in the fixed and land mobile services
	WP 5D	IMT systems
SG 6	WP 6A	Terrestrial broadcasting delivery
	WP 6B	Broadcast service assembly and access
	WP 6C	Programme production and quality assessment
	TG 6/1	WRC-23 agenda item 1.5
SG 7	WP 7A	Time signals and frequency standard emissions
	WP 7B	Space radiocommunication applications & research, meteorological satellite, etc.
	WP 7C	Remote sensing systems: Earth exploration, space weather sensors, etc.
	WP 7D	Radio astronomy
CCV		Coordination Committee for Vocabulary

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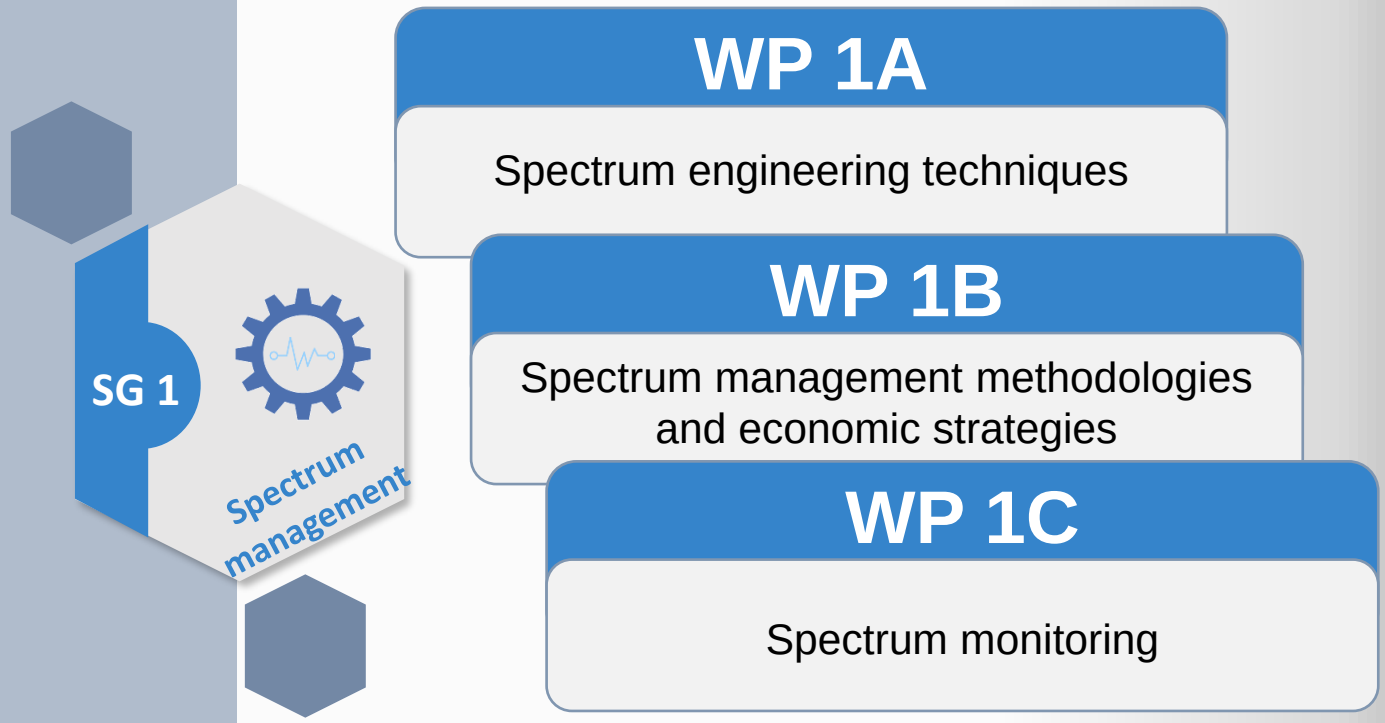
Study Group 1

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;
- Assistance to developing countries;
- Wireless Power Transmission (incl. for electric vehicles);
- Harmonization for short-range devices;
- Performance evaluation of mobile Direction Finder units;
- Electromagnetic field measurements to assess human exposure.

Chairman: Mr. Wael Sayed
Counsellor: Mr. Philippe Aubineau
SG 1 website

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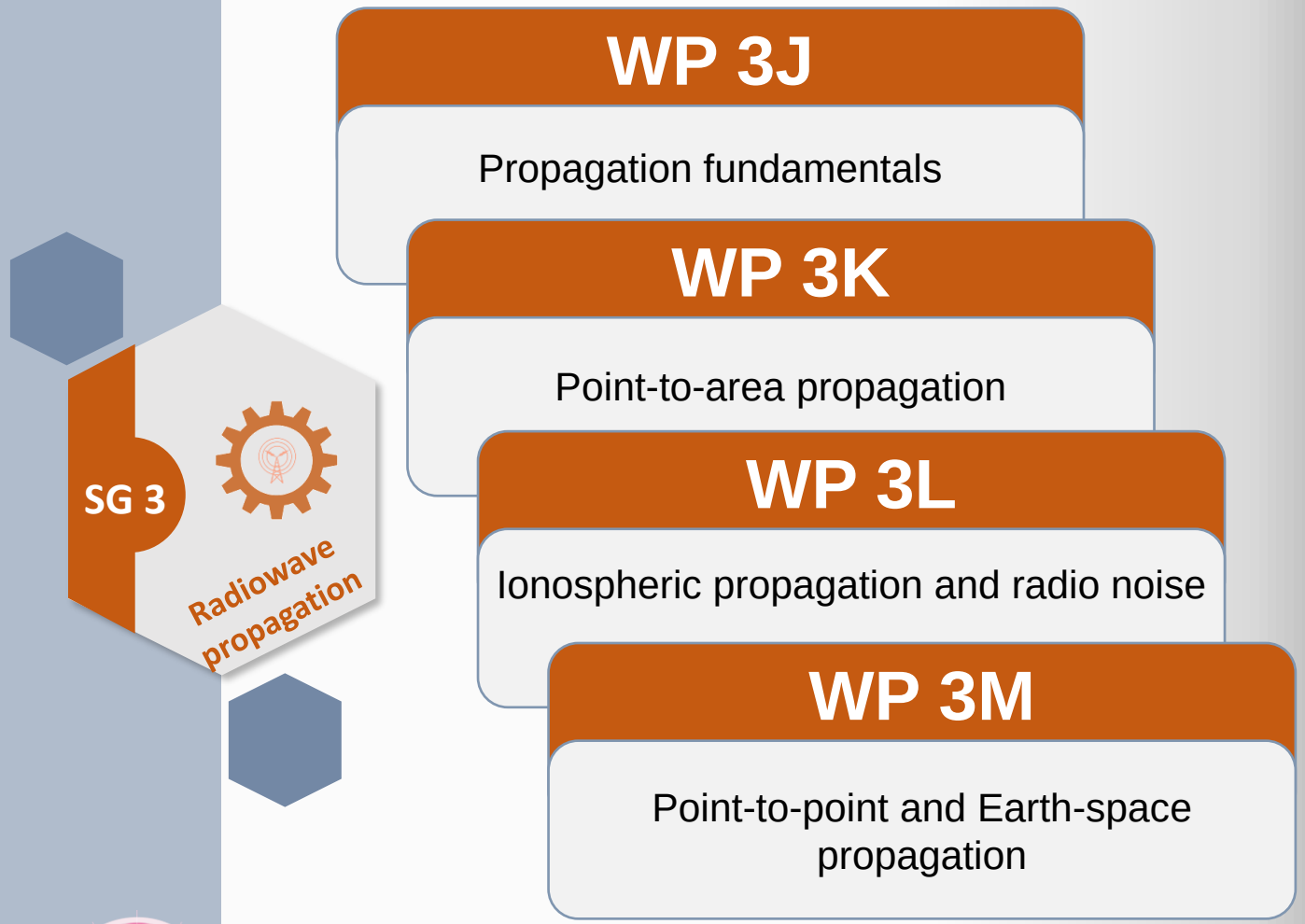
Study Group 3
Radiowave propagation



Scope

- Propagation of radio waves in ionized and non-ionized media;
- Characteristics of radio noise, for the purpose of improving radiocommunication;
- Propagation models in support to all radio services;
- Building entry loss models;
- Clutter loss models.

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Chairman: Mrs. Carol Wilson
Counsellor: Mr. David Botha
SG 3 website

Study Group 4
Satellite services

WP 4A
Efficient orbit/spectrum utilization for FSS and BSS satellite services

WP 4B
Systems, interfaces, performance availability for FSS, BSS & MSS plus SNG

WP 4C
Efficient orbit/spectrum utilization for MSS and RDSS

Scope

- Systems and networks for:
  - fixed-satellite service;
  - mobile-satellite service;
  - broadcasting satellite service;
  - Radiodetermination and radio navigation-satellite service.
- IP global broadband Internet access via satellite;
- Integration of satellite systems into Next Generation Access Technologies (5G);
- Early warning and relief operations.

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Chairman: Mr. Victor Strelets
Counsellor: Mr. Nelson Malaguti
SG 4 website

Study Group 5

Terrestrial services

WP 5A

Mobile >30 MHz, wireless access (fixed service), amateur including satellite services

WP 5B

Maritime mobile & GMDSS, aeronautical mobile & radiodetermination services

WP 5C

Fixed wireless systems; HF other <30 MHz in fixed & mobile services

WP 5D

IMT Systems

Scope

- Radio local area networks (RLANs), amateur service and emergency telecommunications and Intelligent Transport Systems (ITS);
- Wireless communications;
- Global Maritime Distress and Safety System (GMDSS), the aeronautical mobile service, the radiodetermination service, including both radiolocation and radionavigation services;
- Fixed service communications;
- Fixed wireless access (FWA) systems and HAPS;
- IMT-2000, IMT-Advanced and IMT-2020: which provide the global platform on which to build the next generation (5G) of mobile broadband connectivity;
- Machine-to-Machine communications including IoT.

Chairman: Mr. Martin Fenton
Counsellor: Mr. Uwe Löwenstein
Counsellor WP 5B: Mr Vadim Nozdrin
SG 5 website

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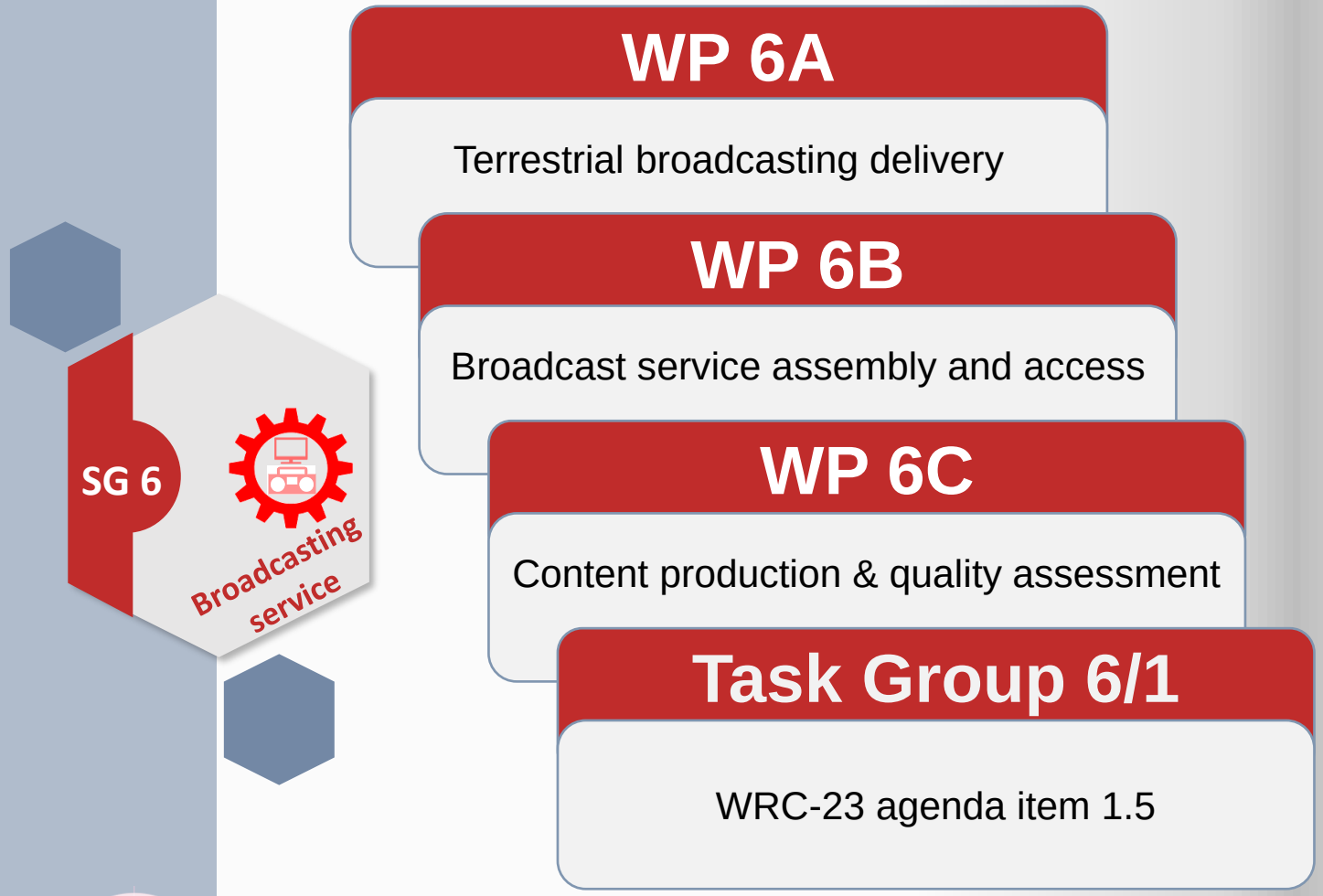
Study Group 6
Broadcasting service



Scope

- Radiocommunication broadcasting, including vision, sound, multimedia data services intended for delivery to the general public;
- New audio-visual formats (HDTV, UHDTV, immersive sound);
- Formats for international content exchange;
- Compression techniques & new multiplexing techniques (MMT);
- New DTTB systems and development in IBB systems;
- Advancing accessibility services;
- In Region 1, review spectrum use & needs of existing services & consider possible regulatory actions in the 470-694 MHz band in accordance with Resolution **235 (WRC-15)**.

Chairman: Dr. Yukihiro Nishida
Counsellor: Mr. Ruoting Chang
SG 6 website

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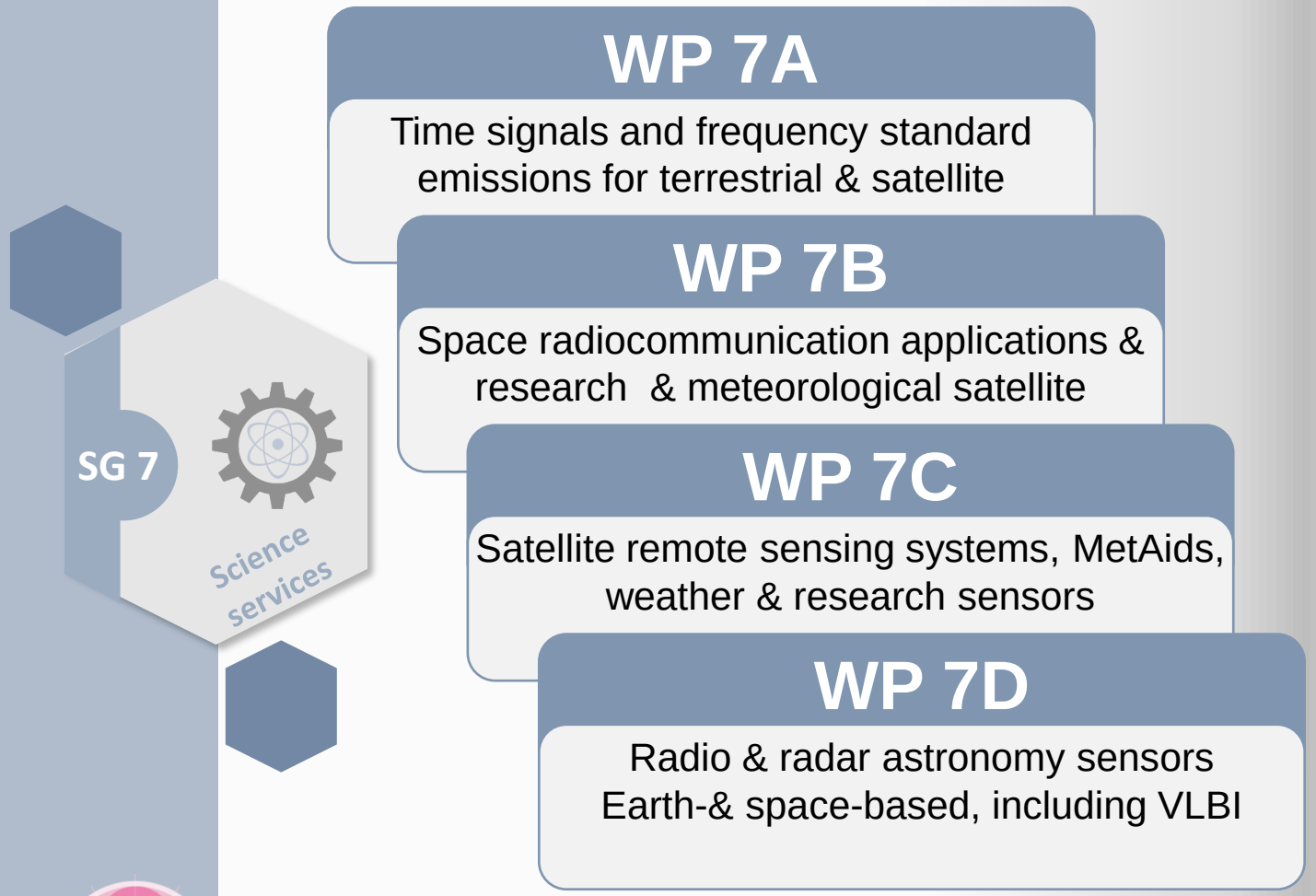
Study Group 7

Science services



Scope

- Preserving spectrum for operation and development of meteorological applications;
- Global environment monitoring – atmosphere (including greenhouse gases emissions), oceans, land surface, biomass, etc.;
- Weather forecasting and climate change monitoring and prediction;
- Detection and tracking of many natural and man-made disasters (earthquakes, tsunamis, hurricanes, forest fires, oil leaks, etc);
- Providing alerting/warning information;
- Damage assessment and planning relief operations;
- Use of radio spectrum for meteorology in close collaboration with WMO.

Chairman: Mr. John Zuzek
Counsellor: Mr. Vadim Nozdrin
SG 7 website

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CCV

Role of the CCV

CCV

Coordination Committee for Vocabulary
The terminology is included in the "ITU Terms and Definitions" database.

Scope

Coordination and approval of:

- vocabulary, including abbreviations and initials;
- related subjects, quantities and units, graphical & letter symbols.

In close collaboration with:

- the Radiocommunication Study Groups;
- ITU-D and ITU-T Sectors
- the General Secretariat;
- Conferences and Publications Department;
- the International Electrotechnical Commission (IEC);
- other interested organizations.

Chairman: Mr. Christian Rissone
Counsellor: Mr. Nelson Malaguti
CCV website

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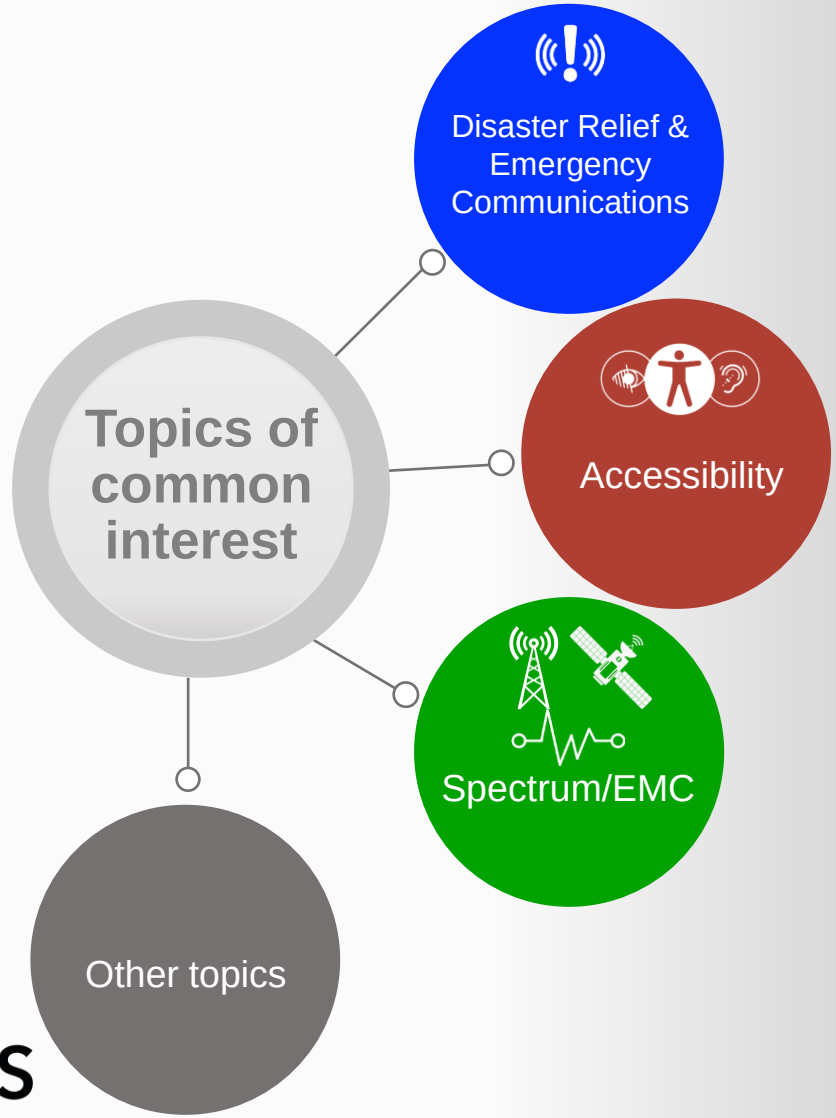
Topics of common interest and intersectoral activities



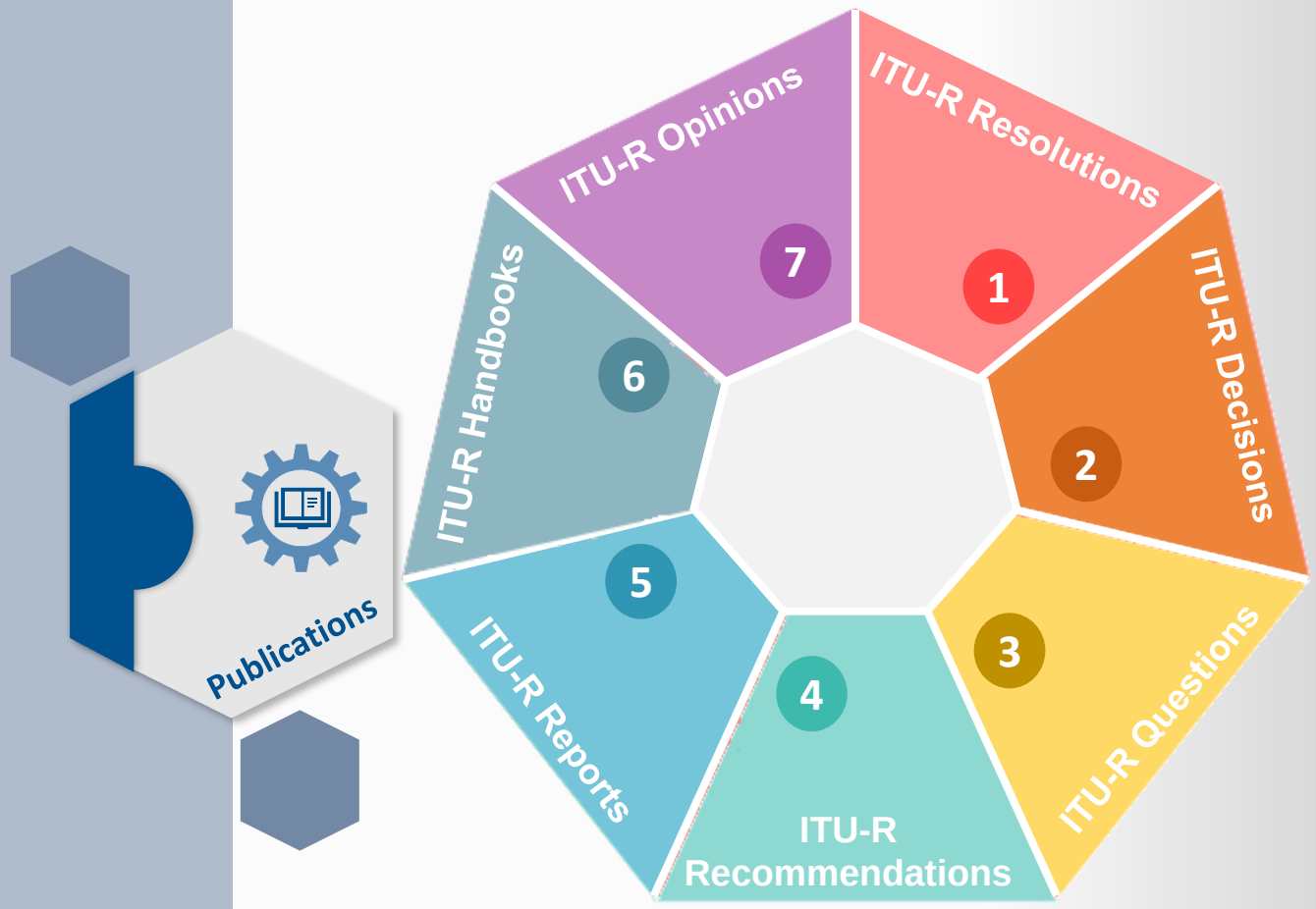
- Cooperation with ITU Climate Change
- Cooperation Emergency Telecommunications Task Force
- Implementation of Resolution 136 (Rev. Dubai, 2018)
- Studies in response to Resolution ITU-R 60-2

- Active participation in Joint Coordination Activity on Accessibility & Human Factors
- Contribution to the studies carried out under Question ITU-D 7/1
- Studies relating to the UN Charter under Question ITU-R 145/6

- Liaison with external organizations
- Collaboration with ITU-D to contribute to WTDC Resolution 9

Documentation of ITU-R

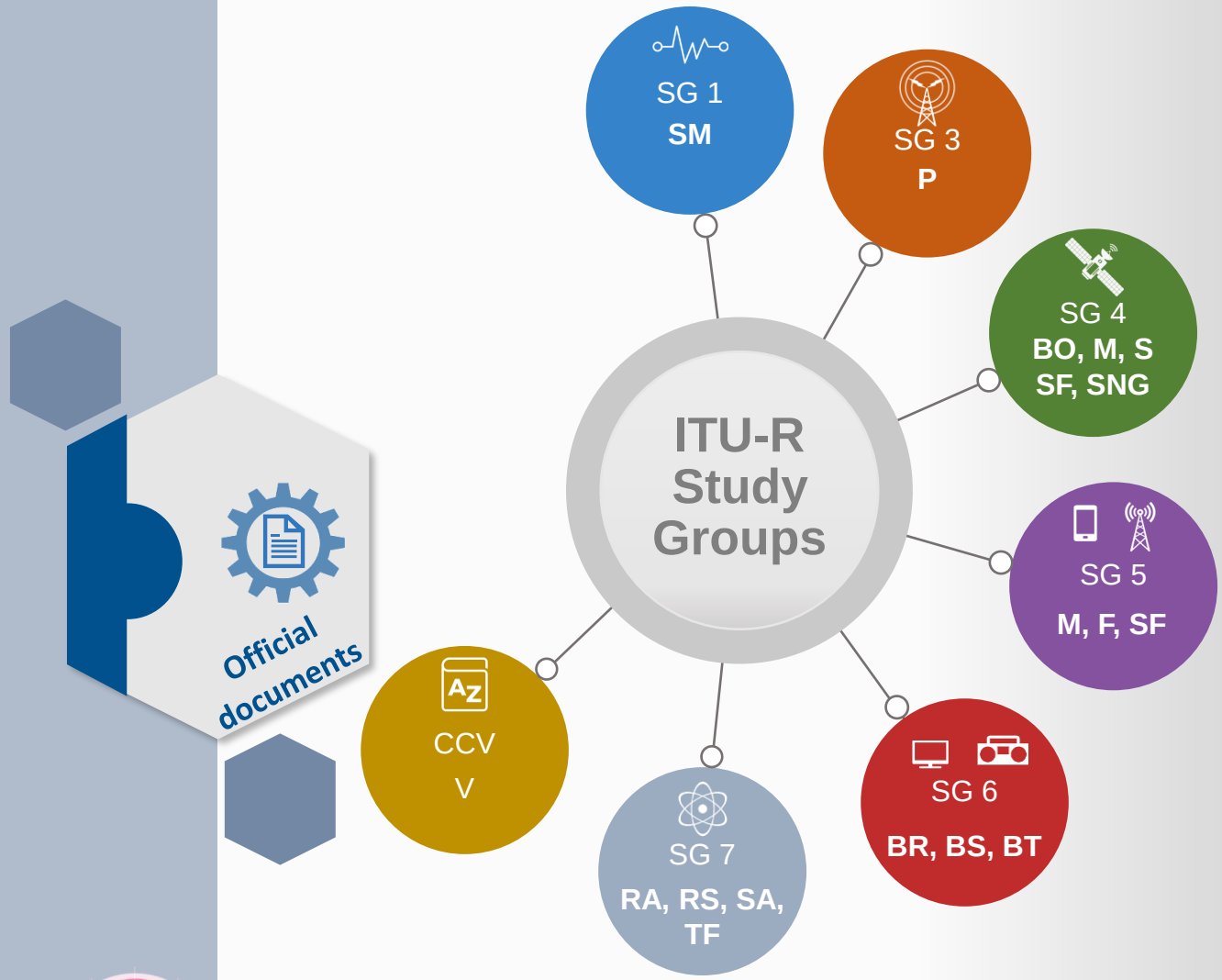
Publications



1. A text giving instructions on the organization, methods or programmes of RA or SG work. *(§ A2.3.1)*
2. A text giving instructions on the organization of the work of a Study Group. *(§ A2.4.1)*
3. A statement of a technical, operational or procedural study, generally seeking a Recommendation, Report or Handbook. *(§ A2.5)*
4. An answer to a Question or part(s) of a Question or other topics defined in Annex 1 *(§ A1.3.1.2)*
5. A technical, operational or procedural statement, prepared by a Study Group on a given subject. *(§ A2.7)*
6. Provide a statement of the current knowledge, the present position of studies, or of good operating or technical practice. *(§ A2.8.1)*
7. A text containing a proposal or a request destined for another and not necessarily relating to a technical subject *(§ A2.9.1)*

SG official documents

Published documents types



Series	Title
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/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 & coordination between fixed-satellite & fixed service systems
SM	Spectrum management
SNG	Satellite news gathering
TF	Time signals and frequency standards emissions
V	Vocabulary and related subjects

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BR Document Search Tool

World and Regional Radio Seminars

- During the study cycle, the Bureau organizes events worldwide to convey latest changes to the Radio Regulations (RR) made by a WRC and other associated Rules of Procedure (RoP).
- It provides latest information on the status of the studies currently ongoing in ITU-R

World Radio Seminars (WRS)

- The BR organizes the World Radiocommunication Seminars (WRS) on a **biennial basis**.
- WRS are held at ITU Geneva, every other year.
- The agenda includes theoretical sessions and some days for workshops on terrestrial and space services.

Regional Radio Seminars (RRS)

The BR maintains its strategy for **regional outreach** through the organization of RRS to visit every developing region worldwide, **fostering human capacity building** on the use of the radio-frequency spectrum and satellite orbits.

About 3-4 times per year, RRS are held around the world and are jointly organized with the spectrum management authorities of host countries, in close cooperation with relevant regional organizations and the ITU regional/areas offices.

The agenda is complemented with a one or two-day forum, dedicated to spectrum-related topics of particular interest to the region.

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WRS/RRS cycle 2019-2023

Regional Radio Seminars (RRS)

Two RRS were conducted in 2020, with more than 650 participants from over 65 countries:

- ***RRS-20-Americas***
- online, focused on Caribbean sub-region; jointly organized with CTU
- more than 350 participants from 38 countries

- ***RRS-20-Asia & Pacific***
- online, focused on Pacific Islands and Southern-Western Asia sub-regions; jointly organized with APT
- more than 300 participants from 30 countries

World Radio Seminars (WRS)

WRS-20; online, around 800 registered participants from over 120 countries*; 6 UN official languages

Planned WRS and RRS (2021-2023)

- RRS-Africa (2, E&F)
- RRS-Americas (2, S)
- RRS-Arab States (1, A)
- Asia& Pacific (2, E):
- CIS (1, R)
- Eastern Europe (1, E): Albania
- WRS-22: 6 UN official languages

*As of 25 November 2020

Development of the study period

Continuous activities

RAG

- Advises the **BR Director**;
- May take some of the responsibilities of the RA between assemblies.

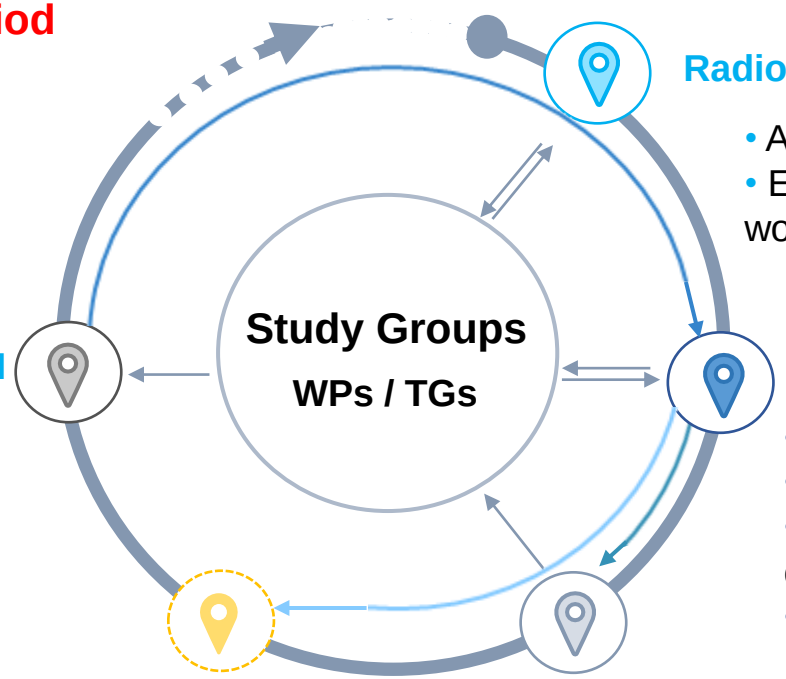
Study Groups

- Adopt ITU-R Recommendations;
- Approve ITU-R Reports and other documents.

Working Parties / Task Groups

- Conduct studies in response to ITU-R and WRC Resolutions;
- Carry out preliminary studies on WRC agenda items;
- Prepare ITU-R Recommendations, Reports and other documents.

4-year study period



Radiocommunication Assembly

- Approves ITU-R Resolutions;
- Establishes the work programme, working methods and structure.

World Radiocommunication Conference

- Reviews and revises the Radio Regulations;
- Approves WRC Resolutions;
- Recommends an agenda for future conferences;
- Establishes the WRC agenda items.

First session CPM

- Assigns responsible groups for each WRC agenda item;
- Appoints Chapter Rapporteurs.

Council decision

Sets up the agenda for the next WRC **two years** in advance.

Second session CPM

- Consolidates the draft CPM Report.

WRS and **RRS**s and other capacity building events

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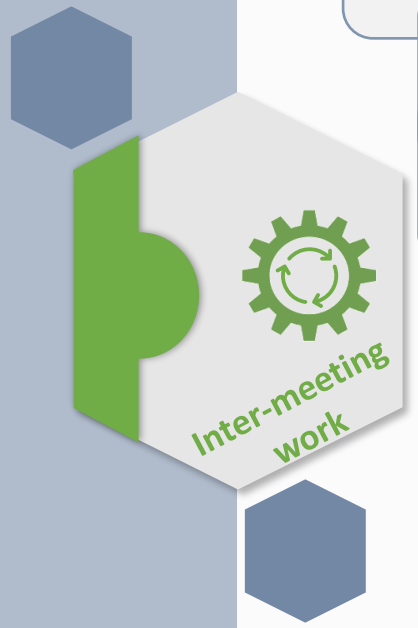
Thank you!

ITU – Radiocommunication Bureau

Questions to brsgd@itu.int.

Work between meetings

How inter-meeting work is conducted



Rapporteurs

Experts appointed by Study Groups or Working Parties for preliminary studies

Rapporteur Groups

Established by an SG, WP or TG to handle urgent or specific issues that require analysis

Correspondence

Similar to a Rapporteur Group but work via correspondence only

Intersector Groups

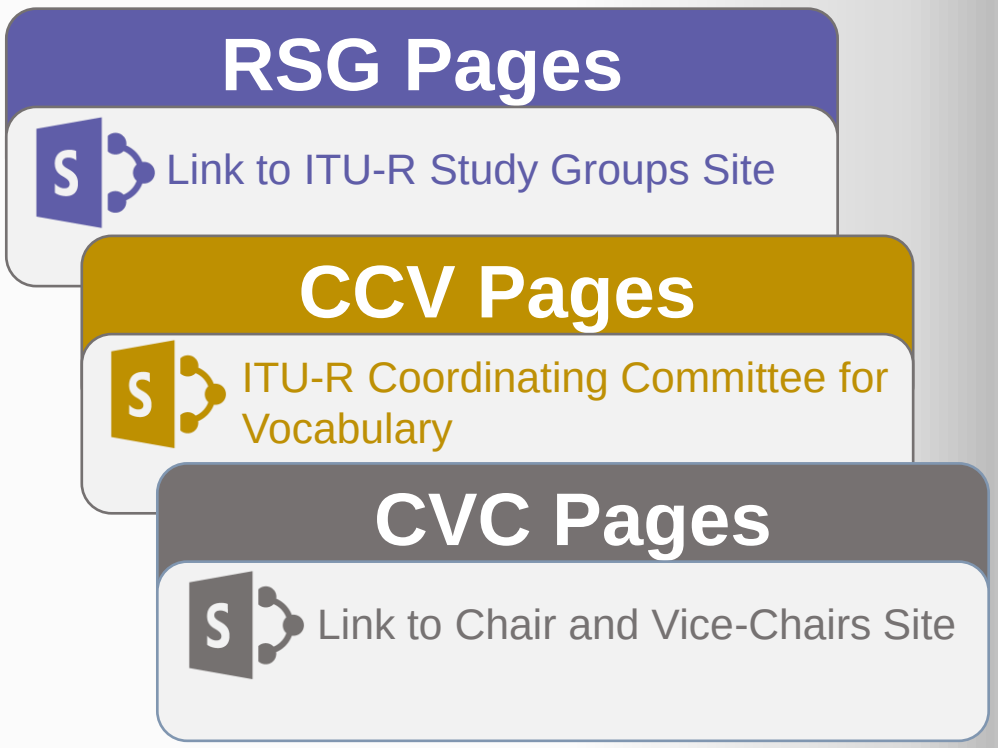
Established between two or more Sectors to carry out complementary work

Relevant Resolution ITU-R 1-8 references

- §A1.3.2.6 Appointing a Rapporteur
- §A1.3.2.7 Establishing a Rapporteur Group (RG)
- §A1.3.2.8 Establishing a Joint Rapporteur Group (JRG)
- §A1.3.2.9 Establishing a Correspondence Group (CG)
- §A1.3.2.10 Establishing a Joint Correspondence Group (JCG)
- §A1.6.1.3 Intersector Group Work
  - Intersector Coordination Group (ICG)
  - Intersector Rapporteur Group (IRG)

SharePoint

Informal documents



Scope

- The RSG meetings SharePoint site provides "Share Folders" for informal document exchange amongst participants;
- Study Groups and Working Parties can also setup areas for Rapporteurs, Rapporteur Groups and Correspondence Groups to use between meetings;
- Links to other ITU-R documents and resources are available as “Quick Links” on each page.

WRS/RRS cycle 2015-2019

Regional Radio Seminars (WRS):

Eleven RRS were conducted, with more than 1 000 participants from over 130 countries

- **Sub-Saharan Africa** (2, E&F): Eastern-Southern Africa: South Africa; Western-Central Africa: Senegal
- **Americas** (3) : Caribbean (E): Trinidad & Tobago; South America (S): Peru; Central America (S): Costa Rica
- **Arab States** (1, A): Oman
- **Asia & Pacific** (3, E): Pacific: Samoa; Southern-Western Asia: Cambodia; Eastern-Central Asia: Bhutan
- **CIS** (1, R): Uzbekistan
- **Eastern Europe** (1, E): Albania

World Radio Seminars (WRS):

Two WRSs were conducted and Geneva, in the 6 official UN languages.
WRS-16 and WRS-18 gathered more than 900 participants from over 110 countries

WRS/RRS 2015-2019 cycle:

- 11 RRSs and 2 WRS
- Around 2 000 participants from over 180 countries

BR provided more than 100 partial fellowships for RRS and over 60 full fellowships for WRS (one per administration for eligible countries).

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