

ITU WORKSHOP

Activities of ITU-R Study Group 3 on radiowave propagation

Academia in ITU

EuCAP 2024, Glasgow

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The International Telecommunication Union (ITU)

is the **United Nations Specialized Agency** for

Information and Communication Technologies (ICTs).

An organization based on **public-private**

partnership with **193 Member States** and over 900

members from industry, international and regional

organizations and academia.



- **“Scientific research is mission-critical when it comes to connecting the world. ITU nurtures new knowledge, breaks ground, and creates standards and regulations our increasingly digital world depends on. Your expertise, knowledge and research are invaluable to our work.**
- **Join ITU in building a more innovative and inclusive digital future.”**



Smart sustainable cities

Bridging the gender divide

Digital Inclusion

Artificial Intelligence

High altitude platform systems (HAPS)

Autonomous Driving

Digital Transformation

CubeSat

Digital Finance

5G

Broadband

Internet of Things (IoT)

Non-geostationary satellite systems

Earth stations in motion (ESIM)

mHealth

3D TV

Satellite constellation

Digital Fiat Currency

Digital Broadcasting



BENEFITS



Network with 193 Member States, over 900 members from industry, international and regional organizations and academia.



Contribute to international standards (including your research/patented tech).

Contribute to development of best practices in policy-regulatory environment & ITU Recommendations

Contribute to ITU publications (ex: ITU Journal) & ITU Research Projects (ex: Equals, Research Agenda with Universities)



Have representative(s) appointed as rapporteurs, associate rapporteurs & co-rapporteurs (ITU-T only), vice-rapporteurs (ITU-D only)



Increase your technical Knowledge through ITU's Capacity Building Activities (ITU Academy)

Access training, specialized seminars and courses

Share your expertise & partner to develop and deliver capacity building activities



Raise the profile of your institution at the international level

Get your contribution acknowledged and recognized internationally

Promote and share your ideas among some 170 Academic institutions through monthly newsletter



Get access to ITU Study Group meetings, their subgroups and documents (TIES access)

Sectoral Conferences and Assemblies (RA, WTSA, WTDC) & documents

Sector Advisory Groups and their subgroups (RAG, TDAG, TSAG) & documents

Other events, workshops and seminars



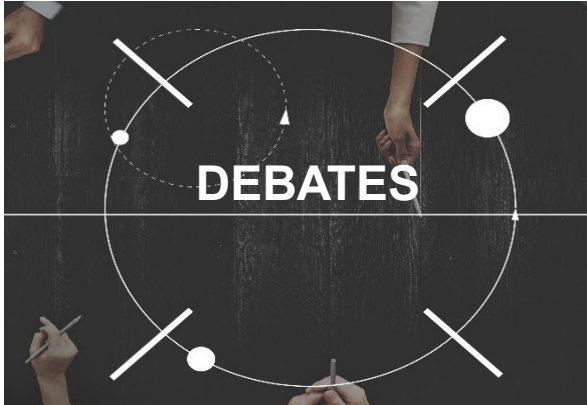
Become a partner for ITU activities

Develop proposals for collaboration with ITU members

Prepare Study Group contributions in collaboration with other stakeholders



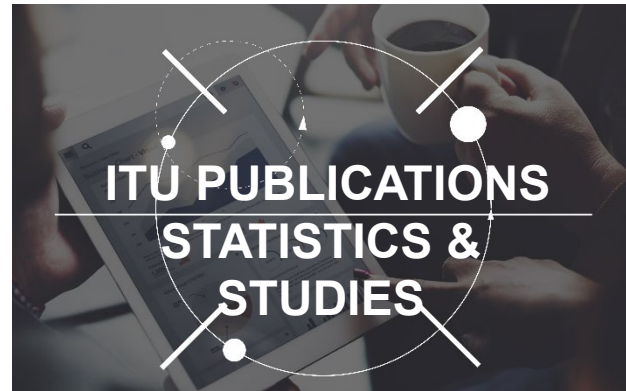
Invite ITU experts to contribute to your programmes (seminars, events and other opportunities)



Engage in global and regional debates

Speak at ITU events WSIS Forum, ITU Kaleidoscope Academic Conference, Workshops, webinars and other events

Participate in public online consultations



Get free access to ITU publications available in digital format including databases (PP Resolution 66).



Organize student visits to ITU

Organize Girls in ICTs Day

Join Coding Bootcamps

Participate in Young ICT Leaders Programme & Hackathons

Access the ITU database for Youth Employment and Entrepreneurship

ITU Journal

*Future and evolving
technologies*

FREE | FAST | FOR ALL





ITU ACADEMIA

COMMUNITY

Academia participation

+170 universities and research centers in **50+** countries



Several top renowned universities are ITU Academia members

The complete list of ITU Academia members is available [here](#)



ITU
STUDY GROUPS

Each Sector of ITU has a number of Study Groups related to the sectors' **specific field**. Academia has the opportunity to contribute their ideas and expertise on important topics through **19 Study Groups**.

Key themes of Study Groups include:

- Policy and Regulatory Reform
- Big Data
- Smart/Sustainable Cities
- Cybersecurity
- E-waste
- Connected car
- Spectrum Management
- Rural Connectivity
- Climate Change
- Economics of Roaming
- Disaster Relief
- Digital Financial Inclusion
- Video technologies
- Accessibility
- Mobile communications
- Broadcasting communications
- Satellite systems
- Radio wave propagation
- Radiodetermination systems
- Earth exploration, meteorological aids, space research
- Amateur radio, Radio astronomy

Radiocommunication:

Manages the radio-frequency spectrum and satellite orbits

6 Study Groups dealing with **191 Questions**

Standardization:

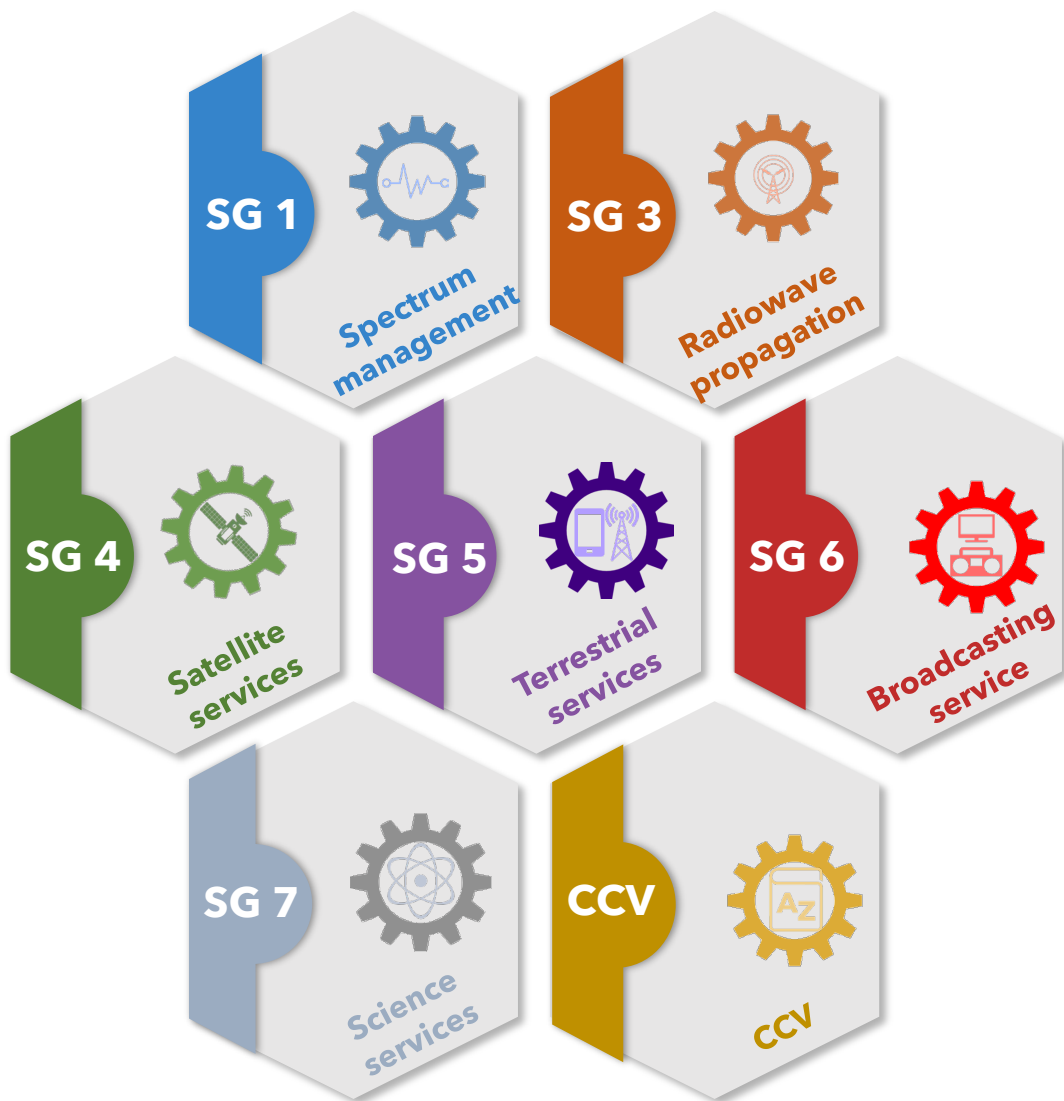
Produces **standards** and defines **tariff principles** for international telecommunication services

11 Study Groups dealing with **155 Questions**

Development:

Facilitates the **creation, development and improvement** of telecommunication and ICT

2 Study Groups dealing with **14 Questions**



SG 1

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

SG 3

- [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

SG 4

- [WP 4A](#) - **Efficient orbit/satellite utilization** for **FSS and BSS**
- [WP 4B](#) - **Systems, air interfaces, performance** and **availability objectives** for **FSS, BSS and MSS** (incl. IP-based applications and SNG)
- [WP 4C](#) - **Efficient orbit/satellite utilization** for **MSS and RDSS**

SG 5

- [WP 5A](#) - **Land mobile > 30 MHz (excl. IMT), fixed WAS** in the **FS, amateur & amateur-satellite services**
- [WP 5B](#) - **Maritime** (incl. GMDSS) and **aeronautical** mobile services & **radiodetermination**
- [WP 5C](#) - **HF and other systems < 30 MHz** 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**

SG 7

- [WP 7A](#) - **Time signals** and **frequency standard emissions**
- [WP 7B](#) - Space radiocommunication applications: **space operation, space research, Earth exploration, meteorological** satellite services
- [WP 7C](#) - **Remote sensing** systems (active and passive): **Earth exploration-satellite, MetAids, space research services** (incl. planetary sensors)
- [WP 7D](#) - **Radio astronomy**





WP 3J

Propagation fundamentals
Chair: Carlo Riva

WP 3K

Point-to-area propagation
Chair: Paul McKenna

WP 3L




Ionospheric propagation and radio noise
Chair: Angelo Canavitsas (Acting)

WP 3M

Point-to-point and Earth-space propagation
Chair: Richard Rudd (Acting)

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.

 SG 3 Chair: Clare Allen
 Counsellor: David Botha
 [SG 3 website](#)





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CHF 1'987

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<https://www.itu.int/hub/membership/become-a-member/application/>