

## **TSDSI Induction Program**

**Global standards landscape: ITU-T**

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# Introduction (1/3)

**The International Telecommunication Union (ITU) is the United Nations specialized agency for information and communication technologies – ICTs.**

Founded in 1865 to facilitate international connectivity in communications networks, we allocate global radio spectrum and satellite orbits, develop the technical standards that ensure networks and technologies seamlessly interconnect, and strive to improve access to ICTs to underserved communities worldwide.

**ITU's global membership includes 193 Member States as well as some 900 companies, universities, and international and regional organizations.**

Ref: <https://www.itu.int/>

# Introduction (2/3)

The ITU Radiocommunication Sector (ITU-R)

The 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.

Ref: <https://www.itu.int/en/ITU-R/Pages/default.aspx>

# Introduction (2/3)

## ITU Telecommunication Standardization Sector (ITU-T)

The [Study Groups](#) of ITU's Telecommunication Standardization Sector (ITU-T) assemble experts from around the world to develop international standards known as [ITU-T Recommendations](#) which act as defining elements in the global infrastructure of information and communication technologies (ICTs).

Ref: <https://www.itu.int/en/ITU-T/Pages/default.aspx>

# Introduction (3/3)

## ITU Telecommunication Development Sector

The Telecommunication Development Sector (ITU-D) works to close the digital divide and drive digital transformation to leverage the power of ICTs for economic prosperity, job creation, digital skills development, gender equality, diversity, a sustainable and circular economy, and for saving lives. Its work prioritizes those most in need- from people living in the world's Least Developed Countries to marginalized communities everywhere.

Ref: <https://www.itu.int/en/ITU-D/Pages/About.aspx>

# Groups in ITU-T

## TSAG

TSAG acts as an advisory body to the study groups, membership and staff of ITU-T. It is responsible for working procedures and the organization of the ITU-T work programme.

## Study Groups

Technical groups in which representatives of the ITU-T membership develop Recommendations (standards) applicable to various fields of information and communications technologies (ICTs).

## Regional Groups

Within ITU-T Study Groups, regional groups aim to ensure that ITU-T Recommendations address the needs of all the world's regions.

## Focus Groups

Groups formed in response to immediate ICT standardization demands; open to organizations outside ITU's membership, and afforded great flexibility in their chosen deliverables and working methods.

# World Telecommunication Standardization Assembly (WTSA-20)

The **World Telecommunication Standardization Assembly** defines general policy and adopts working methods and procedures for ITU-T. The duties and functions of the World Telecommunication Standardization Assembly are laid down in Article 18 of the ITU Constitution and Article 13 of the ITU Convention.

**The World Telecommunication Standardization Assembly is held every four years and defines the next period of study for ITU-T. WTSA-20 is planned to take place in Hyderabad, India, 1 to 9 March 2022 preceded by the Global Standards Symposium on 28 February 2022.**

<https://www.itu.int/en/ITU-T/wtsa20/Pages/default.aspx>



## TSDSI Focus Group for WTSA-2020

- WTSA-20 is planned to take place in Hyderabad, India, 1 to 9 March 2022 preceded by the Global Standards Symposium on 28 February 2022. A total of 7 resolutions were prepared by the members which were discussed by the TSDSI Focus Group in these meetings .
- Five (5) resolutions were discussed multiple rounds and finalised by the Focus Group: Resolution – 55, 89, 72, 98 & New Resolution
- 4<sup>th</sup> Virtual meeting of the APT WTSA preparatory group scheduled from 16 to 20<sup>th</sup> Nov, 2020: presented updates on these 2 proposals:
  - [APT WTSA20-4/INP-31](#) : on "Enabling open and interoperable resources for equitable access to AI/ML technology via networks AI / ML". A revised candidate draft PACP (TMP-23) was prepared by offline discussion among relevant members and reviewed. After discussion, WG2 reached no consensus on the draft.
  - [APT WTSA20-4/INP-34](#): "Promoting gender equality in ITU Telecommunication Standardization Sector activities". Included in [APT WTSA20-4/OUT-04](#). Plenary adopted the PACP: Proposed modification to Resolution 55 "Promoting gender equality in ITU Telecommunication Standardization Sector activities" (Document: APT WTSA20-4/OUT-04).

**Lessons learnt: Need continuous engagement with members and stakeholders on WTSA Resolutions, need multi-country support from various member states, should work for consensus on Resolutions, balance technical and non-technical discussions on various topics of interest.**



1.	Resolution 89	Promoting the use of information and communication technologies to bridge the financial inclusion gap
2.	Resolution 70	Telecommunication/information and communication technology accessibility for persons with disabilities
3.	Resolution 72	Measurement and assessment concerns related to human exposure to electromagnetic fields
4.	Resolution 98	Enhancing the standardization of Internet of things and smart cities and communities for global development
5.	Resolution 44	Bridging the standardization gap between developing and developed countries
6.	Resolution 55	Promoting gender equality in ITU Telecommunication Standardization Sector activities
7.	New Resolution on AI/ML	Enabling open and interoperable resources for equitable access to AI/ML technology via networks

# TSDSI interest areas and opportunities for members

	Topic of interest	Relevant Study Groups of ITU
1	Future networks, LMLC, TSDSI-RIT, 6G	ITU-R SG5
2	Transport and OTN technologies	ITU-T SG15
3	Accessibility in future networks	ITU-T (SG9, SG16, SG13)
4	Financial Inclusion	ITU-T (SG 9, SG13, SG17, TSAG)
5	Interoperable Services @ Edge Cloud	ITU-T (SG13, SG11)
6	Security Standards	ITU-T (SG16, SG13 and SG17)
7	Standards for Drones Skyway	ITU-T SG13
8	Signal processing + AI/ML	ITU-T SG11, SG9, SG16. SG12, SG13.
9	Autonomous driving	ITU-T (SG 16, SG13)

# TSDSI interest areas and opportunities for members

## TSDSI participation in ITU-R SG5:

- TSDSI has been actively participating in WP5D from last 4 years.
- Since 2016, TSDSI has been pursuing (ed) the following two big proposals
- Low-Mobility-Large Cell (**LMLC**) which got incorporated in IMT2020 requirements
- TSDSI Radio interface technology (**TSDSI-RIT**) is now one of the two technologies that is ratified by ITU as IMT2020 technology

## TSDSI participation in ITU-T SG15:

1. Coordinated the development of CPRI Fronthaul Transport.
2. New PT (Payload Type) for India fork to the OTN, would need to LS ITU-T (CPRI FH standard is pending for national standardization at DOT/TEC)

# TSDSI interest areas and opportunities for members

## Opportunities with ITU-T (SG9, SG16, SG13)

- Co-chair the [Intersector Rapporteur Group Audiovisual Media Accessibility](#) and Rapporteur of Q11/9 on accessibility at [Study Group 9](#)- Broadcast and Cable TV.
- Proposed common user profile format (CUP) for personalizing broadcast media for people with different range of abilities along with colleagues at TSDSI, EBU, BBC, NHK and other broadcasting corporations.

### **Current progress:**

- 1) ITU-T Q11/9 e-meeting took place on 26 January 2021
- 2) Definitions of accessibility being discussed.
- 3) Use cases for Common user profile for enabling autonomy were discussed separately with Prof. Pradipta.

### 2. [NIP 239 - Common user profile to promote accessibility in audio visual media](#)

ITU-T Meetings: FG AN (parent=SG13) (April 13-16), SG13 (05 July- 16 July), SG13 (29 Nov-10 Dec), SG9 (April)

# TSDSI interest areas and opportunities for members

## Opportunities with ITU-T (SG 9, SG13, SG17, TSAG)

- FIGI (Financial Inclusion Global Initiative) is launched by International Telecommunication Union (ITU) and the Committee on Payments and Market Infrastructures (CPMI), with support from the Bill & Melinda Gates Foundation
- Focus areas are security of information and communication technology (ICT) infrastructure and trust in digital financial services; digital IDs for financial services; and acceptance and use of e-payments by micro and small-scale merchants and their customers.
- **ITU-T: a contribution titled "Use cases for Autonomous Networks" from IDRBT was presented to the ITU-T focus group on Autonomous networks.**

## Opportunities with ITU-T (SG13, SG11)

- CCICI Cloud interop Report is published – Services on distributed cloud is analysed as a use case.
- WTSA Resolution proposal with specific focus on service interoperability was presented to TSDSI.
- ITU-T Challenge is setting up interoperable Tools testbed instance in Geneva.

### **1) Study of cloud interoperability for service automation using open service broker under study.**

**ITU-T Meetings: Joint Q16/11 & ETSI TC INT Rapporteur Group Meeting (April 22, July 07-july 16), SG11 (01 Dec)**

# TSDSI interest areas and opportunities for members

Opportunities with ITU-T (SG16, SG13 and SG17)

## Current status:

- Special Interest Group (SIG) formed under SGSS in TSDSI.
  - Industry Support – Applications, Communication, Infrastructure – CCT, DSPWorks, HP, Cisco, TCS, Sooktha.
  - Government Invitees – DoT, NSCS, TEC, MeitY.
  - Comprehensive Privacy and Data Protection study – aligned with NDCP 2018, PDP 2019, and ITSAR.
  - Draft first report ready and under review.
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- ITU-T FG AI4H Ad hoc Group on “digital technologies for COVID health emergency” formed under ITU-T SG16 and WHO.
  - The new ETSI Industry Specification Group “[Europe for Privacy-Preserving Pandemic Protection](#)” (ISG E4P) to provide a standardization framework that will enable developers to build interoperable mobile apps for proximity detection and anonymous identification, whilst preserving users’ privacy and complying with relevant data protection regulation.
  - Special Interest Group (SIG) formed under SGSS in TSDSI with industry support – DSPWorks, CCT, Sooktha, TCS, Saankhya and Government invitees – MeitY, TEC, NIC, MoH.

# TSDSI interest areas and opportunities for members

## Leading Standards development in Signal processing + AI/ML in future networks

### Current status:

- IIT/D hosted the global round of ITU AI/ML in 5G Challenge (2020).
- Involved in editing and presenting of documents for ITU-T FG ML5G.
- With deep expertise in 5G and signal processing, well poised to lead AI/ML in future networks.
- On ITU side, SG11, SG9, SG16, SG12, are all starting (or started) usecases study with AI/ML in LS with SG13.

ITU AI/ML in 5G Challenge was supported by close to 30 webinars which accompanied the Challenge received over 10'000 views (live & replay; <https://aiforgood.itu.int/ai-ml-in-5g-challenge/>) with leading researchers around the world, round-table discussions with participants and experts, and open source and open data.



one of the most innovative solutions came from the collaborative team from Indian Institute of Science(IISc) and EURECOM. The solution was titled “A Multilevel-Greedy and Bayesian Compressive Channel Estimator for Frequency-Selective Hybrid mmWave MIMO Systems”. The details can be found here: [https://github.com/ITU-AI-ML-in-5G-Challenge/ITU-ML5G-PS-025-Learned\\_Chester](https://github.com/ITU-AI-ML-in-5G-Challenge/ITU-ML5G-PS-025-Learned_Chester)

**Thank You**

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