A brief introduction to

ITU, ITU-T, and Study Group 12

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ITU Telecommunication Standardization Bureau
OUTLINE

• About ITU
• About ITU-T
• About ITU-T Study Group 12 on Performance, QoS and QoE
Who are we?
The International Telecommunication Union (ITU) is the United Nations specialized agency for information and communication technologies (ICTs).

Promoting international collaboration for a connected world.
Who are we?

**Geographic Footprint:**

760 staff, from 80 countries
MEMBERSHIP

Our members
Our members

In Numbers

193 MEMBER STATES
+800 PRIVATE SECTOR ORGANIZATIONS
+150 ACADEMIA
Meet the sectors

Three Sectors

ITU Radiocommunication
Coordinating radio-frequency spectrum and assigning orbital slots for satellites

ITU Standardization
Establishing international standards

ITU Development
Bridging the digital divide

‘Committed to Connecting the World’
Global management of radio-frequency spectrum and satellite orbits

Ensures equitable and efficient use of radio-frequency spectrum to accommodate huge growth in demand for spectrum

ITU-R coordination of orbital slots prevents radio interference and malfunctioning of satellite services
Meet the sectors

ITU-R

MAJOR ACHIEVEMENTS

IMT-2000 and IMT-Advanced technical frameworks underpin mobile 3G and 4G networks, focus on IMT-2020 ‘5G’

Recommendations on 3DTV, Ultra High Definition TV (UHDTV) standards

Excellent track record in maintaining harmonious satellite coordination
Meet the sectors

ITU-D

KEY ROLE

Spread equitable and affordable access to telecommunications to help stimulate social and economic development

Build capacity in the application of advanced ICTs within enabling policy and regulatory frameworks

Help to ensure that people everywhere are empowered to reap the benefits that connectivity delivers
Meet the sectors

ITU-D

MAJOR ACHIEVEMENTS

Enhancing cybersecurity in LDCs – CIRT programme

Helps bridge the gender divide and has equipped over 1m women with digital literacy skills
We develop international standards (ITU Recommendations) that enable the interconnection and interoperability of ICT networks and devices.

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

STANDARDS enable global communications by ensuring ICT networks and devices speak the same language globally.
Meet the sectors
ITU-T

MAJOR ACHIEVEMENTS

PKI
Public-key infrastructure, central to e-commerce

G.fast
New broadband standard designed to deliver access speeds of up to 1Gbit/s over existing telephone wires

H.264/MPEG-4
The primetime Emmy award winning video codec and its successor, H.265

Country codes
ADSL & VDSL
**Meet the sectors**

**ITU-T**

**STRUCTURE**

<table>
<thead>
<tr>
<th>Study Group</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG2</td>
<td>Operational aspects</td>
</tr>
<tr>
<td>SG3</td>
<td>Economic and policy issues</td>
</tr>
<tr>
<td>SG5</td>
<td>Environment and circular economy</td>
</tr>
<tr>
<td>SG9</td>
<td>Broadband cable and TV</td>
</tr>
<tr>
<td>SG11</td>
<td>Protocols and test specifications</td>
</tr>
<tr>
<td><strong>SG12</strong></td>
<td><strong>Performance, QoS and QoE</strong></td>
</tr>
<tr>
<td>SG13</td>
<td>Future networks (&amp; cloud)</td>
</tr>
<tr>
<td>SG15</td>
<td>Transport, Access and Home</td>
</tr>
<tr>
<td>SG16</td>
<td>Multimedia</td>
</tr>
<tr>
<td>SG17</td>
<td>Security</td>
</tr>
<tr>
<td>SG20</td>
<td>IoT, smart cities &amp; communities</td>
</tr>
</tbody>
</table>
**Meet the sectors**

**ITU-T**

**STRUCTURE**

<table>
<thead>
<tr>
<th>Focus Group</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>FG DLT</td>
<td>Application of Distributed Ledger Technology</td>
</tr>
<tr>
<td>FG DFC</td>
<td>Digital Currency including Digital Fiat Currency</td>
</tr>
<tr>
<td>FG DPM</td>
<td>Data Processing and Management to support IoT and Smart Cities &amp; Communities</td>
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<tr>
<td>FG ML5G</td>
<td>Machine Learning for Future Networks including 5G</td>
</tr>
</tbody>
</table>

*Open to non-members!*
Performance, QoS and QoE

- Full spectrum of terminals, networks and services ranging from speech over fixed circuit-based networks to multimedia applications over networks that are mobile and packet based

- Operational aspects of performance, QoS and QoE end-to-end quality aspects of interoperability development of multimedia quality assessment methodologies, both subjective and objective

Lead study group on

- Quality of service and quality of experience
- Driver distraction and voice aspects of car communications
- Quality assessment of video communications and applications
**STUDY GROUP 12**

**STRUCTURE**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Title</th>
</tr>
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<tbody>
<tr>
<td>PLEN</td>
<td>Plenary</td>
</tr>
<tr>
<td>WP1/12</td>
<td>Terminals and multimedia subjective assessment</td>
</tr>
<tr>
<td>WP2/12</td>
<td>Objective models and tools for multimedia quality</td>
</tr>
<tr>
<td>WP3/12</td>
<td>Multimedia QoS and QoE</td>
</tr>
<tr>
<td>SG12RG-AFR</td>
<td>ITU-T SG12 Regional Group on QoS for the Africa Region</td>
</tr>
<tr>
<td>QSDG</td>
<td>Quality of Service Development Group</td>
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<tr>
<td>IRG-AVQA</td>
<td>ITU Intersector Rapporteur Group Audiovisual Quality Assessment</td>
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<td>Kwame BAAH-ACHEAMFUOR</td>
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Meet the sectors

ITU-T

STUDY GROUP 12
RECENT RESULTS

Establishing QoS frameworks
• **E.802**: Framework and methodologies for the determination and application of QoS parameters
• **E.804**: QoS aspects for popular services in mobile networks
• **E.Sup9**: Guidelines on regulatory aspects of QoS

Measuring QoS and performance in IP networks
• **Y.1540**: IP packet transfer and availability performance parameters
• **Y.1545**: Roadmap for the QoS of interconnected IP based networks
• **Y.1545.1**: Framework for monitoring the QoS of IP network services
• **G.Sup61**: ITU-T G.1020 - Supplement on IP aware QoS management

Multimedia QoS and QoE
• **G.1028**: End-to-end QoS for voice over 4G mobile networks (VoLTE)
• **G.1032**: Influence factors on gaming QoE
• **G.1071**: Opinion model for network planning of video and audio streaming applications
• **G.1080**: QoE requirements for IPTV services

All ITU-T Recommendations can be downloaded free of charge at https://itu.int/ITU-T/recommendations/index_sg.aspx?sg=12
Meet the sectors

ITU-T

STUDY GROUP 12
SELECTED OPEN WORK ITEMS

5G, SDN, NFV

- **Y.cvms**: Considerations for Realizing Virtual Measurement Systems
- **G.IMT2020**: QoS Framework for IMT 2020

Assessing media quality through crowdsourcing

- **P.CROWD**: Crowdsourcing

Multimedia QoS and QoE

- **G.ViLTE**: End-to-end QoS for Video Telephony over 4G mobile networks (ViLTE)
- **G.ACP**: Guidelines regarding the minimum QoS and QoE threshold to be fulfilled during the use of alternative calling procedures

New work items to respond to **WTSA-16 Resolution 95** include:

- Strategies to establish quality measurement frameworks (**E.RQUAL**)
- Voice and data QoS KPI thresholds for mobile networks (**E.RQST**)
- Measurement scenarios, advanced measurement systems and sampling methodologies to monitor the QoS in mobile networks (**E.MTSM**)
- Statistical framework for QoE centric benchmarking scoring and ranking (**E.NetPerfRank**)
- The effect of SIM-boxing on QoS and QoE (**E.QSIMBox**)
- Assessment of the LTE circuit switched fall back - impact on QoE and QoS (**G.CSFB**)
Conclusions

• Study Group 12 is the key international venue to develop standards and discuss technical, operational, policy aspects of performance, QoS and QoE

• The work is undertaken jointly by operators, vendors, service providers, academia, and representatives from ITU’s 193 Member States

• Initiatives are underway to raise awareness on best practices and policies related to service quality

• Join Study Group 12 at its next meeting in Geneva, 1-10 May 2018!

SG12 web page: https://itu.int/go/tsg12