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| **Telecommunication DevelopmentAdvisory Group (TDAG)****24th Meeting, Geneva, 3-5 April 2019** | C:\Users\comas\AppData\Local\Temp\Rar$DRa0.735\jpg\ITU official logo_blue_RGB.jpg |
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|  | **Document TDAG-19/****9-E** |
|  | **21 January 2019** |
|  | **English only** |
| Chairman, Telecommunication Development Advisory Group (TDAG) |
| COORDINATION WITH THE OTHER SECTORS |
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| **Summary:**This document contains an outgoing liaison statement which has been sent to TSAG, ISCG and all ITU-T study groups.**Action required:**TDAG is invited to note this document. |

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| **Telecommunication Development Advisory Group (TDAG)** | C:\Users\comas\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\ITU official logo-blue.png |
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|  | **TDAG – LS 4** |
|  | **5 December 2018** |
|  | **English only** |
| Chairman, Telecommunication Development Advisory Group (TDAG) |
| coordination with the other Sectors |
| **For action to:** | TSAG |
| **For information to:** | ISCG, all ITU-T study groups |
| **Deadline:** | n/a |
|  |  |
| **Contact:** | Name/Organization/Entity: | Ms Roxanne McElvane Webber, Chairman TDAG |
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| **Contact:** | Name/Organization/Entity: | Mr Yushi Torigoe, Deputy to the Director, Telecommunication Development Bureau |
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| **Summary:**Annex 1 to this liaison statement presents updates to three tables linking ITU-D study Questions to related ITU-T work items and study Questions, and is submitted to TSAG for comment and any further action it may deem appropriate. |

First, this liaison statement is sent with sincere appreciation for the replies received from the TSAG and ITU-T study groups which continue to advance the inter-Sectoral cooperation initiated in 2017 by highlighting those ITU-D Study Group 1 and 2 (SG1 and 2) Questions that are of interest to the ITU-T study groups.

SG1, which covers the enabling environment to develop telecommunications/ICTs, and SG2, which covers ICT services and applications to promote sustainable development, held their first meetings in the 2018-2021 study period from 30 April to 11 May 2018. During this time, the participants reviewed and updated the tables prepared and sent by TSAG, entitled “Matching of ITU-D SG1 and SG2 Questions of interest to ITU-T study groups” (Documents [1/31](https://www.itu.int/md/D18-SG01-C-0031) and [2/44](https://www.itu.int/md/D18-SG02-C-0044)). The tables were again reviewed and updated by participants in the SG1 and 2 Rapporteur Group meetings held from 17 September to 11 October 2018, and currently take into account additional information sent by ITU-T study groups which respond to a May 2018 reply liaison statement (Documents [1/95](https://www.itu.int/md/D18-SG01-C-0095/) and [2/102](https://www.itu.int/md/D18-SG02-C-0102)).

Accordingly, please find in **Annex 1** the updated mapping tables:

**Table 1** – ITU-D Questions vis-à-vis ITU-T Questions, including relevant work items (constantly evolving).

**Table 2** – Matrix of ITU-D and ITU-T Questions.

**Table 3**– List of ITU-T Questions which could be related to ITU-D Questions even in the absence of relevant ITU-T work items.

I sincerely thank the Chairmen of ITU-D Study Groups 1 and 2 for updating this information so comprehensively to support coordination between the Sectors.

We anticipate that these “mapping tables” will be updated as work in the ITU-T and ITU-D study groups continues to evolve. To facilitate such revisions, the three tables are posted on the collaborative ITU-D study groups’ portal at the following [link](https://extranet.itu.int/itu-d/studygroups/Documents%20Repository/Forms/AllItems.aspx?RootFolder=%2Fitu-d%2Fstudygroups%2FDocuments%20Repository%2FLiving%20document%20with%20mapping%20of%20ITU-D%20Questions%20to%20ITU-T%20work&FolderCTID=0x0120007046B2935F68814DA99DF23B15DCA610&View=%7B48DF5ED2-4CBB-4903-B759-A8B45F4F0DD7%7D).

ITU-D and ITU-T study group Chairmen and Rapporteurs are therefore kindly invited to provide the updates that they deem necessary to further strengthen collaboration between the relevant groups within the sectors.

**Annex 1**

**Information provided by the Chairmen of ITU-D SGs 1 and 2**

**Questions of interest of ITU-T Study Groups
for inter-Sectoral coordination purposes**

**ITU-D Study Group 1 (Enabling environment for the development of telecommunications/ICTs) and ITU-D Study Group 2 (ICT services and applications for the promotion of sustainable development)** would like to thank ITU-T study groups for the collaboration on study Questions of mutual interests and the input received to further enhance the mapping tables that the groups have together prepared and updated.

Based on the initial tables provided in document [1/31](https://www.itu.int/md/D18-SG01-C-0031) (and [2/44](https://www.itu.int/md/D18-SG02-C-0044)) by TSAG, entitled “Matching of ITU-D SG1 and SG2 Questions of interest to ITU-T study groups”, which were reviewed and updated during the first meetings of the ITU-D SGs for the 2018-2021 study period (held from 30 April to 11 May 2018), and the additional information received from ITU-T study groups in response to the reply liaison statement sent in May 2018 (document [1/95](https://www.itu.int/md/D18-SG01-C-0095/) (and [2/102](https://www.itu.int/md/D18-SG02-C-0102))), the tables were further reviewed and updated by the ITU-D SG1 and 2 Rapporteur Groups which met from 17 September to 11 October 2018.

This liaison statement shares the updated mapping tables as follows for your consideration:

**Table 1** – ITU-D Questions vis-à-vis ITU-T Questions, including relevant work items (constantly evolving).

**Table 2** – Matrix of ITU-D and ITU-T Questions.

**Table 3**– List of ITU-T Questions which could be related to ITU-D Questions even in the absence of relevant ITU-T work items.

It is noted that these mapping tables are in need of constant updating as the work in the respective ITU-T and ITU-D study groups evolve. In this regard, a version of this document with the three mapping tables has been posted within the ITU-D study groups’ collaborative site at the following [link](https://extranet.itu.int/itu-d/studygroups/Documents%20Repository/Forms/AllItems.aspx?RootFolder=%2Fitu-d%2Fstudygroups%2FDocuments%20Repository%2FLiving%20document%20with%20mapping%20of%20ITU-D%20Questions%20to%20ITU-T%20work&FolderCTID=0x0120007046B2935F68814DA99DF23B15DCA610&View=%7B48DF5ED2-4CBB-4903-B759-A8B45F4F0DD7%7D).

ITU-D and ITU-T study group Chairmen and Rapporteurs are invited to update their specific information after each meeting as is deemed necessary to maintain an up-to-date document for the purpose of further strengthening collaboration between the relevant groups.

The groups are further informed that, with a view to work on strengthening collaboration across all ITU study groups, the ITU-D study groups have initiated a similar exercise with the ITU-R study groups with an initial mapping between the ITU-D SG1 and SG2 study Questions and the work undertaken in ITU-R working parties.

**Revised mapping of ITU-D SG 1 and SG 2 Questions of interest to work items
and Questions in ITU-T study groups**

(Changes received in liaison statements from ITU-T SG2, SG11, and SG13 are incorporated in revision marks. Additional changes put forward by the rapporteur groups are indicated in red and with revision marks showing the source of the information)

**Table 1 – ITU-D Questions vis-à-vis ITU-T Questions**

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| **ITU-D SG1** [Question 1/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Strategies and policies for the deployment of broadband in developing countries (Q1/1 team has reviewed and made a number of changes: added Q2/2, Q5/2, Q6/2, Q10/3, Q10/11, Q14/11, Q5/13, Q7/13, Q2/15, Q4/15, Q18/15 and work items, and removed reference to Q2/5, Q3/5, Q4/5, Q7/5) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/default.aspx) | [Q1/2](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q1.aspx): Application of numbering, naming, addressing and identification plans for fixed and mobile telecommunications services | [E.129](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13955) Presentation of national numbering plans;[E.101](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13953) Definitions of terms used for identifiers (names, numbers, addresses and other identifiers) for public telecommunication services and networks in the E-series Recommendations;[E.A-ENUM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13948) Principles and procedures for the administration of E.164 country codes for registration into the Domain Name System;[E.spn](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13947) Management and asssignment of global Service Provider Numbers (SPN);[E.164 Supplement 2](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13965) Management and Assignment of Global Service Provider Numbers (SPN);[M.rdm](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14194) Requirements for Data Management in the TMN |
| [Q2/2](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q2.aspx): Routing and interworking plan for fixed and mobile networks  |  |
| [Q5/2](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q5.aspx): Requirements, priorities and planning for telecommunication management and operation, administration and maintenance (OAM) Recommendations  | [M.somm (ex M.inomsa)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14196) Framework of smart operation, management and maintenance |
| [Q6/2](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q6.aspx): Management architecture and security |  |
| [SG3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/default.aspx) | [Q1/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q1.aspx): Development of charging and accounting/settlement mechanisms for international telecommunications services using the next-generation networks (NGNs), future networks, and any possible future development, including adaptation of existing D-series Recommendations to the evolving user needs | [D.Framework](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13509) Framework for ICT service delivery with the guaranteed QoS and requested bitrate on fixed & mobile data networks, for development of efficient economic mechanisms and models of interaction in the "operator-provider-user" chain |
| [Q3/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q3.aspx): Study of economic and policy factors relevant to the efficient provision of international telecommunication services | [D.Classification](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13520) Classification of telecommunications services in data networks;[D.GVR](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13505) Towards better governance of telecommunication regulation;[D.IoTpolicy](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14122) Guidelines on Tariff and regulatory aspects of Internet of Things (IoT);[D.Licensing](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13518) Mechanisms for pricing of licenses for mobile/broadband/fixed;[D.SpectrumShare](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13519) Shared use of spectrum and infrastructure;[Study\_ EPQoS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14611) Study of economic and policy factors relevant to the efficient provision of international telecommunication services |
| [Q6/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q6.aspx) : International Internet connectivity including relevant aspects of Internet protocol (IP) peering, regional traffic exchange points, cost of provision of services and impact of transition from Internet protocol version 4 (IPv4) to Internet protocol version 6 (IPv6) | [D. BGPE](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14114) Proposed new recommendation on International Internet Connectivity;[D.CompIIC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14115) Draft Recommendation ITU-T D.XX on Framework for the Competitive Provision of International Internet Connectivity (IIC);[STUDY\_IIC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13499) International Internet Connectivity, including IP peering, Regional Traffic Exchange Points, and cost of provision of services;[STUDY\_IPV6](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13498) Economic impact of transition from IPv4 to IPv6 |
| [Q10/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q10.aspx): Definition of relevant markets, competition policy and identification of operators with significant market power (SMP) as it relates to the economic aspects of the international telecommunication services and networks | [D.CrossBorderSMP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13523) Quantifying cross-border market power;[D.DynamicTariff](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13524) Impact of Dynamic Tariffing on Market Competitiveness |
| [Q13/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q13.aspx) : Study of Tariff, Charging Issues of Settlements Agreement of Trans-multi-country Terrestrial Telecommunication Cables | [D. ModelTTC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14609) Model of trans-multi-country terrestrial cable resource sharing |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [~~Q2/5~~](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q2.aspx)~~: Equipment resistibility and protective components~~ | [~~K.Suppl.8 (ex K.Suppl-5GResistibility)~~](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14142) ~~Resistibility analysis of 5G systems (Completed in 2017);~~[~~K.spdsafe~~](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14140) ~~Guidance on safety relating to the use of surge protective devices and surge protective components in customer building and access network~~ |
| [~~Q3/5~~](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q3.aspx)~~: Human exposure to electromagnetic fields (EMFs) from information and communication technologies (ICTs)~~ | [~~K.121~~](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14147) ~~Guidance on the environmental management for compliance with radio frequency EMF limits for radiocommunication base stations;~~[~~K.Supp-5G\_EMF\_Compliance~~](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14455) ~~Electromagnetic field (EMF) compliance assessments for 5G wireless networks~~ |
| [~~Q4/5~~](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q4.aspx)~~: Electromagnetic compatibility (EMC) issues arising in the telecommunication environment~~ | [~~K.Suppl.10 (ex K.Sup.emc-5G)~~](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14148) ~~Analysis of EMC aspects and definition of requirements for 5G mobile systems~~ |
| [Q6/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx): Achieving energy efficiency and smart energy | [L.5G\_powering](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14152) Sustainable power feeding solutions for 5G network;[LSTR.5GEE](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14151) Study on methods and metrics to evaluate energy efficiency for future 5G systems (Completed in 2017);[Suppl. RBSbest prac](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13916) Supplement to L.RBS Radio base station site best practices |
| [~~Q7/5~~](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q7.aspx)~~: Circular economy including e-waste~~ | [~~L.1000rev~~](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14157) ~~Universal power adapter and charger solution for mobile terminals and other hand-held ICT devices;~~ |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q1/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q1.aspx): Signalling and protocol architectures in emerging telecommunication environments and guidelines for implementations | [Q.3053 (ex Q.Arc-IPSMS)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13820) Signalling architecture and requirements for IP based short message service over ITU-T defined NGN;Q.DEN\_IMS: Signalling architecture of distributed ENUM networking for IMS |
| [Q2/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q2.aspx): Signalling requirements and protocols for services and applications in emerging telecommunication environments | [Q.3640 (ex Q.30xx\_VoLTE\_Interconnection\_FW)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13832) Framework of interconnection of VoLTE/ViLTE-based networks;[Q.IMS\_NGN\_Rel.11](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14165) IMS references to Release 11 for communication between IMS and NGN Networks in order to support the end-to-end service interoperability |
| [Q4/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q4.aspx): Protocols for control, management and orchestration of network resources | [Q.3405 (ex Q.IPv6ProBB)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13810) IPv6 protocol procedures for broadband services;[Q.SMO](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13823) Signalling requirements of Software-defined Metro Orchestration;[Q.SCC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14273) Signalling requirements and information model of Cooperative Controller;[Q.SD-DCI](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14613) Signalling requirements and information model of SD-DCI service;[Q.SD-WAN](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14054) Signalling Requirement for SD-WAN service[Q.SVDC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13841) Signalling requirements of the Sew interface for Virtual Data Center;Q Supplement 67 Framework of signalling for Software Defined Networking;[Q.3711 (ex Q.SBAN)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=9749) Signalling requirements for software-defined broadband access network; [Q.3316 (ex Q.CSO)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=9750) Interface and Signalling Requirements and Specification for Cross Stratum Optimization; [Q.3716 (ex Q.PVMapping)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13830) Signalling Requirements for Mapping between Physical and Virtual Networks;[Q.3740 (ex Q.SCO)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13834) Signalling Requirements for SDN and NFV based Central Office services |
| [Q5/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q5.aspx): Protocols and procedures supporting services provided by broadband network gateways | [Q.3715 (ex Q.BNG-DBoD)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13824) Signalling requirements for dynamic bandwidth adjustment on demand on broadband network gateway implemented by software-defined networking technologies;[Q.BNG-IAP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13845) Signalling requirements of IP address pool based on broadband network gateway by SDN technologies;[Q.BNG-CFS](https://www.itu.int/md/T17-SG11-180718-TD-GEN-0503) Signalling requirements for control and forwarding plane separation in vBNG;Q.BNG-PAC Procedures for vBNG acceleration with programmable acceleration card |
| [Q6/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q6.aspx): Protocols supporting control and management technologies for IMT-2020 | [Q.CE-APIMP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14462) Protocol for managing capability exposure APIs in IMT-2020 network;[Q.NS-LCMP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14274) Protocol for network slice lifecycle management;[Q.D2D-EECP](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=2623https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14463) Energy efficient D2D communication protocol for IMT 2020 network;Q.IMT2020-PFW Protocol Framework for IMT-2020 |
| [Q7/11](https://www.itu.int/ITU-T/workprog/wp_block.aspx?isn=4142): Signalling requirements and protocols for network attachment including mobility and resource management for future networks and IMT-2020 | [Q.3714 (ex Q.SAN-MIM)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13835) Signalling requirements of SDN-based access networks with media independent management capabilities;[Q.NEA-REQ](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13846) Signalling Requirements of NFV Entity Management for Network Attachment;[Q.IEC-REQ](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13846) Signalling requirements and architecture of intelligent edge computing;[Q.MEA-SRA](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=2623https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14275) Signalling requirement and architecture for media service entity attachment;[Q.QMP-TCA](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14464) QoS management protocol for time constraint applications over SDN |
| [Q8/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q8.aspx): Protocols supporting distributed content networking and information centric network (ICN) for future networks and IMT-2020, including end-to-end multi-party communications | [X.609.3 (ex X.mp2p-mssr)](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=13345) Managed P2P communications: Multimedia streaming signalling requirements;[X.609.4 (ex X.mp2p-mspp)](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=13493) Managed P2P communications: Multimedia streaming peer protocol;[X.609.5 (ex X.mp2p-msomp)](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=13494) Managed P2P communications: Multimedia streaming overlay management protocol;X.mp2p-cdsr Managed P2P communications: Content distribution signalling requirements;X.mp2p-cdpp Managed P2P communications: Content distribution peer protocol |
| [Q9/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q9.aspx): Service and networks benchmark testing, remote testing including Internet performance measurements | [Q.3961 (ex Q.TM\_Int\_sp\_test)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13819) Testing methodologies of Internet related performance measurements including e2e bit rate within the fixed and mobile operator's networks |
| [Q10/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q10.aspx): Testing of emerging IMT-2020 technologies | [Guideline-TEST\_UE/MS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14736) Guideline for general test procedure and specification for measurements of the LTE, 3G/2G user Equipment/mobile stations (UE/MS);[Q.SDN-CT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14466) Framework of SDN controller testing;[Q.SDN-OFT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14737) The compatibility testing of SDN-based equipment using OpenFlow protocol;[Q.vs-iop-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14605) Interoperability testing requirements of virtual switch |
| [Q14/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q14.aspx): Cloud interoperability testing  | [Q.vbng-iop-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14739) Interoperability testing requirements of virtual Broadband Network Gateway |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx)[QSDG](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/QSDG.aspx) | [Q2/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q2.aspx): Definitions, guides and frameworks related to quality of service/quality of experience (QoS/QoE) | [G.IMT2020](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13799) QoS Framework for IMT 2020;[HB-CoCa](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14117) Handbook on Country Case Studies;[HB-Guireg](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14120) Handbook providing guidance to regulators;[HB-QoS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14119) Handbook on Quality of Service (QoS);[HB-Recs](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14116) Handbook on SG12 Recommendations;[P.10/G.100](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14118) Vocabulary for performance, quality of service and quality of experience |
| [Q8/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q8.aspx): Virtualized deployment of recommended methods for network performance, QoS and QoE assessment | [Y.cvms](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14354) Considerations for Realizing Virtual Measurement Systems |
| [Q11/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q11.aspx): Performance considerations for interconnected networks | [G.ACP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14041) Guidelines regarding the minimum QoS and QoE threshold to be fulfilled during the use of alternative calling procedures;[G.ViLTE](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14038) End-to-end QoS for Video Telephony over 4G mobile networks; |
| [Q12/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q12.aspx): Operational aspects of telecommunication network service quality | [E.MTSM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14360) Measurement scenarios, advanced measurement systems and sampling methodologies to monitor the QoS in mobile networks;[E.QSIMBox](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14355) The effect of SIM-boxing on QoS and QoE;[E.RQUAL](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14043) Strategies to Establish Quality Measurement Frameworks |
| [Q13/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q13.aspx): QoE, QoS and performance requirements and assessment methods for multimedia) | [G.NCP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14361) QoE-based network capacity planning |
| [Q16/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q16.aspx): Framework for diagnostic functions | [E.FINAD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14037) Framework for Intelligent Network Analytics and Diagnostics |
| [SG13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/default.aspx) | [Q1/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q1.aspx): Innovative services scenarios, deployment models and migration issues based on Future Networks | [Handbook on IMT-2000 (2nd Edition)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13599) The Handbook of evolving IMT-2000 Systems |
| [Q2/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q2.aspx): Next-generation network (NGN) evolution with innovative technologies including software-defined networking (SDN) and network function virtualization (NFV) | [Technical Report on Network 2030](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14616) Network 2030 - beyond IMT-2020;[Y.2322 (ex Y.NGN-VCNMO-Arch)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13631) The functional architecture of VCNMO (Virtualized Control Network entities Management and Orchestration) in NGN evolution;[Y.2341 (ex Y. NGNe-authorized account messaging ser)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13616) Next Generation Network evolution - Requirements and capabilities for supporting authorized account messaging service;[Y.NGNe-BC-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14282) Scenarios and capability requirements of blockchain in next generation network evolution;[Y.NGNe-O-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14617) Functional architecture of orchestration in NGNe;[Y.NGNe-O-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14083) Requirements and capabilities of orchestration in NGNe |
| [Q5/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q5.aspx): Applying networks of future and innovation in developing countries | [Supp-Y.IMT2020-Awareness-UC&Migration](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14748) Trustworthy networking deployment architecture, mechanism, and procedure |
| [Q6/13](https://www.itu.int/ITU-T/workprog/wp_block.aspx?isn=4172): Quality of service (QoS) aspects including IMT-2020 networks | [Y.IMT2020-qos-fr](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14618) QoS support framework architecture for IMT-2020 networks;[Y.IMT2020-qos-req](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14740) QoS requirements for IMT-2020 network |
| [Q7/13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q7.aspx): Big data driven networking (bDDN) and Deep packet inspection (DPI) | [Y. bDDN-MNTMP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13647) Big data driven mobile network traffic management and planning[Y.bDDN-FunArch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14620) Functional architecture of big data driven networking;[Y.bDDN-req](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13637) Requirement of big data-driven networking[Y.2774 (ex Y.DpiReqFn)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13625) Functional requirements of deep packet inspection for future networks;[Y.Dpi-ArchFN (ex Y.DpiArchFn)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13624) Functional architecture of deep packet inspection for future networks |
| [Q20/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q20.aspx): IMT-2020: Network requirements and functional architecture | [Y.3100 (ex Y.IMT2020-terms)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14059) Terms and definitions for IMT-2020 network;[Y.3101 (ex Y.IMT2020-reqts)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14061) Requirements of IMT-2020 network;[Y.3102 (ex Y.IMT2020-frame)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14062) Framework of the IMT-2020 network;[Y.IMT2020-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14063) Architecture of IMT-2020 network;[Y.IMT2020-BM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14505) Business Models of IMT-2020 |
| [Q21/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q21.aspx): Network softwarization including software-defined networking, network slicing and orchestration | [Y.3100-series Supplement 44 (ex Suppl. To Y.IMT2020 series)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14093) Standardization and open source activities related to network softwarization of IMT-2020;[Y.3110 (ex Y.IMT2020-mgmt-req)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14096) IMT-2020 Network Management and Orchestration Requirements;[Y.3111 (ex Y.IMT2020-mgmt-frame)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14095) IMT-2020 Network Management and Orchestration Framework;[Y.amc (ex Y.amnsa)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13606) Requirements and Architectural Framework for Autonomic Management and Control of IMT-2020 Networks (Y.amc);[Y.3302 (ex Y.SDN-ARCH)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13615) Functional architecture of software-defined networking |
| [Q22/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q22.aspx): Upcoming network technologies for IMT-2020 and Future Networks | [Y.ICN-ReqN](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14479) Requirements of ICN naming and name resolution in IMT-2020;[Y.SuppICN-PoC-DaaS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14480) PoC for IoT Data as a Service using ICN in IMT-2020. |
| [Q23/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q23.aspx): Fixed-Mobile Convergence including IMT-2020 | [Y.2041 (ex Y.MC-PCM)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13612) Policy Control Mechanism in Multi-connection;[Y.3130 (ex Y.FMC-REQ)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13643) Requirements of IMT-2020 fixed mobile convergence;[Y.FMC-MM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14284) Mobility management for fixed mobile convergence in IMT-2020 networks;[Y.FMC-ReqMO](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14285) IMT-2020 FMC functional requirements for management and orchestration;[Y.Suppl.MM-SDN (ex Y.Sup.MMsdn-usecase)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13653) Supplement on use cases of mobility management over SDN[Y.FMC-EC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14742) Unified edge computing for supporting fixed mobile convergence in IMT-2020 networks [Y.FMC-ARCH](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14090) Functional architecture for supporting fixed mobile convergence in IMT-2020 networks |
| [SG15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx) | [Q2/15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q2.aspx): Optical systems for fibre access networks | [G.9806](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14546) Higher speed bidirectional single-fibre point to point optical access systems;[G.9807.2 (2017) Amd.1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14547)10 Gigabit-capable symmetrical passive optical networks (XG(S)-PON): Reach extension - Amendment 1;[G.hsp.50Gpmd](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14550) Higher Speed Passive Optical Networks: 50G PMD;[G.hsp.comTC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14549) Higher Speed Passive Optical Networks: Common Transmission Convergence layer;[G.hsp.req](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14548) Higher Speed Passive Optical Networks: Requirements;[G.hsp.TWDMpmd](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14551) Higher Speed Passive Optical Networks: TWDM PMD;[G.RoF](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13394) Radio over Fiber systems;[G.sup.5GP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14219) 5G wireless fronthaul requirements in a PON context;[G.RoF](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13394) Radio over Fiber systems;[G.mgfast-PHY (ex G.mgfast)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14267) Multi-Gigabit fast access to subscriber terminals (MGfast) – PHY;[G.mgfast-PSD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14552) Multi-Gigabit fast access to subscriber terminals (MGfast) - PSD |
| [Q4/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q4.aspx): Broadband access over metallic conductors |  |
| [Q11/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q11.aspx): Signal structures, interfaces, equipment functions, and interworking for optical transport networks | [G.ctn5g](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14633) Characteristics of transport networks to support IMT-2020/5G;[GSup.5gotn](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14632) Application of OTN to 5G Transport |
| [Q12/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q12.aspx): Transport network architectures | [GSTR-TN5G](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14234) Transport network support of IMT-2020/5G |
| [Q18/15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q18.aspx): Broadband in-premises networking | [G.hn2](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14270) Evolution of unified high-speed wire-line based home networking transceivers |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q13/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q13.aspx): Multimedia application platforms and end systems for IPTV | [H.721 (V3)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13317) IPTV terminal devices: Basic model;[H.722 (V2)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13328) IPTV terminal device: full-fledged model;[H.IPTV-AM.2](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13235) IPTV application event handling: Audience measurement for IPTV interactive services;[HSTP.IPTV-GUIDE.1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13319) IPTV service deployment scenarios in high-speed broadband era |
| [Q21/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q21.aspx): Multimedia framework, applications and services | [F.743.4 (ex F.VCDN-Reqs)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13288) Functional requirements for virtual content delivery networks |
| [SG17](https://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/default.aspx) | [Q2/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q2.aspx): Security architecture and framework | [X.1041 (ex X.voLTEsec-1)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13576) Security framework for voice-over-long-term-evolution (VoLTE) network operation;[X.SDSec](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14558) Guideline on Software-defined Security in SDN (Software-defined Networking)/NFV (Network Fuction Virtualization) Network;[X.srnv](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14379) Security Requirements of Network Virtualization;[X.sup30 (ex X.sup-sgmvno)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13543) Supplement 30 to ITU-T X-series Recommendations - ITU-T X.805 Security guidelines for mobile virtual network operators |
| [Q6/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q6.aspx): Security aspects of telecommunication services, networks and Internet of Things | [X.sdnsec-1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13551) Security services using the software-defined networking |
| [Q7/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q7.aspx): Secure application services | [X.1146 (ex X.websec-8)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13561) Secure protection guidelines for value-added services provided by telecommunication operators;[X.srfb](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13588) Security Requirements and Framework for Big Data Analytics in mobile Internet services |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals | [Y.IoT-NCM-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14106) Requirements and capabilities of network connectivity management in the Internet of Things |
| [Q3/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q3.aspx): Architectures, management, protocols and Quality of Service | [Supp-Y.IPv6-IoT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13695) IPv6 Potential for the Internet of Things and Smart Cities;[Y.IPv6RefModel](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13693) Reference model of IPv6 subnet addressing plan for Internet of things deployment;[Y.IPv6-suite](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13694) Reference Model of Protocol Suite for IPV6 interoperable Internet of Things Deployments;[Y.NGNe-IoT-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13661) Architecture of the Internet of Things based on NGNe |
| **ITU-D SG1** [Question 2/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Strategies, policies, regulations and methods of migration and adoption of digital broadcasting and implementation of new services(Q2/1 team has reviewed and made changes to SG16 mapping based on liaison statement received, Q21/16 and Q26/16 added) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q1/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q1.aspx): Transmission and delivery control of television and sound programme signal for contribution, primary distribution and secondary distribution | [J.382](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13991) Advanced digital downstream transmission systems for television, sound and data services for cable distribution;[J.docsis31-gen](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14177) Fourth Generation Transmission Systems for Interactive Cable Television Services - IP Cable Modems: General;[J.docsis31-phy](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14178) Fourth Generation Transmission Systems for Interactive Cable Television Services - IP Cable Modems: Physical Layer Specification |
| [Q2/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q2.aspx): Methods and practices for conditional access, protection against unauthorized copying and against unauthorized redistribution (‘redistribution control” for digital cable television distribution to the home) | [J.1020 (ex J.dmobile-sma)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13993) Service model and architecture of downloadable mobile multi-CA/DRM solutions for delivering CA/DRM client software to secondary device;[J.dcas-oneway](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14507) Downloadable Conditional Access System for One-Way TV Networks |
| [Q4/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q4.aspx): Guidelines for implementations and deployment of transmission of multichannel digital television signals over optical access networks | [J.dtc-distribution-req](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14182) Television Content Distribution Platforms: Requirements for Open Access and Signal Quality;[Sup-digTV](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13717) Installing a digital TV service for cable networks and relating Recommendations |
| [Q5/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q5.aspx): Software components application programming interfaces (APIs), frameworks and overall software architecture for advanced content distribution services within the scope of Study Group 9 | [J.207](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14018) Specification for integrated broadcast and broadband digital television application control framework;[J.acf-hrm](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13722) Harmonization of Integrated Broadcast-Broadband DTV application control framework;[J.stvos-spec](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14183) Specification for the architecture and functional requirement of smart TV operating system;[J.stvos-spec-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14508) The Architecture of Smart TV Operating System |
| [Q6/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q6.aspx): Functional requirements for residential gateway and set-top box for the reception of advanced content distribution services | [J.297](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14184) Requirements and functional specification of cable set top box for 4K ultra high definition television;[J.stb-cts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14185) Requirements and technical specifications of cable TV hybrid set-top box that has the compatibility with terrestrial and satellite TV transport |
| [Q7/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q7.aspx): Cable television delivery of digital services and applications that use Internet protocol (IP) and/or packet-based data over cable networks | [J.1106 (ex J.roip-req)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14031) Requirement for Radio over IP transmission system;[J.1107 (ex J.roip-arch)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14187) Architecture and specification for Radio over IP transmission systems;[J.roip-trans](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14509) Transmission specification for Radio over IP transmission system |
| [Q8/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q8.aspx): The Internet protocol (IP) enabled multimedia applications and services for cable television networks enabled by converged platforms | [J.qamip-req](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14032) Requirements on QAM to IP Conversion for IP Multi-Room/House Services |
| [Q10/9](https://www.itu.int/ITU-T/workprog/wp_block.aspx?isn=4136): Work programme, coordination and planning | [J.tda](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14504) Terms, definitions and acronyms for television and sound transmission and integrated broadband cable networks |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q2/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q2.aspx): Definitions, guides and frameworks related to QoS/QoE | [G.191 (V6)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13247) Software tools for speech and audio coding standardization;[P.10/G.100](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14118) Vocabulary for performance, quality of service and quality of experience |
| [Q13/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q13.aspx): QoE, QoS and performance requirements and assessment methods for multimedia | [G.IPTV-MP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13806) IPTV monitoring parameters |
| [Q18/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q18.aspx): Measurement and control of the end-to-end QoS for advanced TV technologies, from image acquisition to rendering, in contribution, primary distribution and secondary distribution networks | [J.q-uhd](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13719) Quality measurement methods for UHD services |
| [Q19/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q19.aspx): Objective and subjective methods for evaluating perceptual audiovisual quality in multimedia services | [P.911rev](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13721) Subjective audiovisual quality assessment methods for multimedia applications;[J.343-rev](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13724) Hybrid perceptual/bitstream models for objective video quality measurements |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q8/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q8.aspx): Immersive live experience systems and services | [H.ILE-SS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14087) Service scenario of ILE;[H.ILE-MMT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14190) Service configuration, media transport protocols, signalling information of MMT for Immersive Live Experience systems |
| [Q13/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q13.aspx): Multimedia application platforms and end systems for IPTV | [H.IPTV-AM.2](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13235) IPTV application event handling: Audience measurement for IPTV interactive services;[H.IPTV-PS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14755) Application event handling: Overall aspects of personalized IPTV service;[HSTP.IPTV-GUIDE.1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13319) IPTV service deployment scenarios in high-speed broadband era;[HSTP.IPTV-GUIDE.2](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14423) IPTV service parameters for new IPTV service providers;[H.721 (V3)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13317) IPTV terminal devices: Basic model;[H.722 (V2)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13328) IPTV terminal devices: full-fledged model;[H.IPTV-MDS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13257) IPTV Multiple Devices Service;[H.761 (V4)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14049) Nested context language (NCL) and Ginga-NCL;[HSTP.IPTV-HRM.2](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13238) Harmonization of MAFR series with multiple content sources. |
| [Q21/16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q21.aspx): Multimedia framework, applications and services | [F.CDN-Reqs](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14069) Use-cases and requirements for multimedia CDN;[H.MCDN](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14764) Functional architecture of multimedia content delivery network[H.OIMSArch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14699) Architecture for on-demand service based on interactive multimedia streaming |
| [Q26/16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx): Accessibility to multimedia systems and services | [H.702](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14772) Accessibility Profiles for IPTV Systems |
| **ITU-D SG1**[Question 3/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Emerging technologies, including cloud computing: m-services, and OTTs: Challenges and opportunities, economic and policy impact for developing countries(Q3/1 team has reviewed and made changes to Q18/13 and retained Y.3515, Y3516) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/default.aspx) | [Q5/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q5.aspx): Requirements, priorities and planning for telecommunication management and operation, administration and maintenance (OAM) Recommendations | [M.rrmctm](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14193) [M.3070/Y.3521](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=12714&lang=en): [Overview of end-to-end cloud computing management](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=12714);[M.3071](https://www.itu.int/ITU-T/recommendations/rec.aspx?id=13479&lang=en) [Cloud-based network management functional architecture](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13479);[M.3371](https://www.itu.int/ITU-T/recommendations/rec.aspx?id=13064&lang=en) [Requirements for service management in cloud-aware telecommunication management system](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13064);[M.3372](https://www.itu.int/ITU-T/recommendations/rec.aspx?id=13687&lang=en) (ex. [M.rrmctm](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14193)): Requirements for Resource Management in Cloud-aware Telecommunication Management System |
| [SG3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/default.aspx)[FG DFS](https://www.itu.int/en/ITU-T/focusgroups/dfs/Pages/default.aspx) | [Q9/3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q9.aspx)**:** Economic and regulatory impact of the Internet, convergence (services or infrastructure) and new services, such as over the top (OTT), on international telecommunication services and networks | [D.50Supp\_OTT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13500) OTTs in the context of IIC; [D.262 (ex D.OTT)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13503) Collaborative Framework for OTTs;[D.OTTBypass](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13522) OTT Bypass;[D.OTTMNO](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13521) Guidelines on OTT-MNO Partnerships;[STUDY\_Convergence](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14124) Study on the economic impact of convergence of technology and services and the role of the Regulator;[STUDY\_OTT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13504) Study on Economic Impact of OTTs |
| [Q11/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q11.aspx): Economic and policy aspects of big data and digital identity in international telecommunications services and networks | [Study\_bigdata](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14127) Technical Paper on economic and policy aspects of Big Data in international telecommunication services and networks |
| [Q12/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q12.aspx): Tariffs, Economic and Policy Issues Pertaining to Mobile Financial Services (MFS) | [D.263 (ex D.MFS)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14132) Competition in Mobile Financial Services;[D.AgentMFS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14128) Guidelines for Mobile Financial Service Agents;[D.EMoneyMFS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14130) Guidelines for e-money issuers;[D.MFSCM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14133) Mobile Financial Services Transaction Cost Model;[D.MFScoop](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14606) Guidelines for MOU between telecommunications regulators and central banks taking into account the Zambian experience and existing MOU |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q7/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q7.aspx): Circular economy including e-waste | [L.SEEQ](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14538) Effect for global ICT of the potential of selling Services instead of Equipment on the waste creation and environmental impacts |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q8/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q8.aspx): The Internet protocol (IP) enabled multimedia applications and services for cable television networks enabled by converged platforms | [J.qamip-req](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14032) Requirements on QAM to IP Conversion for IP Multi-Room/House Services |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q14/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/14/Pages/q11.aspx): Cloud interoperability testing | [Q.vs-iop-reqts](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14605): Interoperability testing requirements of virtual switch[Q.wa-iop](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13839): Cloud Interoperability testing about Web Application |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q13/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q13.aspx): QoE, QoS and performance requirements and assessment methods for multimedia | [G.DFS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14364) QoS and QoE Aspects of Digital Financial Services |
| [SG13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/default.aspx) | [Q5/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q5.aspx): Applying networks of future and innovation in developing countries | [Y.3500-series Supplement 46 (ex Supp-Y.Cloud Computing Scenarios for Developing Countries)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13620) Scenarios of Implementing Cloud Computing in networks of developing countries |
| [Q7/13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q7.aspx): Big data driven networking (bDDN) and deep packet inspection (DPI) | [Y.3650 (ex Y.bDDN-fr)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13629) Framework of big data driven networking;[Y. bDDN-MNTMP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13647) Big data driven mobile network traffic management and planning;[Y.bDDN-FunArch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14620) Functional architecture of big data driven networking;[Y.bDDN-req](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13637) Requirement of big data-driven networking;[Y.Sup-bDDN-usecase](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13638) Supplement for use cases and application scenarios of big data driven networking |
| [Q17/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q17.aspx): Requirements, ecosystem, and general capabilities for cloud computing and big data | [Y.BaaS-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14485) Cloud computing - Functional requirements for blockchain as a service;[Y.bdi-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14074) Big Data - Overview and functional requirements for data integration;[Y.bdm-sch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14075) Big data - Metadata framework and conceptual model;[Y.bdp-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13651) Big data - Requirements for data provenance;[Y.cccm-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13641) Cloud Computing - Requirements for Containers and Micro-services;[Y.ccdc-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13649) Distributed cloud overview and high-level requirements;[Y.ccpm-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13652) Cloud computing - Functional requirements of physical machine;[Y.MLaaS-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14484) Cloud computing - Functional requirements for machine learning as a service;[Y.sup.ccsr](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13650) Supplement on Cloud Computing Standardization Roadmap;Y.sup.bdsr2 Supplement on Big Data Standardization Roadmap |
| [Q18/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q18.aspx): Functional architecture for cloud computing and big data | [Y.dsf-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14623) Cloud computing - Functional architecture for data storage federation |
| [Q19/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q19.aspx): End-to-end Cloud computing management, cloud security and big data governance | [Y.3514](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13621)  Cloud computing - Trusted inter-cloud computing framework and requirements;[Y.BDDP-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14076) Big data - Overview and requirements for data preservation;[Y.CCICDM-Req](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13645) Cloud Computing - Requirements for Inter-Cloud Data Management;[Y.ccm-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14486) Cloud computing maturity requirements and framework[Y.cslm-metadata](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14077) Metadata framework for cloud service lifecycle management |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q21/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q21.aspx): Multimedia framework, applications and services | [F.CCVSReqs](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14413) Requirements for cloud computing in visual surveillance;[F.VSBD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14073) Requirements for big data application in visual surveillance system;[H.626.2 (ex H.CSVS-Arch)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13306) Architecture for cloud storage in visual surveillance;[H.VSCC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14070) Architecture for cloud computing in visual surveillance |
| [SG17](https://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/default.aspx) | [Q7/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q7.aspx): Secure application services | [X.srfb](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13588) Security Requirements and Framework for Big Data Analytics in mobile Internet services |
| [Q8/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q8.aspx): Cloud computing security | [X.1603 (ex X.dsms)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13562) Data security requirements for the monitoring service of cloud computing;[X.GSBDaaS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13591) Guidelines on security of Big Data as a Service;[X.sgBDIP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14567) Security Guidelines for Big Data infrastructure and platform;[X.sgtBD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14390) Security guidelines of lifecycle management for telecom Big Data;[X.SRIaaS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13578) Security requirements of public infrastructure as a service (IaaS) in cloud computing;[X.SRNaaS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13590) Security requirements of Network as a Service (NaaS) in cloud computing |
| **ITU-D SG1**[Question 4/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Economic policies and methods of determining the costs of services related to national telecommunication/ICT networks (Q4/1 team has reviewed and made no changes) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/default.aspx) | [Q1/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q1.aspx): Development of charging and accounting/settlement mechanisms for international telecommunications services using the next-generation networks (NGNs), future networks, and any possible future development, including adaptation of existing D-series Recommendations to the evolving user needs | [D.Framework](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13509) Framework for ICT service delivery with the guaranteed QoS and requested bitrate on fixed & mobile data networks, for development of efficient economic mechanisms and models of interaction in the “operator-provider-user” chain |
| [Q2/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q2.aspx): Development of charging and accounting/settlement mechanisms for international telecommunications services, other than those studied in Question 1/3, including adaptation of existing D-series Recommendations to the evolving user needs | [D.Colocation](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14121) Colocation and Access Charges;[STUDY\_COMMAG](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13495) Study of the use of commercial agreements for international telecommunications services arrangements;[STUDY\_DR](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13496) Dispute Resolution Processes (previously "Dispute Resolution Related to Charging and Invoicing") |
| [Q3/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q3.aspx): Study of economic and policy factors relevant to the efficient provision of international telecommunication services | [D.datatariff](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14603) Principles for tariff regulation of Data Services;[D.IoTpolicy](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14122) Guidelines on Tariff and regulatory aspects of Internet of Things (IoT);[D.Licensing](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13518) Mechanisms for pricing of licenses for mobile/broadband/fixed;[D.SpectrumShare](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13519) Shared use of spectrum and infrastructure) |
| [Q4/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q4.aspx): Regional studies for the development of cost models together with related economic and policy issues | [STUDY\_ROAMREG](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14607) Regional Roaming Initiatives |
| [Q6/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q6.aspx) : International Internet connectivity including relevant aspects of Internet protocol (IP) peering, regional traffic exchange points, cost of provision of services and impact of transition from Internet protocol version 4 (IPv4) to Internet protocol version 6 (IPv6) | [D.50 Supp.3](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14568) Reducing the cost of the international Internet connectivity of the Central African Backbone (CAB) project, Central African Republic component;[D.CostModelIIC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13510) Cost model for international internet connectivity;[STUDY\_IIC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13499) International Internet Connectivity, including IP peering, Regional Traffic Exchange Points, and cost of provision of services |
| [Q7/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q7.aspx): International mobile roaming issues (including charging, accounting and settlement mechanisms and roaming at border areas | [D.IoTRoaming](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13516) Roaming for the Internet of Things (IoT) |
| [Q10/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q10.aspx): Definition of relevant markets, competition policy and identification of operators with significant market power (SMP) as it relates to the economic aspects of the international telecommunication services and networks  | [D.DynamicTariff](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13524) Impact of Dynamic Tariffing on Market Competitiveness |
| [Q12/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q12.aspx): Tariffs, Economic and Policy Issues Pertaining to Mobile Financial Services (MFS) | [D.MFSCM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14133) Mobile Financial Services Transaction Cost Model |
| [Q13/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q13.aspx): Study of Tariff, Charging Issues of Settlements Agreement of Trans-multi-country Terrestrial Telecommunication Cables | [STUDY\_TCST](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14608) Charging and accounting settlements in Trans-multi-country terrestrial cable circuit |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals | [Y.4118 (ex Y.IoT-AC-reqts)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13664) Internet of Things requirements and technical capabilities for support of accounting and charging |
| **ITU-D SG1** [Question 5/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Telecommunications/ICTs for rural and remote areas (Q5/1 team has reviewed and made no changes) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q1/5](https://www.itu.int/net4/ITU-T/lists/loqr.aspx?Group=5&Period=16): Protection of information and communication technology (ICT) infrastructure from electromagnetic surges | [K.35](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13858) Bonding configurations and earthing at remote electronic sites (Completed in 2017) |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q21/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q21.aspx): Multimedia framework, applications and services | [HSTP-DIS-UAV](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13303) Use cases and service scenarios of disaster information service using unmanned aerial vehicles |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals | [Y.SRC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13704) Requirements for deployment of smart services in rural communities |
| **ITU-D SG1** [Question 6/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Consumer information, protection and rights: Laws, regulation, economic bases, consumer networks (Q6/1 team has reviewed and made no changes) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/default.aspx) | [Q1/2](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q1.aspx): Application of numbering, naming, addressing and identification plans for fixed and mobile telecommunications services | [E.164 Supplement 2](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13965) Number Portability |
| [SG3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/default.aspx) | [Q3/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q3.aspx): Study of economic and policy factors relevant to the efficient provision of international telecommunication services  | [Study\_ EPQoS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14611) Study of economic and policy factors relevant to the efficient provision of international telecommunication services |
| [Q9/3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q9.aspx): Economic and regulatory impact of the Internet, convergence (services or infrastructure) and new services, such as over the top (OTT), on international telecommunication services and networks | [D.ConsumerOTT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14123) Customer redress mechanism and consumer protection |
| [Q10/3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q10.aspx): Definition of relevant markets, competition policy and identification of operators with significant market power (SMP) as it relates to the economic aspects of the international telecommunication services and networks | [D.NumberPort](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14125) Recommendation ITU-T "Methodological guide for determining the impact of numerical portability on competition" |
| [Q12/3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q12.aspx): Tariffs, Economic and Policy Issues Pertaining to Mobile Financial Services (MFS) | [D.ConsumerMFS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14129) Consumer Protection in Mobile Financial Services; |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) and **QSDG** | [Q2/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q2.aspx): Definitions, guides and frameworks related to QoS/QoE | [HB-CoCa](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14117) Handbook on Country Case Studies;[HB-Guireg](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14120) Handbook providing guidance to regulators;[P.10/G.100](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14118) Vocabulary for performance, quality of service and quality of experience |
| [Q7/12](https://www.itu.int/ITU-T/workprog/wp_block.aspx?isn=4158): Methods, tools and test plans for the subjective assessment of speech, audio and audiovisual quality interactions | [P.CLN](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13727) Cultural/language/nationality dependence of subjective quality |
| [Q12/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q12.aspx): Operational aspects of telecommunication network service quality | [E.RQUAL](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14043) Strategies to Establish Quality Measurement Frameworks;[E.NetPerfRank](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14042) Statistical Framework for QoE Centric Benchmarking Scoring and Ranking;[E.831 (ex E.CEMI)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13804) Customer experience management index for popular services in operators' network to score service quality that customer experience in terms of key network performance parameters |
| [Q13/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q13.aspx): QoE, QoS and performance requirements and assessment methods for multimedia | [G.1032 (ex G.QoE-gaming)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13777) Influence Factors on Gaming Quality of Experience |
| [SG17](https://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/default.aspx) | [Q4/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q4.aspx): Cybersecurity | [X.1212 (ex X.cogent)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13545) Design considerations for improved end-user perception of trustworthiness indicators |
| **ITU-D SG1**[Question 7/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Access to telecommunication/ICT services by persons with disabilities and other persons with specific needs (Q7/1 team has reviewed and made no changes) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q4/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q4.aspx): Electromagnetic compatibility (EMC) issues arising in the telecommunication environment | [K.133 (ex K.bwenv)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13891) Electromagnetic (EM) environment of body worn equipment in the 2.4 GHz and 13.56MHz industrial, scientific and medical band (Completed in 2017) |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q3/12](https://www.itu.int/ITU-T/workprog/wp_block.aspx?isn=4154) Speech transmission and audio characteristics of communication terminals for fixed circuit-switched, mobile and packet-switched Internet protocol (IP) networks | [P.DHIP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13789) Technical requirements and test methods for the digital wired or wireless headset interface of mobile terminals |
| [Q5/12](https://www.itu.int/ITU-T/workprog/wp_block.aspx?isn=4156): Telephonometric methodologies for handset and headset terminals | [P.57](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13744) Artificial ears |
| [Q6/12](https://www.itu.int/ITU-T/workprog/wp_block.aspx?isn=4157) Analysis methods using complex measurement signals including their application for speech and audio enhancement techniques | [P.50](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13752) Artificial voices |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q24/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q24.aspx): Human factors related issues for improvement of the quality of life through international telecommunications | [E.OKID](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13961) On-screen keyboards for ICT devices;[E.FAST](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13962) User interface for face-to-face speech translation considering human factors |
| [Q26/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx): Accessibility to multimedia systems and services | [F.790](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13301) Telecommunications accessibility guidelines for older persons and persons with disabilities;[F.791](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14078) Accessibility terms and definitions;[F.921 (V2)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14529) Audio-based network navigation system for persons with vision impairment;[F.CVR-PWN](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14346) Framework of cyber-vulnerability reduction for persons with disabilities and specific needs;[F.WAAD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14436) Safety requirements for audio augmenting devices;[FSTP.ANS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14347) Checklist Compliance Protocol and Indicators for Audio-Based Network Navigation System for Persons with Vision Impairment;[FSTP.Intl-Relay](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14348) International Relay Services;[FSTP-RCSO](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13332) Technical paper: Overview of remote captioning services;[H.702 (2015) Cor.1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13980) Accessibility profiles for IPTV systems: Various corrections and clarifications;[H.ACC-GAD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14438) Guidance on audio descriptions (New) (twin text of ISO/IEC TS 20071-21:2015, Information technology - User interface component accessibility - Part 21);[H.ACC-GAP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14440) Guidance on the audio presentation of text in videos, including captions, subtitles and other on-screen text (New) (twin text of ISO/IEC 20071-25:2017, Information Technology - User interface component accessibility Part 25);[H.ACC-GVP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14439) Guidance on the Visual presentation of audio information, including captions and subtitles (twin text of ISO/IEC DIS 20071-23, Information technology - User Interface component accessibility Part 23);[H.MD-DiDRR](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13320) Profile metadata for persons with specific needs as part of disability-inclusive disaster risk reduction;[HSTP.ACC-SL](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13272) Production guidelines for sign language service;[HSTP.ACC-AUD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13270) Technical Paper on Methods for improving the intelligibility of audio (or speech) |
| [JCA-AHF](http://www.itu.int/en/ITU-T/jca/ahf/Pages/default.aspx) | Joint Coordination Activity on Accessibility and Human Factors (JCA-AHF) | [Q26/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx): Accessibility to multimedia systems and services |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals | [Y.Accessibility-IoT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13697) Accessibility requirements for the Internet of things applications and services |

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| **ITU-D SG2** [Question 1/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Creating the smart cities and society: Employing ICTs for sustainable social and economic development (Q1/2 team has reviewed and made no changes) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q1/2](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q1.aspx): Application of numbering, naming, addressing and identification plans for fixed and mobile telecommunications services | [E.IoT-NNAI](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13968) Internet of Things Naming Numbering Addressing and Identifiers;[TR.IoTid](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14543) Technical report on overview of IoT schemes |
| [Q6/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q6.aspx): Management architecture and security | [M.somm (ex M.inomsa)](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14196): Framework of smart operation, management and maintenance |
| [SG3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/default.aspx) | [Q3/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q3.aspx): Study of economic and policy factors relevant to the efficient provision of international telecommunication services | [D.IoTpolicy](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14122) Guidelines on Tariff and regulatory aspects of Internet of Things (IoT) |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q6/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx): Achieving energy efficiency and smart energy | [L.1325 (ex L.Green STNI)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13897) Green ICT solutions for telecom network facilities (Completed in 2016);[L.1360 (ex L.EE-ARCH)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13896) Energy control of SDN architecture (Completed in 2016);[L.SE\_BS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14154) Smart energy solution for telecom base stations;[Suppl. EE for Smart Grid](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13879) Analysis of the energy efficiency of telecommunication services used for the needs of smart grid applications |
| [Q7/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q7.aspx): Circular economy including e-waste | [L.1020 (ex L.CE\_ICT)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14460) Circular Economy: Guide for Operators and Suppliers on approaches to migrate towards circular ICT goods and networks (Completed in 2017);[L.CE\_Concepts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13927) Circular Economy; Definitions and concepts for material efficiency for ICT; |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q12/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q12.aspx): Testing of Internet of things, its applications and identification systems | [Q.39\_FW\_Test\_ID\_IoT](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13837) The framework of testing of identification systems used in IoT;[Q.FW\_IoT/Test](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13818) Framework for IoT Testing;[Q.Het\_IoT\_Gateway\_Test](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14057) The structure of the testing of heterogeneous Internet of Things gateways in a laboratory environment |
| [Q5/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q5.aspx): Protocols and procedures supporting services provided by broadband network gateways | [Q.HET-GW](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14732) Signalling protocol for Heterogeneous IoT gateways |
| [SG13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/default.aspx) | [Q1/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q1.aspx): Innovative services scenarios, deployment models and migration issues based on Future Networks | [Y.farms](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13635) Framework and application model for risk mitigation service based on networks;[Y.sfes](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14288) Smart Farming Education Service based on u-learning environment;[Y.smpp](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14287) Service model for the pre-production stage on Smart Farming |
| [Q16/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q16.aspx): Knowledge-centric trustworthy networking and services | [Y.STR](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14622) Socio-technical recommendations for contributing to socio-economic awareness (New) |
| [Q22/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q22.aspx): Upcoming network technologies for IMT-2020 and Future Networks | [Y.SuppICN-PoC-DaaS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14480) PoC for IoT Data as a Service using ICN in IMT-2020 |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q21/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q21.aspx): Multimedia framework, applications and services | [F.745 Amd.1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14495) Functional requirements for network-based speech-to-speech translation services: Support of automatic sign language generation;[F.746.4 (ex F.DICN-Reqs)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13304) Requirements for deployment of information centric networks;[F.746.5 (ex H.LLS-FW)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13302) Framework for language learning system based on speech/NLP technology;[F.747.9 (ex F.EMS-Arch)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13276) Requirements and architecture for energy management services;[F.CCNMMS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13262) Requirements and architecture for CCN-based mobile multimedia services;[F.NG-CDN](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14433) Service Requirements for the next generation content delivery networks |
| [Q24/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q24.aspx): Human factors related issues for improvement of the quality of life through international telecommunications | [E.FAST](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13962) User interface for face-to-face speech translation considering human factors |
| [Q27/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q27.aspx): Vehicle gateway platform for telecommunication/ITS services and applications | [F.749.2 (ex F.VG-REQ)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13234) Service requirements for vehicle gateway platforms;[F.AUTO-TAX](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13294) Taxonomy for ICT-enabled motor vehicle automated driving systems;[H.550 (ex H.VGP-ARCH)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13275) Architecture and functional entities of Vehicle Gateway Platforms;[HSTP-VG-Gap](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14079) Technical Paper: Gap Analysis of Vehicle Gateways defined by SDOs |
| [SG17](https://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/default.aspx) | [Q6/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q6.aspx): Security aspects of telecommunication services, networks and Internet of Things | [X.1331 (ex X.sgsec-2)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13552) Security guidelines for home area network (HAN) devices in smart grid systems;[X.1361 (ex X.iotsec-2)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13559) Security framework for the Internet of things based on the gateway model;[X.1362 (ex X.iotsec-1)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13547) Simple encryption procedure for Internet of things (IoT) environments;[X.1373 (ex X.itssec-1)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13548) Secure software update capability for intelligent transportation system communication devices;[X.ibc-iot](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14387) Security Framework for Use of Identity-Based Cryptography in Support of IoT Services over Telecom Networks;[X.iotsec-3](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14112) Technical framework of PII (Personally Identifiable Information) handling system in IoT environment;[X.nb-iot](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14386) Security Requirements and Framework for Narrow Band Internet of Things;[X.secup-iot](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14385) Secure Software Update for IoT devices;[X.sgsec-3](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13586) Security guidelines for smart metering service in smart grids;[X.ssp-iot](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14599) Security Requirements and Framework for IoT Service Platform;[X.Sup26 Cor.1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14598) ITU-T X.1111 - Supplement on security functional architecture for smart grid services using telecommunication networks: Corrigendum 1 |
| [Q11/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q11.aspx): Generic technologies (Directory, public key infrastructure (PKI), privilege management infrastructure (PMI), Abstract Syntax Notation One (ASN.1), object identifiers (OIDs)) to support secure applications | [X.orf-gs](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14202) OID-based resolution framework for IoT group services;[X.sup31 (ex X.sup-oid-iot)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13542) Supplement 31 to ITU-T X-series Recommendations - ITU-T X.660 Guidelines for using object identifiers for the Internet of things |
| [Q13/17](http://itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q13.aspx): Security aspects for Intelligent Transport System | [X.itssec-2](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13549) Security guidelines for V2X communication systems;[X.itssec-3](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14394) Security requirements for vehicle accessible external devices;[X.itssec-4](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14395) Methodologies for intrusion detection system on in-vehicle systems;[X.itssec-5](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14396) Security guidelines for vehicular edge computing;[X.mdcv](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14586) Security-related misbehaviour detection mechanism based on big data analysis for connected vehicles;[X.stcv](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14587) Security threats in connected vehicles |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q1/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q1.aspx): End to end connectivity, networks, interoperability, infrastructures and Big Data aspects related to IoT and SC&C | [Y.4200 (ex Y.SSCP, Y.SCP)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14098) Requirements for interoperability of smart city platforms;[Y.4201 (ex Y.frame-scc)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13672) High-level requirements and reference framework of smart city platform;[Y.4454 (ex Y.SC-platform)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13684) Platforms interoperability for smart cities;[Y.infra](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13673) Overview of city infrastructure;[Y.ism-ssc](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13674) Technical framework for integrated sensing and management system;[Y.isw-ssc](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13675) The Integrated Sensor Web Resource Metadata for Smart Sustainable Cities;[Y.SC-OpenData](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13670) Framework of Open Data in Smart Cities;[Y.Suppl.45 to ITU-T Y.4000 series (ex Y.SC-Overview)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13668) An overview of smart cities and communities and the role of information and communication technologies |
| [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals | [Supp.-Y.IoT Scenarios for Developing Countries](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13662) Scenarios of Implementing Internet of Things in networks of developing countries;[Supp-Y.IoT-Use-Cases](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13699) IoT Use Cases;[Y.4101/Y.2067](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13689) Common requirements and capabilities of a gateway for Internet of Things applications;[Y.4114 (ex Y.IoT-BigData-reqts)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13658) Specific requirements and capabilities of the IoT for Big Data;[Y.4116 (ex Y.TPS-req)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13686) Requirements of transportation safety service including use cases and service scenarios;[Y.4117 (ex Y.IoT-WDS-Reqts)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13660) Requirements and capabilities of Internet of Things for support of wearable devices and related services;[Y.4119 (ex Y.AERS-reqts)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14105) Requirements and capability framework for IoT-based automotive emergency response system;[Y.4118 (ex Y.IoT-AC-reqts)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13664) Internet of Things requirements and technical capabilities for support of accounting and charging;[Y.Accessibility-IoT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13697) Accessibility requirements for the Internet of things applications and services;[Y.IoT-BPM-reqts-caps](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14497) Specific Requirements and Capabilities of the Internet of Things for Business Process Management;[Y.IoT-EC-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14499) IoT requirements for edge computing;[Y.IoT-GP-Reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13667) Requirements for an IoT enabled network to support applications for global processes of the earth;[Y.IoT-ITS-framework](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13688) Framework of Cooperative Intelligent Transport Systems based on the Internet of Things;[Y.IoT-UAS-Reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14303) Use cases, requirements and capabilities of unmanned aircraft systems for Internet of Things;[Y.SCC-Use-Cases](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14498) Use Cases of Smart Cities and Communities;[Y.SmartMan-IIoT-overview](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13682) Overview of smart manufacturing in the context of Industrial Internet of Things;[Y.SRC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13704) Requirements for deployment of smart services in rural communities |
| [Q3/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q3.aspx): Architectures, management, protocols and Quality of Service | [Supp-Y.IPv6-IoT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13695) IPv6 Potential for the Internet of Things and Smart Cities;[Y.4115 (ex Y.IoT-DE-RA)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13681) Reference architecture for IoT device capabilities exposure;[Y.4500.1 (ex Y.oneM2M.ARC)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14320) oneM2M- Series of work items (24 items);[Y.gw-IoT-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13654) Functional architecture of gateway for Internet of things applications;[Y.IoT-rmc](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14126) Reference architecture of accessing IoT resources for management and control;[Y.IoT-son](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13659) Framework of self-organization network in the IoT environments;[Y.NGNe-IoT-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13661) Architecture of the Internet of Things based on NGNe;[Y.SSC-AISE-arc](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14503) Reference architecture of artificial intelligence service exposure for smart sustainable cities |
| [Q4/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q4.aspx): e/Smart services, applications and supporting platforms | [Y.4456 (ex Y.SPL)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13705) Requirements and Functional Architecture for Smart Parking Lot in Smart City;[Y.del-fw](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13676) Framework of delegation service for the IoT devices;[Y.energy-mMG](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14107) Application model for energy services on multiple microgrids;[Y.IoT-LISF](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14332) Lightweight intelligent software framework for IoT devices;[Y.IoT-SQ-fns](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13701) Service Functionalities of Self-quantification over Internet of things;[Y.ISG-fr](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13678) Framework of Smart Greenhouse Service;[Y.SC-Residential](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13669) Requirements and Reference Architecture of Smart Residential Communities;[Y.smart-evacuation](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14102) Framework of Smart Evacuation during emergencies in Smart Cities and Communities;[Y.social-device](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13655) Framework of the social device networking;[Y.SSL](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14101) Requirements and Reference Framework for Smart Street Light;[Y.STD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13707) Functional Architecture for Management to Smart Tourist Destinations;[Y.TPS-afw](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13677) Architectural framework for providing transportation safety service;[Y.WoO-hn](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13663) Architecture of web of objects based virtual home network |
| [Q5/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q5.aspx): Research and emerging technologies, terminology and definitions | [Suppl. Y. MEDT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14296) Methodology for Building Sustainable Capabilities during Enterprises’ Digital Transformation;[TR.AI4IoT (ex Y.AI4SC)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14103) Artificial Intelligence and Internet of Things;[Y.CrowdSystems (ex Y.Req-Arch-CS)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13696) Requirements and Functional Architecture of IoT-related Crowdsourced Systems;[Y.HEP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13691) Framework for Home Environment Profiles and Levels of IoT Systems;[Y.SCC-Terms](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13692) Vocabulary for Smart Cities and Communities |
| [Q6/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q6.aspx): Security, privacy, trust and identification | [Y.4805 (ex Y.SC-Interop)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13671) Identifier service requirements for the interoperability of Smart City applications |
| [Q7/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q7.aspx): Evaluation and assessment of Smart Sustainable Cities and Communities | [Y.AFDTS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14302) Assessment Framework for Digital Transformation of Sectors in Smart Cities;[Y.ODI](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13708) Open Data Indicator in smart cities;[Y.SSC-IA](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14300) Smart Sustainable City Impact Assessment;[Y.SSC-MM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14301) Smart Sustainable Cities Maturity Model |
| [JCA-IoT and SC&C](http://www.itu.int/en/ITU-T/jca/iot/Pages/default.aspx) | Joint Coordination Activity on Internet of Things and Smart Cities and Communities (JCA-IoT and SC&C) | [D.2r16](https://www.itu.int/ifa/t/sftp/jcaiot/DELIVERABLES/JCAIoTSSC-D-2r16_IoTandSCC%20roadmap-20170316.doc)- [IoT and SC&C standards roadmap](https://www.itu.int/net4/itu-t/roadmap%22%20%5Cl%20%22?topic=0.78&workgroup=1&searchValue=&page=1&sort=Revelance" \t "_blank) |
| **ITU-D SG2**[Question 2/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Telecommunications/ICTs for eHealth (Q2/2 team has reviewed and made no changes) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q4/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q4.aspx): Electromagnetic compatibility (EMC) issues arising in the telecommunication environment | [K.133 (ex K.bwenv)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13891) Electromagnetic (EM) environment of body worn equipment in the 2.4 GHz and 13.56MHz industrial, scientific and medical band (Completed in 2017) |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q28/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q28.aspx): Multimedia framework for e-health applications | [F.MCDC (ex H.OPVQ)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13295) Framework for in-flight and post-flight precautionary continuous monitoring for communicable disease control;[F.Med-UHD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14080) Framework for telemedicine systems using ultra-high definition imaging;[F.Med-VHN](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14349) Framework of Telemedicine Service based on Virtual Hospital Network;[F.SLD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13308) Guidelines for safe listening devices/systems;[FTSP.EH-DEV](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14081) Issues list for enhancing accessibility to e-health services and applications in developing countries;[H.810 (V4)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13334), [H.811](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14403), [H.812](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14404), [H.813](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14409) Interoperability design guidelines for personal connected health systems |
| [SG17](https://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/default.aspx) | [Q9/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q9.aspx): Telebiometrics | [X.1080.1 rev](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13596) e-Health and world-wide telemedicines - Generic telecommunication protocol |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals | [Y.4117 (ex Y.IoT-WDS-Reqts)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13660) Requirements and capabilities of Internet of Things for support of wearable devices and related services |
| [Q4/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q4.aspx): e/Smart services, applications and supporting platforms | [Y.IoT-SQ-fns](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13701) Service Functionalities of Self-quantification over Internet of things; |
| [Q7/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q7.aspx): Evaluation and assessment of Smart Sustainable Cities and Communities | [Y.IoT-EH-PFE](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13679) Performance evaluation frameworks of e-health systems in the IoT; |
| **ITU-D SG2** [Question 3/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Securing information and communication networks: Best practices for developing a culture of cybersecurity (Q3/2 team has reviewed and made no changes) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q2/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q2.aspx): Methods and practices for conditional access, protection against unauthorized copying and against unauthorized redistribution ("redistribution control" for digital cable television distribution to the home) | [J.dcas-oneway](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14507) Downloadable Conditional Access System for One-Way TV Networks |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q2/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q2.aspx): Signalling requirements and protocols for services and applications in emerging telecommunication environments | [Q.SR-Trust](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14448) Signalling requirements and architecture for interconnection between trustable network entities |
| [SG13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/default.aspx) | [Q16/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q16.aspx): Knowledge-centric trustworthy networking and services | [Y.3051 (ex Y.trusted-env)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13611) The basic principles of trusted environment in ICT infrastructure;[Y.3052 (ex Y.trust-provision)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13646) Overview of trust provisioning for ICT infrastructures and services;[Y.trust-index](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14279) Trust index for ICT infrastructures and services |
| [Q19/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q19.aspx): End-to-end Cloud computing management, cloud security and big data governance | [Y.3514 (ex Y.CCTIC)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13621) Cloud computing - Trusted inter-cloud computing framework and requirements;[Y.BDDP-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14076) Big data - Overview and requirements for data preservation;[Y.CCICTM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13644) Cloud Computing - Overview of Inter-Cloud Trust Management;[Y.CCICDM-Req](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13645) Cloud Computing - Requirements for Inter-Cloud Data Management; |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q26/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx): Accessibility to multimedia systems and services | [F.CVR-PWN](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14346) Framework of cyber-vulnerability reduction for persons with disabilities and specific needs |
| [SG17](https://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/default.aspx) | [Q1/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q1.aspx): Telecommunication/ICT security coordination | [Security Roadmap](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14368) ICT security standards roadmap;[Security Compendium](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14369) Security compendium;[Security Manual](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14367) Security in Telecommunications and Information Technology, 7th edition;[X.TRsuss-rev](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14370) Technical Report on Successful use of security standards |
| [Q2/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q2.aspx): Security architecture and framework | [X.1040 (ex X.salcm)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13575) Security reference architecture for lifecycle management of e-commerce business data;[X.1041 (ex X.voLTEsec-1)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13576) Security framework for voice-over-long-term-evolution (VoLTE) network operation;[X.sdnsec-3](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14110) Security guideline of Service Function Chain based on software defined network;[X.SDSec](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14558) Guideline on Software-defined Security in SDN (Software-defined Networking)/NFV (Network Fuction Virtualization) Network;[X.srnv](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14379) Security Requirements of Network Virtualization;[X.ssc](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14378) Security Service Chain Architecture;[X.sup30 (ex X.sup-sgmvno)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13543) Supplement 30 to ITU-T X-series Recommendations - ITU-T X.805 Security guidelines for mobile virtual network operators |
| [Q3/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q3.aspx): Telecommunication information security management | [X.1051 (2016) Cor1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14365) Information technology - Security techniques - Code of practice for Information security controls based on ISO/IEC 27002 for telecommunications organizations - Corrigendum 1;[X.1052-rev](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14380) Organization information security management guideline;[X.1053 (ex X.sgsm)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13531) Code of practice for information security controls based on ITU-T X.1051 for small and medium-sized telecommunication organizations;[X.1054-rev](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14381) Information technology - Security techniques - Governance of information security;[X.1058 (ex X.gpim)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13535) Information technology - Security techniques - Code of practice for Personally Identifiable Information protection;[X.cins](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14382) Information technology - Security techniques - Guidelines for Cyber Insurance;[X.framcdc](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14559) Framework for the creation and operation of a Cyber Defence Center;[X.Sup32 (ex X.sup-gpim)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13544) ITU-T X.1058 - Code of practice for personally identifiable information protection for telecommunications organizations;[X.sup-myuc](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14383) Code of practice for information security control base on ITU-T X.1051 for Malaysian telecommunications organizations information and network security management |
| [Q4/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q4.aspx): Cybersecurity | [X.1213 (ex X.sbb)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13539) Security capability requirements for countering smartphone-based botnets;[X.1214 (ex X.samtn)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13557) Security assessment techniques in telecommunication/ICT networks;[X.1500 Amd.11](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13595), [X.1500 App.I (2011) Amd.12](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14198) Overview of cybersecurity information exchange – Amendments 11 and 12;[X.fgati](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14561) Framework and Guidelines for Applying Threat Intelligence in Telecom Network Operation;[X.gcpie](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14560) Guidelines for Collection and Preservation of Cyber Security Incident Evidence;[X.metric](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13577) Metrics for evaluating threat and resilience in cyberspace;[X.ucstix](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14109) Use Cases for Structured Threat Information Expression (STIX™) |
| [Q5/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q5.aspx): Countering spam by technical means | [X.1248 (ex X.cspim)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13540) Technical requirements for countering instant messaging spam;[X.1249 (ex X.tfcma)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13560) Technical framework for countering mobile in-application advertising spam;[X.gcims](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14384) Guidelines for countering instant messaging spam;[X.sup29 (ex X.sup-gcspi)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13546) Supplement 29 to ITU-T X-series Recommendations - ITU-T X.1242 Guidelines on countermeasures against short message service (SMS) phishing and smishing attacks;[X.sup-ctss](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13585) Supplement to ITU-T X.1231 Technical framework for countering telephone service scam;[X.tecwes](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14563) Technologies in countering website spoofing for telecommunication organizations;[X.tfcas](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14111) Technical framework for countering advertising spam in user generated information;[X.tsfpp](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14565) Technical security framework for the protection of users' personal information while countering mobile messaging spam |
| [Q6/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q6.aspx): Security aspects of telecommunication services, networks and Internet of Things | [X.5Gsec-q](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14600) Security guidelines for applying quantum-safe algorithms in 5G systems;[X.1126 (ex X.msec-11)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13574) Guidelines on mitigating the negative effects of infected terminals in mobile networks;[X.sdnsec-1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13551) Security services using the software-defined networking;[X.1331 (ex X.sgsec-2)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13552) Security guidelines for home area network (HAN) devices in smart grid systems;[X.1361 (ex X.iotsec-2)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13559) Security framework for the Internet of things based on the gateway model;[X.1362 (ex X.iotsec-1)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13547) Simple encryption procedure for Internet of things (IoT) environments;[X.1373 (ex X.itssec-1)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13548) Secure software update capability for intelligent transportation system communication devices;[X.ibc-iot](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14387) Security Framework for Use of Identity-Based Cryptography in Support of IoT Services over Telecom Networks;[X.iotsec-3](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14112) Technical framework of PII (Personally Identifiable Information) handling system in IoT environment;[X.nb-iot](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14386) Security Requirements and Framework for Narrow Band Internet of Things;[X.secup-iot](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14385) Secure Software Update for IoT devices;[X.sgsec-3](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13586) Security guidelines for smart metering service in smart grids;[X.ssp-iot](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14599) Security Requirements and Framework for IoT Service Platform;[X.Sup26 Cor.1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14598) ITU-T X.1111 - Supplement on security functional architecture for smart grid services using telecommunication networks: Corrigendum 1 |
| [Q7/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q7.aspx): Secure application services | [X.1145 (ex X.websec-6)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13553) Security framework and requirements for open capabilities of telecommunication services;[X.1146 (ex X.websec-8)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13561) Secure protection guidelines for value-added services provided by telecommunication operators;[X.sfop](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14389) Security framework of open platform for FinTech services;[X.sgos](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14566) Security guidelines of Web-based online customer service;[X.tfss](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14388) Technical Framework for Security Services Provided by Operators;[X.srfb](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13588) Security Requirements and Framework for Big Data Analytics in mobile Internet services |
| [Q8/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q8.aspx): Cloud computing security | [X.1603 (ex X.dsms)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13562) Data security requirements for the monitoring service of cloud computing;[X.GSBDaaS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13591) Guidelines on security of Big Data as a Service;[X.sgBDIP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14567) Security Guidelines for Big Data infrastructure and platform;[X.sgtBD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14390) Security guidelines of lifecycle management for telecom Big Data;[X.SRIaaS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13578) Security requirements of public infrastructure as a service (IaaS) in cloud computing;[X.SRNaaS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13590) Security requirements of Network as a Service (NaaS) in cloud computing |
| [Q9/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q9.aspx): Telebiometrics | [X.1080.0 (2017) Cor.1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14419) Access control for telebiometrics data protection: Corrigendum 1;[X.1080.1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13596) - [X.1080.6](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13530)Telebiometrics related to;[X.tab](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13592) Telebiometric authentication using bio-signals;[X.tac](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14113) Telebiometric access control with smart ID card;[X.tas](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14602) Telebiometric authentication using speaker recognition |
| [Q10/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q10): Identity management architecture and mechanisms | [X.eaasd](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13593) Framework of enhanced authentication in telebiometric environments using anti-spoofing detection mechanisms |
| [Q11/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q11.aspx): Generic technologies (Directory, public key infrastructure (PKI), privilege management infrastructure (PMI), Abstract Syntax Notation One (ASN.1), object identifiers (OIDs)) to support secure applications | [X.500-series-rev](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14272) Edition 9 of the X.500 Series;[X.cms-prof](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13594) Cryptographic Message Syntax (CMS) Profile;[X.orf-gs](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14202) OID-based resolution framework for IoT group services;[X.sup31 (ex X.sup-oid-iot)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13542) Supplement 31 to ITU-T X-series Recommendations - ITU-T X.660 Guidelines for using object identifiers for the Internet of things; |
| [Q13/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q13.aspx): Security aspects for Intelligent Transport System | [X.itssec-2](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13549) Security guidelines for V2X communication systems;[X.itssec-3](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14394) Security requirements for vehicle accessible external devices;[X.itssec-4](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14395) Methodologies for intrusion detection system on in-vehicle systems;[X.itssec-5](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14396) Security guidelines for vehicular edge computing;[X.mdcv](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14586) Security-related misbehaviour detection mechanism based on big data analysis for connected vehicles;[X.stcv](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14587) Security threats in connected vehicles |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q3/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q3.aspx): Architectures, management, protocols and Quality of Service | [Y.oneM2M.SEC.SOL](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14318) oneM2M-TS 0003 Security Solutions |
| [Q6/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q6.aspx): Security, privacy, trust and identification | [Y.4806 (ex Y.IoT-sec-safety)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13700) Security capabilities supporting safety of the Internet of Things;[Y.IoT-IoD-PT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13690) Identity of IoT devices, which is based on secure procedures and ensures privacy and trust of the used IoT systems;[Y.LPWA](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14298) Security, interoperability and identification aspects for Low Power Wide Area (LPWA) systems;[Y.IoT-Interop](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13703) An Interoperability framework for IoT |
| **ITU-D SG2**[Question 4/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Assistance to developing countries for implementing conformance and interoperability (C&I) programmes and combating counterfeit ICT equipment and theft of mobile devices (Q4/2 team has reviewed and made no changes) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/default.aspx) | [Q1/2](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q1.aspx): Application of numbering, naming, addressing and identification plans for fixed and mobile telecommunications services | [E.A-N/GoC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13949) Administrative procedures for ENUM for E.164 country codes and associated ICs for networks and GICs for groups of countries;[E.156](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13954) Guidelines for ITU-T action on reported misuse of E.164 number resources |
| [Q7/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q7.aspx): Interface specifications and specification methodology | [X.781](https://www.itu.int/ITU-T/recommendations/rec.aspx?id=5547&lang=en) Requirements and guidelines for Implementation Conformance Statements proformas associated with CORBA-based systems;[X.783](https://www.itu.int/ITU-T/recommendations/rec.aspx?id=12203&lang=en) Guidelines for implementation conformance statement proformas associated with web services-based management systems;[X.784](https://www.itu.int/ITU-T/recommendations/rec.aspx?id=12783&lang=en) Guidelines for implementation conformance statements proformas associated with SNMP-based management systems;[M.3170.4](https://www.itu.int/rec/T-REC-M.3170.4/en) Multi-technology network management: Conformance testing specification |
| [SG3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/default.aspx) | [Q12/3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q12.aspx): Tariffs, Economic and Policy Issues Pertaining to Mobile Financial Services (MFS) | [D.InteropCompetition](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14131) Interoperability for Competition in Mobile Financial Services |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q9/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q9.aspx): Service and networks benchmark testing, remote testing including Internet related performance measurements | [Q.3961 (ex Q.TM\_Int\_sp\_test)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13819) Testing methodologies of Internet related performance measurements including e2e bit rate within the fixed and mobile operator's networks;[Q.SP-RT-NP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14465) Signalling procedures for controlling probes used for remote testing of network parameters |
| [Q10/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q10.aspx): Testing of emerging IMT-2020 technologies | [Q.SDN-CT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14466) Framework of SDN controller testing; |
| [Q11/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q11.aspx): Protocols and networks test specifications; frameworks and methodologies | [Q.4013.1 v.1\_SI\_IBCF\_TS\_Part1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13849) Testing of the IBCF requirements; (3GPP Release 12); Part 1: Protocol Implementation Conformance Statement (PICS);[Q.4013.2 v.1\_SI\_IBCF\_TS\_Part2](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13850) Core Network and Interoperability Testing (INT); Testing of the IBCF requirements; (3GPP Release 10); Part 2: Test Suite Structure and Test Purposes (TSS&TP);[Q.4014.2 v.1\_SI\_IAD\_TS\_Part2 (ex Q.39\_SI\_IAD\_TS\_Part2 v.1 [3GPP Release 10])](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13831) PSTN/ISDN terminal equipment using IP Multimedia core network subsystem; Conformance testing; Part 2: TSS&TP;[Q.TI-TEST](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14467) Framework of model network for Tactile Internet testing |
| [Q12/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q12.aspx): Testing of Internet of things, its applications and identification systems | [Q.39\_FW\_Test\_ID\_IoT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13837) The framework of testing of identification systems used in IoT;[Q.FW\_IoT/Test](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13818) Framework for IoT Testing;[Q.Het\_IoT\_Gateway\_Test](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14057) The structure of the testing of heterogeneous Internet of Things gateways in a laboratory environment |
| [Q13/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q13.aspx): Monitoring parameters for protocols used in emerging networks, including cloud computing and software-defined networking/network function virtualization (SDN/NFV) | [Q.SQM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14468) Signalling requirements and architecture for the Internet service quality monitoring system;[Q.BNGP](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14469) Set of parameters of vBNG for monitoring |
| [Q14/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q14.aspx): Cloud interoperability testing | [Q.wa-iop](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13839) Cloud Interoperability testing about Web Application;[Q.vs-iop-reqts](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14605) Interoperability testing requirements of virtual switch  |
| [Q15/11:](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q15.aspx) Combating counterfeit and stolen ICT equipment | [Q.FW\_CCF](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13825) Framework for solution to combat counterfeit ICT Devices;[Q.FW\_CSM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14058) Framework for Combating the use of Stolen Mobile ICT Devices;[TR-BP\_CF](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13827) Technical Report - Guidelines on Best Practice and Solutions for Combating Counterfeit ICT Devices;[TR-Uni\_Id (ex TR-Sub\_Una)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13826) Technical Report on use of anti-counterfeiting technical solutions relying on unique and persistent mobile device identifiers |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q6/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q6.aspx): Security, privacy, trust and identification | [Y.IoT-DA-Counterfeit](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13702) Information Management Digital Architecture to combat counterfeiting in IoT |
| [SG17](https://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/default.aspx) | [Q6/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q6.aspx): Security aspects of telecommunication services, networks and Internet of Things | [X.1127 (ex X.msec-9)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13550) Functional security requirements and architecture for mobile phone anti-theft measures |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q3/12](https://www.itu.int/ITU-T/workprog/wp_block.aspx?isn=4154) Speech transmission and audio characteristics of communication terminals for fixed circuit-switched, mobile and packet-switched Internet protocol (IP) networks | [P.DHIP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13789) Technical requirements and test methods for the digital wired or wireless headset interface of mobile terminals |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q13/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q13.aspx): Multimedia application platforms and end systems for IPTV | [HSTP.CONF-H764](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13250) Conformance testing specification for H.764 |
| [Q26/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx): Accessibility to multimedia systems and services | [HSTP.CONF-H702](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13322) Conformance testing specification for ITU-T H.702 |
| [Q28/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q28.aspx): Multimedia framework for e-health applications | [H.821](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13998) Conformance of ITU-T H.810 personal health system: Healthcare information system interface;[H.830.1](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13999)-12 Conformance of ITU-T H.810 personal health system: Services interface Part 1-12;[H.840](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14011) - [H.850](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13342) Conformance of ITU-T H.810 personal health system: Personal Health Devices interface  |
| **ITU-D SG2**[Question 5/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Utilizing telecommunications/ICTs for disaster risk reduction and management (Q5/2 team has reviewed and made no changes) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/default.aspx) | [Q3/2](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q3.aspx): Service and operational aspects of telecommunications, including service definition | [E.119 (ex E.rdr-scbm)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13964) Requirements for safety confirmation and broadcast message service for disaster relief;[E.sup.fdr](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13960) Framework of disaster management for disaster relief system;[E.TD-DR](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13959) Terms and definitions for DR&NRR |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q6/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx): Achieving energy efficiency and smart energy | [L.SES](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13931) Use of ICT sites to support environmental sensing |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q3/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q3.aspx): Signalling requirements and protocols for emergency telecommunications | [Q.ETN-DS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14450) Signalling architecture of the fast deployment emergency telecommunication network to be used in a natural disaster;[Q.suppl.Multi\_Device\_ETS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14451) Signalling requirements for VoLTE-based network and GSM/UMTS network supporting Multi-device emergency telecommunications service;[Q.Suppl.VoLTE\_ETS\_Interconnection](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14052) Signalling requirements for interconnection between VoLTE-based network and other networks supporting emergency telecommunications service (ETS) |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q4/12](https://www.itu.int/ITU-T/workprog/wp_block.aspx?isn=4155) Objective methods for speech and audio evaluation in vehicles | [P.1140](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14344) Speech Quality Requirements for Emergency Calls |
| [SG15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx) | [Q17/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q17.aspx): Maintenance and operation of optical fibre cable networks | [L.300series.Sup.35 (ex L.300series.Sup.nrr-frm)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13384) Framework of disaster management for network resilience and recovery |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q8/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q8.aspx): Immersive live experience systems and services | [H.ILE-SS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14087) Service scenario of ILE;[H.ILE-MMT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14190) Service configuration, media transport protocols, signalling information of MMT for Immersive Live Experience systems; |
| [Q14/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q14.aspx): Digital signage systems and services | [H.DS-ASM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14060) Digital signage: Metadata for alerting services;[H.DS-CASF](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13266) Digital signage: Common alerting service framework;[H.785.0](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13311) Digital signage: Requirements for disaster information services |
| [Q26/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx): Accessibility to multimedia systems and services | [H.MD-DiDRR](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13320) Profile metadata for persons with specific needs as part of disability-inclusive disaster risk reduction |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals | [Y.4119 (ex Y.AERS-reqts)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14105) Requirements and capability framework for IoT-based automotive emergency response system |
| [Q3/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q3.aspx): Architectures, management, protocols and Quality of Service | [Y.AERS-msd](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14502) Minimum set of data structure for automotive emergency response system;[Y.AERS-mtp](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14501) Minimum set of data transfer protocol for automotive emergency response system; |
| [Q4/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q4.aspx): e/Smart services, applications and supporting platforms | [Y.disaster\_notification](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14331) Framework of the disaster notification of the population in Smart Cities and Communities;[Y.smart-evacuation](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14102) Framework of Smart Evacuation during emergencies in Smart Cities and Communities; |
| **ITU-D SG2** [Question 6/2](https://www.itu.int/md/D14-WTDC17-C-0115/): ICTs and the environment (Q6/2 team has reviewed and made no changes) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q6/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx): Achieving energy efficiency and smart energy | [L.1325 (ex L.Green STNI)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13897) Green ICT solutions for telecom network facilities;[L.SES](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13931) Use of ICT sites to support environmental sensing;[Suppl. Green ICT SLQ](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13914) Green ICT standards landscape questionnaires;[Suppl.BP\_EF](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14155) A Guideline on best practices and environment friendly policies for effective ICT deployment methods |
| [Q7/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q7.aspx): Circular economy including e-waste | [L.1020 (ex L.CE\_ICT)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14460) Circular Economy: Guide for Operators and Suppliers on approaches to migrate towards circular ICT goods and networks (Completed in 2017);[L.1021 (ex L.EPR)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13907) Extended producer responsibility - Guidelines for sustainable e-waste management (Completed in 2017);[L.1030 (ex L.EWFrame)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14536) E- Waste management framework for countries;[L.ARCH\_EoL\_CE](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14540) Environmental Impact of architecture solutions with regards to End of Life and Circular Economy (CE);[L.BP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13928) Best practices on e-waste management;[L.CE\_Concepts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13927) Circular Economy; Definitions and concepts for material efficiency for ICT;[L.CEM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14160) Criteria for evaluation of the environmental impact of mobile phones;[L.ER](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14459) Guidelines and Accreditation for e- Waste Recyclers;[L.EW2020](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14158) Connect 2020 agenda E-Waste reduction;[L.methodology\_arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14539) Methodology to assess the environmental impact of the different proposed architectures;[L.SEEQ](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14538) Effect for global ICT of the potential of selling Services instead of Equipment on the waste creation and environmental impacts;[Suppl.\_L.BM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13892) Supplement on Collection of sustainable models for e-waste management by private corporations |
| [Q8/5](https://www.itu.int/ITU-T/workprog/wp_block.aspx?isn=4123): Guides and terminology on environment and climate change | [Terminology Handbook](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13864) Extension of the Terminology Handbook to cover relevant L-series terminologies;[Terminology Handbook - web version](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13862) Web version of the Terminology Handbook |
| [Q9/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q9.aspx): Climate change and assessment of information and communication technology (ICT) in the framework of the Sustainable Development Goals (SDGs) | [L.1450 (ex L.MAE)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14162) Methodologies for the assessment of the environmental impact of the information and communication technology sector;[L.1460 (ex L.Connect2020 framework)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13936) Connect 2020 greenhouse gases emissions – Guidelines;[L.1505 (ex L.ICT and FA)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13929) Information and communication technology and adaptation of the fisheries sector to the effects of climate change (Completed in 2017);[L.1506 (ex L.CCRisk)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13930) Framework of climate change risk assessment for telecommunication and electrical facilities (Completed in 2017);[L.DATA](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14159) Guidelines for an ITU Database on GHG emissions;[L.methodology RM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13875) Methodology for helping ICT organizations to assess the impact on rare metals from their operation;[L.MAAP](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14163) Methodology for assessing the aggregated positive sector-level impacts of ICT in other sectors;[L.microgrid\_assesement](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14161) Impact assessment of energy services on multiple microgrids |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals | [Y.IoT-GP-Reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13667) Requirements for an IoT enabled network to support applications for global processes of the earth;[Y.SEM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13706) Requirements and capability framework of Smart Environmental Monitoring |
| [Q4/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q4.aspx): e/Smart services, applications and supporting platforms | [Y.ISG-fr](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13678) [Y.ISG-fr](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13678) Framework of Smart Greenhouse Service |
| **ITU-D SG2** [Question 7/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Strategies and policies concerning human exposure to electromagnetic fields (Q7/2 team has reviewed and made no changes) |
| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q3/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q3.aspx): Human exposure to electromagnetic fields (EMFs) from information and communication technologies (ICTs) | [K.52](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14145) Guidance on complying with limits for human exposure to electromagnetic fields (Completed in 2017);[K.61](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13873) Guidance on measurement and numerical prediction of electromagnetic fields for compliance with human exposure limits for telecommunication installations (Completed in 2017);[K.70](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14146) Mitigation techniques to limit human exposure to EMFs in the vicinity of radiocommunication stations (Completed in 2017);[K.91](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14453) Guidance for assessment, evaluation and monitoring of human exposure to radio frequency electromagnetic fields (Completed in 2017);[K.100](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14454) Measurement of radio frequency electromagnetic fields to determine compliance with human exposure limits when a base station is put into service(Completed in 2017);[K.121](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14147) Guidance on the environmental management for compliance with radio frequency EMF limits for radiocommunication base stations;[K.Supp-5G\_EMF\_Compliance](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14455) Electromagnetic field (EMF) compliance assessments for 5G wireless networks;[K.BPrac](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13923) Best Practices of the use of mobile devices for exposure reduction |

**Table 2 – Matrix of ITU-D Questions and ITU-T Questions**

|  | **SG 1** | **SG 2** |
| --- | --- | --- |
| **Q1/1** | **Q2/1** | **Q3/1** | **Q4/1** | **Q5/1** | **Q6/1** | **Q7/1** | **Q1/2** | **Q2/2** | **Q3/2** | **Q4/2** | **Q5/2** | **Q6/2** | **Q7/2** |
| **ITU-T SG2** | [**Q1/2**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q1.aspx) | X |  |  |  |  | X |  | X |  |  | X |  |  |  |
| [**Q2/2**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q2.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q3/2**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q3.aspx) |  |  |  |  |  |  |  |  |  |  |  | X |  |  |
| [**Q5/2**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q5.aspx) | X |  | X |  |  |  |  |  |  |  |  |  |  |  |
| [**Q6/2**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q6.aspx) | X |  |  |  |  |  |  | X |  |  |  |  |  |  |
| [**Q7/2**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q7.aspx) |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| **ITU-T SG3** | [**Q1/3**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q1.aspx) | X |  |  | X |  |  |  |  |  |  |  |  |  |  |
| [**Q2/3**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q2.aspx) |  |  |  | X |  |  |  |  |  |  |  |  |  |  |
| [**Q3/3**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q3.aspx) | X |  |  | X |  | X |  | X |  |  |  |  |  |  |
| [**Q4/3**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q4.aspx) |  |  |  | X |  |  |  |  |  |  |  |  |  |  |
| [**Q6/3**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q6.aspx) | X |  |  | X |  |  |  |  |  |  |  |  |  |  |
| [**Q7/3**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q7.aspx) |  |  |  | X |  |  |  |  |  |  |  |  |  |  |
| [**Q9/3**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q9.aspx) |  |  | X |  |  | X |  |  |  |  |  |  |  |  |
| [**Q10/3**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q10.aspx) | X |  |  | X |  | X |  |  |  |  |  |  |  |  |
| [**Q11/3**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q11.aspx) |  |  | X |  |  |  |  |  |  |  |  |  |  |  |
| [**Q12/3**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q12.aspx) |  |  | X | X |  | X |  |  |  |  | X |  |  |  |
| [**Q13/3**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q13.aspx) | X |  |  | X |  |  |  |  |  |  |  |  |  |  |
| **ITU-T SG5** | [**Q1/5**](https://www.itu.int/net4/ITU-T/lists/loqr.aspx?Group=5&Period=16) |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| [**Q2/5**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q2.aspx) | ~~X~~ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q3/5**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q3.aspx) | ~~X~~ |  |  |  |  |  |  |  |  |  |  |  |  | X |
| [**Q4/5**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q4.aspx) | ~~X~~ |  |  |  |  |  | X |  | X |  |  |  |  |  |
| [**Q6/5**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx) | X |  |  |  |  |  |  | X |  |  |  | X | X |  |
| [**Q7/5**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q7.aspx) | X |  | X |  |  |  |  | X |  |  |  |  | X |  |
| [**Q8/5**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q8.aspx) |  |  |  |  |  |  |  |  |  |  |  |  | X |  |
| [**Q9/5**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q9.aspx) |  |  |  |  |  |  |  |  |  |  |  |  | X |  |
| **ITU-T SG9** | [**Q1/9**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q1.aspx) |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q2/9**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q2.aspx) |  | X |  |  |  |  |  |  |  | X |  |  |  |  |
| [**Q4/9**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q4.aspx) |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q5/9**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q5.aspx) |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q6/9**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q6.aspx) |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q7/9**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q7.aspx) |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q8/9**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q8.aspx) |  | X | X |  |  |  |  |  |  |  |  |  |  |  |
| [**Q10/9**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q10.aspx) |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| **ITU-T SG11** | [**Q1/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q1.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q2/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q2.aspx) | X |  |  |  |  |  |  |  |  | X |  |  |  |  |
| [**Q3/11**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q3.aspx) |  |  |  |  |  |  |  |  |  |  |  | X |  |  |
| [**Q4/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q4.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q5/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q5.aspx) | X |  |  |  |  |  |  | X |  |  |  |  |  |  |
| [**Q6/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q6.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q7/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q7.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q9/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q9.aspx) | X |  |  |  |  |  |  |  |  |  | X |  |  |  |
| [**Q10/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q10.aspx) | X |  |  |  |  |  |  |  |  |  | X |  |  |  |
| [**Q11/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q11.aspx) |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| [**Q12/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q12.aspx) |  |  |  |  |  |  |  | X |  |  | X |  |  |  |
| [**Q13/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q13.aspx) |  |  |  |  |  |  |  | X |  |  | X |  |  |  |
| [**Q14/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q14.aspx) | X |  | X |  |  |  |  |  |  |  | X |  |  |  |
| [**Q15/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q15.aspx) |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| **ITU-T SG12** | [**Q2/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q2.aspx) | X | X |  |  |  | X |  |  |  |  |  |  |  |  |
| [**Q3/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q3.aspx) |  |  |  |  |  |  | X |  |  |  | X |  |  |  |
| [**Q4/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q4.aspx) |  |  |  |  |  |  |  |  |  |  |  | X |  |  |
| [**Q5/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q5.aspx) |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| [**Q6/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q6.aspx) |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| [**Q7/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q7.aspx) |  |  |  |  |  | X |  |  |  |  |  |  |  |  |
| [**Q8/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q8.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q11/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q11.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q12/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q12.aspx) | X |  |  |  |  | X |  |  |  |  |  |  |  |  |
| [**Q13/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q13.aspx) | X | X | X |  |  | X |  |  |  |  |  |  |  |  |
| [**Q16/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q16.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q18/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q18.aspx) |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q19/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q19.aspx) |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| **ITU-T SG13** | [**Q1/13**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q1.aspx) | X |  |  |  |  |  |  | X |  |  |  |  |  |  |
| [**Q2/13**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q2.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q5/13**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q5.aspx) | X |  | X |  |  |  |  |  |  |  |  |  |  |  |
| [**Q6/13**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q6.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q7/13**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q7.aspx) | X |  | X |  |  |  |  |  |  |  |  |  |  |  |
| [**Q16/13**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q16.aspx) |  |  |  |  |  |  |  | X |  | X |  |  |  |  |
| [**Q17/13**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q17.aspx) |  |  | X |  |  |  |  |  |  |  |  |  |  |  |
| [**Q18/13**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q18.aspx) |  |  | X |  |  |  |  |  |  |  |  |  |  |  |
| [**Q19/13**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q19.aspx) |  |  | X |  |  |  |  |  |  | X |  |  |  |  |
| [**Q20/13**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q20.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q21/13**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q21.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q22/13**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q22.aspx) | X |  |  |  |  |  |  | X |  |  |  |  |  |  |
| [**Q23/13**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q23.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ITU-T SG15** | [**Q2/15**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q2.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q4/15**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q4.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q11/15**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q11.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q12/15**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q12.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q17/15**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q17.aspx) |  |  |  |  |  |  |  |  |  |  |  | X |  |  |
| [**Q18/15**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q18.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ITU-T SG16** | [**Q8/16**](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q8.aspx) |  | X |  |  |  |  |  |  |  |  |  | X |  |  |
| [**Q13/16**](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q13.aspx) | X | X |  |  |  |  |  |  |  |  | X |  |  |  |
| [**Q14/16**](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q14.aspx) |  |  |  |  |  |  |  |  |  |  |  | X |  |  |
| [**Q21/16**](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q21.aspx) | X | X | X |  | X |  |  | X |  |  |  |  |  |  |
| [**Q24/16**](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q24.aspx) |  |  |  |  |  |  | X | X |  |  |  |  |  |  |
| [**Q26/16**](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx) |  | X |  |  |  |  | X |  |  |  | X | X |  |  |
| [**Q27/16**](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q27.aspx) |  |  |  |  |  |  |  | X |  |  |  |  |  |  |
| [**Q28/16**](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q28.aspx) |  |  |  |  |  |  |  |  | X |  | X |  |  |  |
| **ITU-T SG17** | [**Q1/17**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q1.aspx) |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| [**Q2/17**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q2.aspx) | X |  |  |  |  |  |  |  |  | X |  |  |  |  |
| [**Q3/17**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q3.aspx) |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| [**Q4/17**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q4.aspx) |  |  |  |  |  | X |  |  |  | X |  |  |  |  |
| [**Q5/17**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q5.aspx) |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| [**Q6/17**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q6.aspx) | X |  |  |  |  |  |  | X |  | X | X |  |  |  |
| [**Q7/17**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q7.aspx) | X |  | X |  |  |  |  |  |  | X |  |  |  |  |
| [**Q8/17**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q8.aspx) |  |  | X |  |  |  |  |  |  | X |  |  |  |  |
| [**Q9/17**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q9.aspx) |  |  |  |  |  |  |  |  | X | X |  |  |  |  |
| [**Q10/17**](http://itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q10.aspx) |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| [**Q11/17**](http://itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q11.aspx) | X |  |  |  |  |  |  |  |  | X |  |  |  |  |
| [**Q13/17**](http://itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q13.aspx) |  |  |  |  |  |  |  | X |  | X |  |  |  |  |
| **ITU-T SG20** | [**Q1/20**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q1.aspx) |  |  |  |  |  |  |  | X |  |  |  |  |  |  |
| [**Q2/20**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx) | X |  |  | X | X |  | X | X |  |  |  | X | X |  |
| [**Q3/20**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q3.aspx) | X |  |  |  |  |  |  | X |  | X |  | X |  |  |
| [**Q4/20**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q4.aspx) |  |  |  |  |  |  |  | X | X |  |  | X | X |  |
| [**Q5/20**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q5.aspx) |  |  |  |  |  |  |  | X |  |  |  |  |  |  |
| [**Q6/20**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q6.aspx) |  |  |  |  |  |  |  | X |  | X | X |  |  |  |
| [**Q7/20**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q7.aspx) |  |  |  |  |  |  |  | X | X |  |  |  |  |  |

**Table 3 – List of ITU-T Questions which could be related to ITU-D Questions even in the absence of relevant ITU-T work items**

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| --- |
| **ITU-D SG1** [Question 1/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Strategies and policies for the deployment of broadband in developing countries (Updated by Q1/1 team) |
| **ITU-T SG** | **ITU-T Question** |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/default.aspx) | [Q2/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q2.aspx): Routing and interworking plan for fixed and mobile networks |
| [Q3/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q3.aspx): Service and operational aspects of telecommunications, including service definition |
| [Q5/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q5.aspx): Requirements, priorities and planning for telecommunication management and operation, administration and maintenance (OAM) Recommendations  |
| [Q6/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q6.aspx): Management architecture and security |
| [SG3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/default.aspx) | [Q2/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q2.aspx): Development of charging and accounting/settlement mechanisms for international telecommunications services, other than those studied in Question 1/3, including adaptation of existing D-series Recommendations to the evolving user needs |
| [Q4/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q4.aspx): Regional studies for the development of cost models together with related economic and policy issues |
| [Q10/3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q10.aspx): Definition of relevant markets, competition policy and identification of operators with significant market power (SMP) as it relates to the economic aspects of the international telecommunication |
| [Q11/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q11.aspx): Economic and policy aspects of big data and digital identity in international telecommunications services and networks |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q9/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q9.aspx): Climate change and assessment of information and communication technology (ICT) in the framework of the Sustainable Development Goals (SDGs) |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q4/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q4.aspx): Guidelines for implementations and deployment of transmission of multichannel digital television signals over optical access networks |
| [Q5/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q5.aspx): Software components application programming interfaces (APIs), frameworks and overall software architecture for advanced content distribution services within the scope of Study Group 9 |
| [Q8/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q8.aspx): The Internet protocol (IP) enabled multimedia applications and services for cable television networks enabled by converged platforms |
| [Q9/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q9.aspx): Requirements, methods, and interfaces of the advanced service platforms to enhance the delivery of sound, television, and other multimedia interactive services over cable television network |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q4/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q4.aspx): Protocols for control, management and orchestration of network resources  |
| [Q5/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q5.aspx): Protocols and procedures supporting services provided by broadband network gateways |
| [Q10/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q10.aspx): Testing of emerging IMT-2020 technologies |
| [Q11/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q11.aspx): Protocols and networks test specifications; frameworks and methodologies |
| [Q13/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q13.aspx): Monitoring parameters for protocols used in emerging networks, including cloud computing and software-defined networking/network function virtualization (SDN/NFV) |
| [Q14/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q14.aspx): Cloud interoperability testing  |
| [Q15/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q15.aspx): Combating counterfeit and stolen ICT equipment |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx)[QSDG](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/QSDG.aspx) | [Q1/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q1.aspx): SG12 work programme and quality of service/quality of experience (QoS/QoE) coordination in ITU-T |
| [Q9/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q9.aspx): Perceptual-based objective methods for voice, audio and visual quality measurements in telecommunication services |
| [Q14/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q14.aspx): Development of models & tools for multimedia quality assessment of packet-based video |
| [Q17/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q17.aspxhttp%3A/www.itu.int/en/ITU-T/studygroups/2013-2016/12/Pages/q17.aspx): Performance of packet-based networks and other networking technologies |
| [SG13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/default.aspx) | [Q5/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q5.aspx): Applying networks of future and innovation in developing countries |
| [Q7/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q7.aspx): Big data driven networking (bDDN) and Deep packet inspection (DPI) |
| [SG15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx) | [Q1/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q1.aspx): Coordination of access and home network transport standards |
| [Q2/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q2.aspx): Optical systems for fibre access networks |
| [Q4/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q4.aspx): Broadband access over metallic conductors |
| [Q16/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q16.aspx): Optical physical infrastructures |
| [Q18/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q18.aspx): Broadband in-premises networking |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |
| [Q11/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q11.aspx): Multimedia systems, terminals, gateways and data conferencing |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q1/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q1.aspx): End to end connectivity, networks, interoperability, infrastructures and Big Data aspects related to IoT and SC&C |
| [Q4/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q4.aspx): e/Smart services, applications and supporting platforms |
| [Q5/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q5.aspx): Research and emerging technologies, terminology and definitions |
| [Q6/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q6.aspx): Security, privacy, trust and identification |
| [Q7/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q7.aspx): Evaluation and assessment of Smart Sustainable Cities and Communities |
| **ITU-D SG1** [Question 2/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Strategies, policies, regulations and methods of migration and adoption of digital broadcasting and implementation of new services |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/default.aspx) | [Q3/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q3.aspx): Service and operational aspects of telecommunications, including service definition |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q12/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q12.aspx): Testing of Internet of things, its applications and identification systems |
|  | [Q14/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q14.aspx): Cloud interoperability testing |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q1/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q1.aspx): SG12 work programme and quality of service/quality of experience (QoS/QoE) coordination in ITU-T |
| [Q9/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q9.aspx): Operational aspects of telecommunication network service quality |
| [Q14/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q14.aspx): Development of models and tools for multimedia quality assessment of packet-based video services |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |
| **ITU-D SG1**[Question 3/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Emerging technologies, including cloud computing: m-services, and OTTs: Challenges and opportunities, economic and policy impact for developing countries |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/default.aspx) | [Q1/2](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q1.aspx): Application of numbering, naming, addressing and identification plans for fixed and mobile telecommunications services |
| [Q3/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q3.aspx): Service and operational aspects of telecommunications, including service definition |
| [Q5/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q5.aspx): Requirements, priorities and planning for telecommunication management and operation, administration and maintenance (OAM) Recommendations |
| [Q7/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q7.aspx): Interface specifications and specification methodology |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q6/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx): Achieving energy efficiency and smart energy |
| [Q9/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q9.aspx): Climate change and assessment of information and communication technology (ICT) in the framework of the Sustainable Development Goals (SDGs) |
|  |  |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q1/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q1.aspx): SG12 work programme and quality of service/quality of experience (QoS/QoE) coordination in ITU-T |
| [SG13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/default.aspx) | [Q1/13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q1.aspx): Innovative services scenarios, deployment models and migration issues based on Future Networks |
| [SG15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx) | [Q1/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q1.aspx): Coordination of access and home network transport standards |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q1/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q1.aspx): End to end connectivity, networks, interoperability, infrastructures and Big Data aspects related to IoT and SC&C |
| [Q7/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q7.aspx): Evaluation and assessment of Smart Sustainable Cities and Communities |
| **ITU-D SG1**[Question 4/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Economic policies and methods of determining the costs of services related to national telecommunication/ICT networks |
| [SG3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/default.aspx) | [Q11/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q11.aspx): Economic and policy aspects of big data and digital identity in international telecommunications services and networks |
| **ITU-D SG1** [Question 5/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Telecommunications/ICTs for rural and remote areas |
| [SG3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/default.aspx) | [Q1/3](http://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q1.aspx): Development of charging and accounting/settlement mechanisms for international telecommunications services using the next-generation networks (NGNs), future networks, and any possible future development, including adaptation of existing D-series Recommendations to the evolving user needs |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q2/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q2.aspx): Equipment resistibility and protective components |
| [Q4/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q4.aspx): Electromagnetic compatibility (EMC) issues arising in the telecommunication environment |
| [Q6/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx): Achieving energy efficiency and smart energy |
| [Q7/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q7.aspx): Circular economy including e-waste |
| [Q9/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q9.aspx) Climate change and assessment of information and communication technology (ICT) in the framework of the Sustainable Development Goals (SDGs) |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q9/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q9.aspx): Service and networks benchmark testing, remote testing including Internet related performance measurements |
|  | [Q12/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q12.aspx): Testing of Internet of things, its applications and identification systems |
|  | [Q13/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q13.aspx): Monitoring parameters for protocols used in emerging networks, including cloud computing and software-defined networking/network function virtualization (SDN/NFV) |
|  | [Q14/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q14.aspx): Cloud interoperability testing |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q1/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q1.aspx): SG12 work programme and quality of service/quality of experience (QoS/QoE) coordination in ITU-T |
| [Q2/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q2.aspx): Definitions, guides and frameworks related to QoS/QoE |
| [SG15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx) | [Q1/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q1.aspx): Coordination of access and home network transport standards |
| [Q16/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q16.aspx): Optical physical infrastructures |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |
| [Q13/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q13.aspx): Multimedia application platforms and end systems for IPTV |
| [Q26/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx): Accessibility to multimedia systems and services |
| [Q28/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q28.aspx): Multimedia framework for e-health applications |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q1/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q1.aspx): End to end connectivity, networks, interoperability, infrastructures and Big Data aspects related to IoT and SC&C |
| [Q3/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q3.aspx): Architectures, management, protocols and Quality of Service |
| [Q4/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q4.aspx): e/Smart services, applications and supporting platforms |
| [Q5/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q5.aspx): Research and emerging technologies, terminology and definitions |
| [Q6/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q6.aspx): Security, privacy, trust and identification |
| [Q7/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q7.aspx): Evaluation and assessment of Smart Sustainable Cities and Communities |
| **ITU-D SG1**[Question 6/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Consumer information, protection and rights: Laws, regulation, economic bases, consumer networks |
| [SG3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/default.aspx) | [Q7/3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q3.aspx): International mobile roaming issues (including charging, accounting and settlement mechanisms and roaming at border areas |
| [Q8/3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q8.aspx): Alternative calling procedures and misappropriation and misuse of facilities and services including calling line identification (CLI), calling party number delivery (CPND) and origin identification (OI) |
| [Q11/3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q11.aspx):  Economic and policy aspects of big data and digital identity in international telecommunications services and networks |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q7/5](//www.itu.int/net4/ITU-T/lists/loqr.aspx?Group=5&Period=16): Circular economy including e-waste |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q15/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q15.aspx): Combating counterfeit and stolen ICT equipment |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) and QSDG | [Q1/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q1.aspx): SG12 work programme and quality of service/quality of experience (QoS/QoE) coordination in ITU-T |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |
| [Q24/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q24.aspx): Human factors related issues for improvement of the quality of life through international telecommunications |
| [Q26/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx): Accessibility to multimedia systems and services |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q1/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q1.aspx): End to end connectivity, networks, interoperability, infrastructures and Big Data aspects related to IoT and SC&C |
| [Q4/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q4.aspx): e/Smart services, applications and supporting platforms |
| [Q5/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q5.aspx): Research and emerging technologies, terminology and definitions |
| [Q6/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q6.aspx): Security, privacy, trust and identification |
| **ITU-D SG1**[Question 7/1](https://www.itu.int/md/D14-WTDC17-C-0115/): Access to telecommunication/ICT services by persons with disabilities and other persons with specific needs |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q2/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q2.aspx): Equipment resistibility and protective components |
| [Q6/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx): Achieving energy efficiency and smart energy |
| [Q7/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q7.aspx): Circular economy including e-waste |
| [Q9/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q9.aspx) Climate change and assessment of information and communication technology (ICT) in the framework of the Sustainable Development Goals (SDGs) |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q6/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q6.aspx): Functional requirements for residential gateway and set-top box for the reception of advanced content distribution services |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q1/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q1.aspx): SG12 work programme and quality of service/quality of experience (QoS/QoE) coordination in ITU-T |
| [Q2/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q2.aspx): Definitions, guides and frameworks related to QoS/QoE |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q1/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q1.aspx): End to end connectivity, networks, interoperability, infrastructures and Big Data aspects related to IoT and SC&C |
| [Q4/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q4.aspx): e/Smart services, applications and supporting platforms |
| **ITU-D SG2** [Question 1/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Creating the smart cities and society: Employing ICTs for sustainable social and economic development |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/default.aspx) | [Q6/](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q9.aspx)2: Management architecture and security |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q9/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q9.aspx): Climate change and assessment of information and communication technology (ICT) in the framework of the Sustainable Development Goals (SDGs) |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q5/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q5.aspx): Protocols and procedures supporting services provided by broadband network gateways |
| [Q9/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q9.aspx): Service and networks benchmark testing, remote testing including Internet related performance measurements |
| [Q10/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q10.aspx): Testing of emerging IMT-2020 technologies |
| [Q11/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q11.aspx): Protocols and networks test specifications; frameworks and methodologies |
| [Q13/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q13.aspx): Monitoring parameters for protocols used in emerging networks, including cloud computing and software-defined networking/network function virtualization (SDN/NFV) |
| [Q14/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q14.aspx): Cloud interoperability testing |
| [Q15/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q15.aspx): Combating counterfeit and stolen ICT equipment |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q1/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q1.aspx): SG12 work programme and quality of service/quality of experience (QoS/QoE) coordination in ITU-T |
| [Q2/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q2.aspx): Definitions, guides and frameworks related to QoS/QoE |
| [SG15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx) | [Q1/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q1.aspx): Coordination of access and home network transport standards |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |
| [Q13/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q13.aspx): Multimedia application platforms and end systems for IPTV |
| [Q26/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx): Accessibility to multimedia systems and services |
| [Q28/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q28.aspx): Multimedia framework for e-health applications |
| **ITU-D SG2**[Question 2/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Telecommunications/ICTs for eHealth |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q1/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q1.aspx): Signalling and protocol architectures in emerging telecommunication environments and guidelines for implementations |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q1/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q1.aspx): SG12 work programme and quality of service/quality of experience (QoS/QoE) coordination in ITU-T |
| [Q2/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q2.aspx): Definitions, guides and frameworks related to QoS/QoE |
| [SG13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/default.aspx) | [Q2/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q2.aspx): Next-generation network (NGN) evolution with innovative technologies including software-defined networking (SDN) and network function virtualization (NFV) |
| [SG15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx) | [Q1/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q1.aspx): Coordination of access and home network transport standards |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q5/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q5.aspx): Research and emerging technologies, terminology and definitions |
| **ITU-D SG2**[Question 3/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Securing information and communication networks: Best practices for developing a culture of cybersecurity |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/default.aspx) | [Q6/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q6.aspx): Management architecture and security |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q5/5](https://www.itu.int/net4/ITU-T/lists/loqr.aspx?Group=5&Period=16): Security and reliability of information and communication technology (ICT) systems from electromagnetic and particle radiations |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q2/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q2.aspx): Signalling requirements and protocols for services and applications in emerging telecommunication environments |
| [SG15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx) | [Q1/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q1.aspx): Coordination of access and home network transport standards |
| **ITU-D SG2**[Question 4/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Assistance to developing countries for implementing conformance and interoperability (C&I) programmes and combating counterfeit ICT equipment and theft of mobile devices |
| [SG2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/default.aspx) | [Q3/2](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q3.aspx): Service and operational aspects of telecommunications, including service definition |
| Q7/2: Interface specifications and specification methodology |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q2/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q2.aspx): Equipment resistibility and protective components |
| [Q3/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q3.aspx): Human exposure to electromagnetic fields (EMFs) from information and communication technologies (ICTs) |
| [Q4/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q4.aspx): Electromagnetic compatibility (EMC) issues arising in the telecommunication environment |
| [Q6/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx): Achieving energy efficiency and smart energy |
| [Q9/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q9.aspx): Climate change and assessment of information and communication technology (ICT) in the framework of the Sustainable Development Goals (SDGs) |
| **ITU-D SG2**[Question 5/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Utilizing telecommunications/ICTs for disaster risk reduction and management |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q9/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q9.aspx): Climate change and assessment of information and communication technology (ICT) in the framework of the Sustainable Development Goals (SDGs) |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q8/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q8.aspx): The Internet protocol (IP) enabled multimedia applications and services for cable television networks enabled by converged platforms |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q1/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q1.aspx): SG12 work programme and quality of service/quality of experience (QoS/QoE) coordination in ITU-T |
| [Q2/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q2.aspx): Definitions, guides and frameworks related to QoS/QoE |
| [SG13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/default.aspx) | [Q2/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q2.aspx): Next-generation network (NGN) evolution with innovative technologies including software-defined networking (SDN) and network function virtualization (NFV) |
| [SG15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx) | [Q1/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q1.aspx): Coordination of access and home network transport standards |
| [Q16/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q16.aspx): Optical physical infrastructures |
| [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |
| [Q11/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q11.aspx): Multimedia systems, terminals, gateways and data conferencing |
| [SG17](https://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/default.aspx) | [Q4/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q4.aspx): Cybersecurity |
| **ITU-D SG2**[Question 6/2](https://www.itu.int/md/D14-WTDC17-C-0115/): ICTs and the environment |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q5/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q5.aspx): Research and emerging technologies, terminology and definitions |
| **ITU-D SG2** [Question 7/2](https://www.itu.int/md/D14-WTDC17-C-0115/): Strategies and policies concerning human exposure to electromagnetic fields |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals |

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