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| **Telecommunication Development Advisory Group (TDAG)**  **25th Meeting, Geneva, 2-5 June 2020** | C:\Users\comas\AppData\Local\Temp\Rar$DRa0.735\jpg\ITU official logo_blue_RGB.jpg |
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|  | **Document** **TDAG-20/****21-E** |
|  | **7 November 2019** |
|  | **English only** |
| ITU-T Study Group 20 | |
| LS/r on ITU inter-Sector coordination (reply to TSAG-LS13-E) | |
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| **Summary:**  The attached is a liaison statement received for information from ITU-T Study Group 20 on ITU inter-Sector coordination.  **Action required:**  TDAG is invited to note this document and provide guidance as deemed appropriate. | |

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| ITU logo | INTERNATIONAL TELECOMMUNICATION UNION  **TELECOMMUNICATION STANDARDIZATION SECTOR**  STUDY PERIOD 2017-2020 | | | SG20-LS113 | |
| **STUDY GROUP 20** | |
| **Original: English** | |
| **Question(s):** | | All/20 | | Geneva, 9-18 April 2019 | |
| **Ref.: SG20-TD1315** | | | | | |
| **Source:** | | ITU-T Study Group 20 | | | |
| **Title:** | | LS/r on ITU inter-Sector coordination (reply to TSAG-LS13-E) | | | |
| **LIAISON STATEMENT** | | | | | |
| **For action to:** | | | TSAG | | |
| **For comment to:** | | | - | | |
| **For information to:** | | | ISCG, ITU-R SG 1, ITU-R SG 5, ITU-R SG 6, ITU-R SG 3, ITU-R SG 4, ITU-R SG 7, ITU-D SG 2, ITU-D SG 1, RAG, TDAG, SG2, SG3, SG5, SG9, SG11, SG12, SG13, SG15, SG16, SG17 | | |
| **Approval:** | | | ITU-T Study Group 20 meeting (Geneva, 18 April 2019) | | |
| **Deadline:** | | | N/A | | |
| **Contact:** | | | Nasser Saleh Al Marzouqi Chairman SG20 | | Tel: +97 6118 468 Fax: +97 6118 484 E-mail: [nasser.almarzouqi@tra.gov.ae](mailto:nasser.almarzouqi@tra.gov.ae) |

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| **Keywords:** | Inter-Sector coordination |
| **Abstract:** | This LS contains the reply of ITU-T SG20 on inter-Sector coordination |

This liaison answers [TSAG-LS13 -E](http://handle.itu.int/11.1002/ls/sp16-tsag-oLS-00013.zip)

ITU-T Study Group 20 would like to thank TSAG and its Rapporteur Group on “Strengthening Collaboration” for its liaison statement ([TSAG-LS13 -E](http://handle.itu.int/11.1002/ls/sp16-tsag-oLS-00013.zip) posted as [SG20-TD1125](https://www.itu.int/md/T17-SG20-190409-TD-GEN-1125/en)) on ITU inter-Sector coordination.

ITU-T SG20 reviewed and provided comments on both attachments.

With reference to your question, ITU-T SG20 would prefer that the work items be listed in the table on “Matching of ITU-D SG1 and 2 Questions of interest to ITU-T Study Groups”.

**Attachments: 2**

- Attach1- Matching of ITU-D SG1 and SG2 Questions of interest to ITU-T Study Groups

- Attach2- Matching of ITU-R WPs of interest to ITU-T Study Groups

**Attachment 1**

**Matching of ITU-D SG1 and SG2 Questions of interest to ITU-T study groups**

Amendments herein reflect:

* TSAG-ILS TD341 from TDAG (11 May 2018)
* TSAG-ILS TD350 from ITU-T SG11 (27 July 2018)
* TSAG-ILS TD351 from ITU-T SG11 (27 July 2018)
* TSAG-ILS TD355 from ITU-T SG13 (27 July 2018)
* TSAG-ILS TD361 from ITU-T SG17 (7 September 2018)
* TSAG-ILS TD366 from ITU-T SG2 (14 September 2018)
* TSAG-ILS TD378 from ITU-T SG5 (21 September 2018)
* TSAG-ILS TD386r1 from ITU-T SG15 (19 October 2018)
* TSAG-ILS TD410 from TDAG (5 December 2018)
* ITU-T CIR 112 (12 September 2018).

**Reviewed matching of ITU-D SG1 and SG2 Questions of interest to ITU-T SG11.**

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

| **ITU-D SG1**  [**Question 1/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ01.1&stg=1)**: Strategies and policies for the deployment of broadband in developing countries** | | |
| --- | --- | --- |
| **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 |
| [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 |  |
| [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 |
| [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 |  |
| [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 |
| [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 |  |
| [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 |
| [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 |
| [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) | [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) | [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 |
| [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 |  |
| [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 |
| [Q17/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q17.aspxhttp:/www.itu.int/en/ITU-T/studygroups/2013-2016/12/Pages/q17.aspx): Performance of packet-based networks and other networking technologies |  |
| [Q18/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q18.aspx): Measurement and control of the end-to-end quality of service (QoS) for advanced television technologies, from image acquisition to rendering, in contribution, primary distribution and secondary distribution networks |  |
| [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 |  |
| [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](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) | [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](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 |
| [Q16/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q16.aspx): Optical physical infrastructures |  |
| [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) | [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 |  |
| [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.4416](https://www.itu.int/ITU-T/recommendations/rec.aspx?id=13638&lang=en) Architecture of the Internet of things based on next generation network evolution |
| [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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ02.1&stg=1)**: Strategies, policies, regulations and methods of migration and adoption of digital broadcasting and implementation of new services** | | |
| --- | --- | --- |
| **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) | [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |  |
| [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;  [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 |
| [SG17](https://www.itu.int/en/ITU-T/studygroups/2017-2020/17) | [Q6/17](http://itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q6.aspx): Security aspects of telecommunication services, networks and Internet of Things |  |
| [Q7/17](http://itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q7.aspx): Secure application services |  |

| **ITU-D SG1**  [**Question 3/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ03.1&stg=1)**: Emerging technologies, including cloud computing: m-services, and OTTs: Challenges and opportunities, economic and policy impact for developing countries** | | |
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| **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.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 (ex. [M.rrmctm](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14193)): Requirements for Service 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) | [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 | [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 |
| [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 | [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/2017-2020/11/Pages/q14.aspx): Cloud interoperability testing | Q.vs-iop-reqts: Interoperability testing requirements of virtual switch  Q.wa-iop: Cloud Interoperability testing about Web Application |
| [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 |  |
| [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.3515 (ex Y.CCNaaS-arch)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13613) Cloud computing - Functional architecture of Network as a Service;  [Y.3516 (ex Y.CCIC-arch)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13626) Cloud computing - Functional architecture of inter-cloud computing;  [Y.BDaaS-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13627) Cloud computing - Functional architecture of Big Data as a Service;  [Y.BD-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14280) Functional architecture of 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: Metadata framework for cloud service lifecycle management |
| [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) | [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 |
| [Q13/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q13.aspx): Security aspects for Intelligent Transport System |  |
| [Q14/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q14.aspx): Security aspects for Distributed Ledger Technologies |  |
| [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.UAV.arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14653) Functional architecture for unmanned aerial vehicles and unmanned aerial vehicle controllers using IMT-2020 networks  [Y.cnce-IoT-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14651) Functional architecture of cellular-radio network capability exposure for smart hospital based on Internet of things  [Y.NDA-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14652) Functional architecture of network-based driving assistance for autonomous vehicles |

| **ITU-D SG1**  [**Question 4/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ04.1&stg=1https://www.itu.int/md/D14-WTDC17-C-0115/)**: Economic policies and methods of determining the costs of services related to national telecommunication/ICT networks** | | |
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| **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 |
| [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 |  |
| [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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ05.1&stg=1)**: Telecommunications/ICTs for rural and remote areas** | | |
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| **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) |
| [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 |  |
| [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 |  |
| [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 |  |
| [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 |
| [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) |  |  |
| [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 |
| [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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ06.1&stg=1)**: Consumer information, protection and rights: Laws, regulation, economic bases, consumer networks** | | |
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| **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; |
| [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) andQSDG | [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 |
| [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 |  |
| [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 |
| [SG20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/default.aspx) |  |  |
| [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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ07.1&stg=1)**: Access to telecommunication/ICT services by persons with disabilities and other persons with specific needs** | | |
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| **ITU-T SG** | **ITU-T Question** | **Work items** |
| [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 | [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) |
| [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 |  |
| [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) | [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 | [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.4204](https://www.itu.int/ITU-T/recommendations/rec.aspx?id=13858&lang=en) Accessibility requirements for the Internet of things applications and services  [Y.ACC-PTS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14646) Accessibility requirements for smart public transportation services |
| [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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ01.2&stg=2)**: Creating the smart cities and society: Employing ICTs for sustainable social and economic development** | | |
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| **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; |
| [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) | [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 |
| [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 | [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 |
| [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](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 |
| [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 |  |
| [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 |
| [Q26/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx): Accessibility to multimedia systems and services |  |
| [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 |
| [Q28/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q28.aspx): Multimedia framework for e-health applications |  |
| [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) |  |  |
| [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.53 (ex. 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.4204 (ex. 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.4121 (ex.IoT-GP-Reqts)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13667) Requirements for an IoT enabled network for 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.4003 (ex. [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  [Y.SCC-Reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14305) Common requirements and capabilities of smart cities and communities from IoT and ICT perspectives  [Y.SEM](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13706) Requirements and capability framework of smart environmental monitoring  [Y.IoT-SmartBuild](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14959) Common requirements and capabilities of smart buildings from the IoT perspective  [Y.AM-SC-reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14960) IoT technical requirements and framework for monitoring physical city assets  [Y.IoT-AV-Reqts](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14958) Requirements and capability framework of IoT infrastructure to support network-assisted autonomous vehicles |
| [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 Working items (24 items);  [Y.4418 (ex.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  [Y.cnce-IoT-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14651) Functional architecture of cellular-radio network capability exposure for smart hospital based on Internet of things  [Y.SCCE-arch](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14654) Reference architecture of spare computational capability exposure of IoT devices for smart home  [Y.Sup.IPv6-IoT](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13695) IPv6 Potential for the Internet of things and smart 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.4555 (ex.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.4556 (ex.Y.SC-Residential)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13669) Requirements and functional architecture of smart residential community;  [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.4458 (ex.Y.SSL)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14101) Requirements and functional architecture of smart street light service;  [Y.STD](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13707) Functional Architecture for Management to Smart Tourist Destinations;  [Y.4457 (ex.Y.TPS-afw)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13677) Architectural framework for transportation safety services;  [Y.WoO-hn](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13663) Architecture of web of objects based virtual home network  [Y.disaster\_notification](http://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.IoT-AR](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14965) Framework for AR and VR based control in IoT  [Y.IoT-BoT-fw](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14099) Framework of blockchain of things as decentralized service platform  [Y.IoT-Lift](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14966) Framework of IoT based monitoring and management for Lift  [Y.IoT-VLC](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14963) Framework of IoT Services based on VLC  [Y.STIS-fm](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14100) Function and metadata of Spatiotemporal Information Service for SSC  [Y.Sup.4409](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14964) Implementation Guidelines to ITU-T Y.4409  [Y.smoke-detection](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=15090) Requirements and Functional Architecture of Smart Fire Smoke Detection Service  [Y.smart-education](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=15091) Requirements and Reference Architecture of Smart Education  [Y.UAV-BSI](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=15092) Requirements and functional architecture of base station inspection services using unmanned aerial vehicles  [Y.BC-SON](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=15093) Framework of blockchain-based self-organization networking in IoT environment  [Y.IoT-SCS](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=15094) Requirements and functional architecture for smart construction site services |
| [Q5/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q5.aspx): Research and emerging technologies, terminology and definitions | [Y.Sup.52 (ex. Suppl. Y. MEDT)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14296) Methodology for building digital capabilities during enterprises’ digital transformation;  [Y.Sup.AI4IoT (ex.TR.AI4IoT,ex Y.AI4SC)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14103) Unlocking Internet of things with artificial intelligence: Where we are and where we could be;  [Y.4205 (ex.Y.CrowdSystems, ex Y.Req-Arch-CS)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13696) Requirements and reference model of IoT-related crowdsourced systems;  [Y.Sup.54 (ex.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.4051 (ex.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.4906 (ex.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.4905 (ex.Y.SSC-IA)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14300) Smart sustainable city impact assessment;  [Y.4904 (ex.Y.SSC-MM)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14301) Smart sustainable cities maturity model  [Y.4903rev](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14951) Key performance indicators for smart sustainable cities to assess the achievement of sustainable development goals  [Y.SSC-BKDMS-arc](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14949) Reference architecture of blockchain-based unified KPI data management for smart sustainable cities  [Y.Stra-SSC](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14948) Standards mapping assessment for smart sustainable city (SSC) strategy  [Y.Sup.digi-inc](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=14950) Guidelines for digital inclusion in the development of digital urban technology and smart cities |
| [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#?topic=0.78&workgroup=1&searchValue=&page=1&sort=Revelance) |

| **ITU-D SG2**  [**Question 2/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ02.2&stg=2)**: Telecommunications/ICTs for eHealth** | | |
| --- | --- | --- |
| **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) |
| [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 |  |
| [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 |  |
| [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.4555 (ex.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 |
| [Q5/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q5.aspx): Research and emerging technologies, terminology and definitions |  |
| [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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ03.2&stg=2)**: Securing information and communication networks: Best practices for developing a culture of cybersecurity** | | |
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| **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 |
| [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) | [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 |
| [Q14/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q14.aspx): Security aspects for Distributed Ledger Technologies |  |
| [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 based on secure procedures to enhance trust of IoT systems;  [Y.4459 (ex.Y.IoT-Interop)](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=13703) An architecture for IoT interoperability |

| **ITU-D SG2**  [**Question 4/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ04.2&stg=2)**: Assistance to developing countries for implementing conformance and interoperability (C&I) programmes and combating counterfeit ICT equipment and theft of mobile devices** | | |
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| **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: 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 |
| [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) |  |
| [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: 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: 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 |
| [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 |
| [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 |
| [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 |

| **ITU-D SG2**  [**Question 5/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ05.2&stg=2)**: Utilizing telecommunications/ICTs for disaster risk reduction and management** | | |
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| **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 |
| [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 |  |
| [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) | [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 |  |
| [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 |
| [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 |  |
| [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) | [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |  |
| [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 |
| [Q11/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q11.aspx): Multimedia systems, terminals, gateways and data conferencing |  |
| [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 |
| [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 |  |
| [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  [Y.smoke-detection](https://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=15090) Requirements and Functional Architecture of Smart Fire Smoke Detection Service |

| **ITU-D SG2**  [**Question 6/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ06.2&stg=2)**: ICTs and the environment** | | |
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| **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 |
| [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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ07.2&stg=2)**: Strategies and policies concerning human exposure to electromagnetic fields** | | |
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| **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 |
| [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 |  |

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

|  | | **ITU-D SG 1** | | | | | | | **ITU-D SG 2** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**Q1/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ01.1&stg=1) | [**Q2/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ02.1&stg=1) | [**Q3/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ03.1&stg=1) | [**Q4/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ04.1&stg=1https://www.itu.int/md/D14-WTDC17-C-0115/) | [**Q5/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ05.1&stg=1) | [**Q6/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ06.1&stg=1) | [**Q7/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ07.1&stg=1) | [**Q1/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ01.2&stg=2) | [**Q2/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ02.2&stg=2) | [**Q3/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ03.2&stg=2) | [**Q4/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ04.2&stg=2) | [**Q5/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ05.2&stg=2) | [**Q6/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ06.2&stg=2) | [**Q7/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ07.2&stg=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**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q7.aspx)**/2** |  |  |  |  |  |  |  |  |  |  | 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) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q3/5**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q3.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |
| [**Q4/5**](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q4.aspx) |  |  |  |  |  |  | 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 |  |
| [**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 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q8/11**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q8.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** | [**Q1/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q1.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**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 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q17/12**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q17.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**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** | [**Q1/15**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q1.aspx) | X |  | X |  | X |  |  | X | X | X |  | X |  |  |
| [**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 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q14/15**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q14.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q15/15**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q15.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q16/15**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q16.aspx) | X |  |  |  | X |  |  |  |  |  |  | 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 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q19/15**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q19.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ITU-T SG16** | [**Q1/16**](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q8/16**](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q8.aspx) |  | X |  |  |  |  |  |  |  |  |  | X |  |  |
| [**Q11/16**](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q11.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**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 | 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 | X |  |  |  |
| [**Q7/17**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q7.aspx) | X | 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 |  | X |  |  |  |  |
| [**Q13/17**](http://itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q13.aspx) |  |  | X |  |  |  |  | X |  | X |  |  |  |  |
| [**Q14/17**](http://itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q14.aspx) |  |  | X |  |  |  |  |  |  | X |  |  |  |  |
| **ITU-T SG20** | [**Q1/20**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q1.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [**Q2/20**](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx) | X |  |  | 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 |  | 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 working items**

| **ITU-D SG1**  [**Question 1/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ01.1&stg=1)**: Strategies and policies for the deployment of broadband in developing countries** | |
| --- | --- |
| **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](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q4.aspx): Protocols for control, management and orchestration of network resources |
| [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 |
| [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)  [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:/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) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals |
| [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 2/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ02.1&stg=1)**: 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 | [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 |
| [Q14:/11](http://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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ03.1&stg=1)**: 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) |
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| [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) |  |
| [Q3/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q3.aspx): Architectures, management, protocols and Quality of Service |
| [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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ04.1&stg=1https://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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ05.1&stg=1)**: 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 | [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 |
| [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 |
| [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 |
| [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) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals |
| [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 |
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| **ITU-D SG1**  [**Question 6/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ06.1&stg=1)**: 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) |  |
| [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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ07.1&stg=1)**: 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) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals |
| [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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ01.2&stg=2)**: 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/) | [Q6/2](http://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) | [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 | [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) | [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals |
| [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 |
| [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 |
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| **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 |
| [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 |
| [Q6/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q6.aspx): Security, privacy, trust and identification |
|  | |
| **ITU-D SG2**  [**Question 4/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ04.2&stg=2)**: 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](https://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q7.aspx): Interface specifications and specification methodology |
| [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 |
| [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 |
| [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 |
| [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 |
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| **ITU-D SG2**  [**Question 6/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ06.2&stg=2)**: 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/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ07.2&stg=2)**: 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 |

**Attachment 2**

**Matching of ITU-R WPs of interest to ITU-T study groups**

Amendments herein reflect:

* TSAG-ILS TD342 from ITU-R Study Group 1 (5 July 2018)
* TSAG-ILS TD350 from ITU-T SG11 (27 July 2018)
* TSAG-ILS TD352 from ITU-R WPs 3J, 3K, 3L and 3M (2 July 2018)
* TSAG-ILS TD353 from ITU-R WP 5A, 5B and 5C (31 May 2018)
* TSAG ILS TD367 from ITU-R Working Parties (WPs) 7A, 7B, 7C and 7D (25 September 2018)
* TSAG ILS TD372, TSAG ILS TD373, and TSAG ILS TD378 from ITU-T SG5 (21 September 2018)
* TSAG ILS TD386r1 from ITU-T SG15 (19 October 2018)
* TSAG ILS TD402 from ITU-T SG9 (28 November 2018)
* ITU-T CIR 112 (12 September 2018).

**Table 1 – ITU-R WPs vis-à-vis ITU-T Questions**

ITU-R SG 1 Working Parties 1A, 1B, and 1C vis-à-vis ITU-T Questions

| [WP 1A](https://www.itu.int/go/ITU-R/wp1a): Spectrum engineering techniques | |
| --- | --- |
| ITU-T SG | ITU-T SG Questions |
| [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)  Note: The exposure limits for EMF fields are developed by the [International Commission on Non-Ionizing Radiation Protection (ICNIRP)](http://www.icnirp.org/) - a non-governmental organization formally recognized by WHO.  [Q4/5](http://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q4.aspx): Electromagnetic compatibility (EMC) issues arising in the telecommunication environment  [Q6/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx): Achieving energy efficiency and smart energy |
| [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  [Q4/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q4.aspx): Broadband access over metallic conductors  [Q15/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q15.aspx): Communications for smart grid  [Q18/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q18.aspx): Broadband in-premises networking |
| [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  [Q7/20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q7.aspx): Evaluation and assessment of Smart Sustainable Cities and Communities |

| [WP 1B](https://www.itu.int/go/ITU-R/wp1b): Spectrum management methodologies and economic strategies | |
| --- | --- |
| ITU-T SG | ITU-T SG Questions |
| [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  [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  [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 |
| [SG5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/default.aspx) | [Q6/5](https://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) |
| [SG13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/default.aspx) | [Q2/13](https://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)  [Q21/13](https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q21.aspx): Network softwarization including software-defined networking, network slicing and orchestration |
| [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  [Q7/20](https://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q7.aspx): Evaluation and assessment of Smart Sustainable Cities and Communities |

| [WP 1C](https://www.itu.int/go/ITU-R/wp1c): Spectrum monitoring | |
| --- | --- |
| ITU-T SG | ITU-T SG Questions |
| [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) |
| [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 |

ITU-R SG 3 Working Parties 3J, 3K, 3L, 3M vis-à-vis ITU-T Questions

| [WP 3J](https://www.itu.int/go/ITU-R/wp3j): Propagation fundamentals | |
| --- | --- |
| ITU-T SG | ITU-T SG Questions |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q10/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q10.aspx): Work programme, coordination and planning |

| [WP 3K](https://www.itu.int/go/ITU-R/wp3k): Point-to-area propagation | |
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| ITU-T SG | ITU-T SG Questions |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q10/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q10.aspx): Work programme, coordination and planning |

| [WP 3L](https://www.itu.int/go/ITU-R/wp3l): Ionospheric propagation and radio noise | |
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| ITU-T SG | ITU-T SG Questions |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q10/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q10.aspx): Work programme, coordination and planning |

| [WP 3M](https://www.itu.int/go/ITU-R/wp3m): Point-to-point and Earth-space propagation | |
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| ITU-T SG | ITU-T SG Questions |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q10/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q10.aspx): Work programme, coordination and planning |

ITU-R SG 4 Working Parties 4A, 4B, 4C vis-à-vis ITU-T Questions

| [WP 4A](https://www.itu.int/go/ITU-R/wp4a): Efficient orbit/spectrum utilization for FSS and BSS | |
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| ITU-T SG | ITU-T SG Questions |
| [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) |
| [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  [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 |

| [WP 4B](https://www.itu.int/go/ITU-R/wp4b): Systems, air interfaces, performance and availability objectives for FSS, BSS and MSS, including IP-based applications and satellite news gathering | |
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| ITU-T SG | ITU-T SG Questions |
| [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  [Q12/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q12.aspx): Operational aspects of telecommunication network service quality  [Q17/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/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  [Q23/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q23.aspx): Fixed-Mobile Convergence including IMT-2020 |
| [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 |
| [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  [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals  [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  [Q6/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q6.aspx): Security, privacy, trust and identification |

| [WP 4C](https://www.itu.int/go/ITU-R/wp4c): Efficient orbit/spectrum utilization for MSS and RDSS \* \* WP 4C will also deal with the performance issues related to RDSS | |
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| ITU-T SG | ITU-T SG Questions |
| [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 |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q10/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q10.aspx): Work programme, coordination and planning |
| [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 |

ITU-R SG 5 Working Parties 5A, 5B, 5C, 5D vis-à-vis ITU-T Questions

| [WP 5A](https://www.itu.int/go/ITU-R/wp5a): Land mobile service above 30 MHz\* (excluding IMT); wireless access in the fixed service; amateur and amateur-satellite services | |
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| ITU-T SG | ITU-T SG Questions |
| [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) |
| [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 |
| [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  [Q12/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q12.aspx): Operational aspects of telecommunication network service quality  [Q17/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/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  [Q16/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q16.aspx): Knowledge-centric trustworthy networking and services  [Q23/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q23.aspx): Fixed-Mobile Convergence including IMT-2020 |
| [SG15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx) | [Q15/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q15.aspx): Communications for smart grid |
| [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  [Q27/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q27.aspx): Vehicle gateway platform for telecommunication/ITS services and applications |
| [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  [Q13/17](http://itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q13.aspx): Security aspects for Intelligent Transport System |
| [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  [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals  [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 |

| [WP 5B](https://www.itu.int/go/ITU-R/wp5b): Maritime mobile service including Global Maritime Distress and Safety System (GMDSS); aeronautical mobile service and radiodetermination service | |
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| ITU-T SG | ITU-T SG Questions |
| [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 |
| [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)  [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) |

| [WP 5C](https://www.itu.int/go/ITU-R/wp5c): Fixed wireless systems; HF and other systems below 30 MHz in the fixed and land mobile services | |
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| ITU-T SG | ITU-T SG Questions |
| [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 |
| [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) |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx) | [Q10/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q10.aspx): Work programme, coordination and planning |
| [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  [Q12/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q12.aspx): Operational aspects of telecommunication network service quality  [Q17/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/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  [Q16/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q16.aspx): Knowledge-centric trustworthy networking and services  [Q20/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q20.aspx): IMT-2020: Network requirements and functional architecture  [Q23/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q23.aspx): Fixed-Mobile Convergence including IMT-2020 |
| [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  [Q4/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q4.aspx): Broadband access over metallic conductors |
| [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  [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals  [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 for IoT and SC&C |

| [WP 5D](https://www.itu.int/go/ITU-R/wp5d): IMT Systems | |
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| ITU-T SG | ITU-T SG Questions |
| [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](https://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](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx): Achieving energy efficiency and smart energy |
| [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  [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  [Q10/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q10.aspx): Work programme, coordination and planning |
| [SG11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/default.aspx) | [Q6/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q6.aspx): Protocols supporting control and management technologies for IMT-2020  [Q7/11:](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q7.aspx) Signalling requirements and protocols for network attachment including mobility and resource management for future networks and IMT-2020  [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  [Q10/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q10.aspx): Testing of emerging IMT-2020 technologies |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q7/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q7.aspx): Methods, tools and test plans for the subjective assessment of speech, audio and audiovisual quality interactions  [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  [Q10/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q10.aspx): Conferencing and telemeeting assessment  [Q13/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q13.aspx): Quality of experience (QoE), quality of service (QoS) and performance requirements and assessment methods for multimedia  [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  [Q17/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/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  [Q16/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q16.aspx): Knowledge-centric trustworthy networking and services  [Q20/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q20.aspx): IMT-2020: Network requirements and functional architecture  [Q23/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q23.aspx): Fixed-Mobile Convergence including IMT-2020 |
| [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  [Q4/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q4.aspx): Broadband access over metallic conductors  [Q12/15: Transport network architectures](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q12.aspx) |
| [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  [Q21/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q21.aspx): Multimedia framework, applications and services |
| [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 |
| [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  [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx): Requirements, capabilities, and use cases across verticals  [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-R SG 6 Working Parties 6A, 6B, 6C vis-à-vis ITU-T Questions

| [WP 6A](https://www.itu.int/go/ITU-R/wp6a): Terrestrial broadcasting delivery | |
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| ITU-T SG | ITU-T SG Questions |
| [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) |
| [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  [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  [Q10/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q10.aspx): Work programme, coordination and planning |
| [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  [Q4/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q4.aspx): Broadband access over metallic conductors  [Q15/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q15.aspx): Communications for Smart Grid  [Q18/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q18.aspx): Broadband in-premises networking |

| [WP 6B](https://www.itu.int/go/ITU-R/wp6b): Broadcast service assembly and access | |
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| ITU-T SG | ITU-T SG Questions |
| [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  [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)  [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  [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  [Q8/9](https://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) | [Q13/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q13.aspx): Quality of experience (QoE), quality of service (QoS) and performance requirements and assessment methods for multimedia  [Q17/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/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) | [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](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q1.aspx): Coordination of Access and Home Network Transport Standards  [Q4/15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q4.aspx): Broadband access over metallic conductors  [Q12/15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q12.aspx): Transport network architectures  [Q18/15](https://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  [Q6/16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q6.aspx): Visual coding  [Q8/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q8.aspx): Immersive live experience systems and services  [Q13/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q13.aspx): Multimedia application platforms and end systems for IPTV |

| [WP 6C](https://www.itu.int/go/ITU-R/wp6c): Programme production and quality assessment | |
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| ITU-T SG | ITU-T SG Questions |
| [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [Q7/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q7.aspx): Methods, tools and test plans for the subjective assessment of speech, audio and audiovisual quality interactions  [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 and tools for multimedia quality assessment of packet-based video services  [Q18/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q18.aspx): Measurement and control of the end-to-end quality of service (QoS) for advanced television technologies, from image acquisition to rendering, in contribution, primary distribution and secondary distribution networks  [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 |
| [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  [Q8/16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q8.aspx): Immersive live experience systems and services  [Q26/16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx): Accessibility to multimedia systems and services |

| **Inter-Sector Rapporteur Groups** | |
| --- | --- |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx)  [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [IRG-AVA](https://www.itu.int/en/irg/ava/Pages/default.aspx): Intersector Rapporteur Group Audiovisual Media Accessibility  [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx)  [SG12](https://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/default.aspx) | [IRG-AVQA](http://www.itu.int/en/irg/avqa/Pages/default.aspx): Intersector Rapporteur Group Audiovisual Quality Assessment |
| [SG9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/default.aspx)  [SG16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/default.aspx) | [IRG-IBB](https://www.itu.int/en/irg/ibb/Pages/default.aspx): Integrated Broadcast-Broadband (IBB)  [Q1/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx): Multimedia coordination |

ITU-R SG 7 Working Parties 7A, 7B, 7C, &d vis-à-vis ITU-T Questions

| [WP 7A](https://www.itu.int/go/ITU-R/wp7a): Time signals and frequency standard emissions: Systems and applications (terrestrial and satellite) for dissemination of standard time and frequency signals | |
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| ITU-T SG | ITU-T SG Questions |
| [SG15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx) | [Q13/15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q13.aspx): Network synchronization and time distribution performance |

| [WP 7B](https://www.itu.int/go/ITU-R/wp7b): Space radiocommunication applications: Systems for transmission/reception of telecommand, tracking and telemetry data for space operation, space research, Earth exploration-satellite, and meteorological satellite services | |
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| ITU-T SG | ITU-T SG Questions |

| [WP 7C](https://www.itu.int/go/ITU-R/wp7c): Remote sensing systems: active and passive remote sensing applications in the Earth exploration-satellite service and systems of the MetAids service, as well as space research sensors, including planetary sensors | |
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| ITU-T SG | ITU-T SG Questions |

| [WP 7D](https://www.itu.int/go/ITU-R/wp7d): Radio astronomy: radio astronomy and radar astronomy sensors, both Earth-based and space-based, including space very long baseline interferometry (VLBI) | |
| --- | --- |
| ITU-T SG | ITU-T SG Questions |
|  |  |

**Table 2 – Matrix of ITU-R WPs and ITU-T Questions**

|  | | **ITU-R SG1** | | | **ITU-R SG3** | | | | **ITU-R SG4** | | | **ITU-R SG5** | | | | **ITU-R SG6** | | | **ITU-R SG7** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [WP 1A](https://www.itu.int/go/ITU-R/wp1a) | [WP 1B](https://www.itu.int/go/ITU-R/wp1b) | [WP 1C](https://www.itu.int/go/ITU-R/wp1c) | [WP 3J](https://www.itu.int/go/ITU-R/wp3j) | [WP 3K](https://www.itu.int/go/ITU-R/wp3k) | [WP 3L](https://www.itu.int/go/ITU-R/wp3l) | [WP 3M](https://www.itu.int/go/ITU-R/wp3m) | [WP 4A](https://www.itu.int/go/ITU-R/wp4a) | [WP 4B](https://www.itu.int/go/ITU-R/wp4b) | [WP 4C](https://www.itu.int/go/ITU-R/wp4c) | [WP 5A](https://www.itu.int/go/ITU-R/wp5a) | [WP 5B](https://www.itu.int/go/ITU-R/wp5b) | [WP 5C](https://www.itu.int/go/ITU-R/wp5c) | [WP 5D](https://www.itu.int/go/ITU-R/wp5d) | [WP 6A](https://www.itu.int/go/ITU-R/wp6a) | [WP 6B](https://www.itu.int/go/ITU-R/wp6b) | [WP 6C](https://www.itu.int/go/ITU-R/wp6c) | [WP 7A](https://www.itu.int/go/ITU-R/wp7a) | [WP 7B](https://www.itu.int/go/ITU-R/wp7b) | [WP 7C](https://www.itu.int/go/ITU-R/wp7c) | [WP 7D](https://www.itu.int/go/ITU-R/wp7d) |
| **ITU-T SG2** | [Q1/2](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q1.aspx) |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |
| [Q3/2](http://www.itu.int/en/ITU-T/studygroups/2017-2020/02/Pages/q3.aspx) |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |
| **ITU-T SG3** | [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 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [Q4/3](https://www.itu.int/en/ITU-T/studygroups/2017-2020/03/Pages/q4.aspx) |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ITU-T SG5** | [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 |  |  |  |  | X |  |  | X | X | X | X | X |  |  |  |  |  |  |
| [Q4/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q4.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| [Q6/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q6.aspx) | X | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| [Q9/5](https://www.itu.int/en/ITU-T/studygroups/2017-2020/05/Pages/q9.aspx) |  | X |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| **ITU-T SG9** | [Q1/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q1.aspx) |  |  | X |  |  |  |  | X |  |  |  |  |  | X | X | X |  |  |  |  |  |
| [Q2/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q2.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |
| [Q5/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q5.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |
| [Q7/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q7.aspx) |  |  |  |  |  |  |  | X |  |  |  |  |  | X | X | X |  |  |  |  |  |
| [Q8/9](https://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q8.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |
| [Q10/9](http://www.itu.int/en/ITU-T/studygroups/2017-2020/09/Pages/q10.aspx) |  |  |  | X | X | X | X |  |  | X |  |  | X | X | X |  |  |  |  |  |  |
| **ITU-T SG11** | [Q6/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q6.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| [Q7/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q7.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| [Q8/11](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q8.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| [Q10/11](http://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/q10.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| **ITU-T SG12** | [Q1/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q1.aspx) |  |  |  |  |  |  |  |  | X |  | X |  | X |  |  |  |  |  |  |  |  |
| [Q7/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q7.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |
| [Q9/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q9.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |
| [Q10/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q10.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| [Q12/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q12.aspx) |  |  |  |  |  |  |  |  | X |  | X |  | X |  |  |  |  |  |  |  |  |
| [Q13/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q13.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  | X |  |  |  |  |  |
| [Q14/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q14.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |
| [Q17/12](http://www.itu.int/en/ITU-T/studygroups/2017-2020/12/Pages/q17.aspx) |  |  |  |  |  |  |  |  | X |  | X |  | X | X |  | 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** | [Q5/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q5.aspx) |  |  |  |  |  |  |  |  | X |  | X |  | X | X |  |  |  |  |  |  |  |
| [Q2/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q2.aspx) |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |
| [Q16/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q16.aspx) |  |  |  |  |  |  |  |  |  |  | X |  | X | X |  |  |  |  |  |  |  |
| [Q20/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q20.aspx) |  |  |  |  |  |  |  |  |  |  |  |  | X | 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) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [Q23/13](http://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/q23.aspx) |  |  |  |  |  |  |  |  | X |  | X |  | X | X |  |  |  |  |  |  |  |
| **ITU-T SG15** | [Q1/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q1.aspx) | X |  |  |  |  |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |
| [Q4/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q4.aspx) | X |  |  |  |  |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |
| [Q12/15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q12.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  | X |  |  |  |  |  |
| [Q13/15](https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q13.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| [Q15/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q15.aspx) | X |  |  |  |  |  |  |  |  |  | X |  |  |  | X |  |  |  |  |  |  |
| [Q18/15](http://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/q18.aspx) | X |  |  |  |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |
| **ITU-T SG16** | [Q1/16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q1.aspx) |  |  |  |  |  |  |  |  | X | X | X |  |  | X | ~~X~~ | X | X |  |  |  |  |
| [Q6/16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q6.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |
| [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 |  |  |  |  |  |
| [Q21/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q21.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| [Q24/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q24.aspx) |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |
| [Q26/16](https://www.itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q26.aspx) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| [Q27/16](http://itu.int/en/ITU-T/studygroups/2017-2020/16/Pages/q27.aspx) |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |
| **ITU-T SG17** | [Q6/17](http://www.itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q6.aspx) |  |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |
| [Q13/17](http://itu.int/en/ITU-T/studygroups/2017-2020/17/Pages/q13.aspx) |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |
| **ITU-T SG20** | [Q1/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q1.aspx) |  |  |  |  |  |  |  |  | X |  | X |  | X | X |  |  |  |  |  |  |  |
| [Q2/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q2.aspx) |  |  |  |  |  |  |  |  | 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 | X |  |  |  |  |  |  | X |  | X |  | X | X |  |  |  |  |  |  |  |
| [Q6/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q6.aspx) |  |  |  |  |  |  |  |  | X |  | X |  | X | X |  |  |  |  |  |  |  |
| [Q7/20](http://www.itu.int/en/ITU-T/studygroups/2017-2020/20/Pages/q7.aspx) | X | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |

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