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| World Telecommunication Standardization Assembly (WTSA-20) Geneva, 1-9 March 2022 |  | |
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| PLENARY MEETING | Document | 15-E |
|  | January 2022 | |
|  | Original: English | |
|  | | |
| ITU‑T Study Group 15 | | |
| Networks, Technologies and Infrastructures for Transport, Access and Home | | |
| Report of ITU-T SG15 to the World Telecommunication Standardization Assembly (WTSA-20), Part I: GENERAL | | |

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| **Abstract:** | This contribution contains the report of ITU-T Study Group 15 to WTSA-20 concerning its activities during the 2017-2021 study period. | |
| **Contact:** | Stephen J. Trowbridge Nokia USA | Tel: +1 303 809 7423 E-mail: [steve.trowbridge@nokia.com](mailto:steve.trowbridge@nokia.com) |

Note by the TSB:

The report of Study Group 15 to the WTSA-20 is presented in the following documents:

Part I: **Document 15** – General

Part II: **Document 16** – Questions proposed for study during the study period 2022-2024

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# 1 Introduction

## 1.1 Responsibilities of Study Group 15

Study Group 15 was entrusted by the World Telecommunications Standardization Assembly (Hammamet, 2016) with the study of 19 Questions in the area of the development of standards on optical transport network, access network, home network and power utility network infrastructures, systems, equipment, optical fibres and cables, and their related installation, maintenance, management, test, instrumentation and measurement techniques, and control plane technologies to enable the evolution toward intelligent transport networks, including the support of smart-grid applications. This encompasses the development of related standards for the customer premises, access, metropolitan and long-haul sections of communication networks, as well as for power utility networks and infrastructures from transmission to load.

## 1.2 Management team and meetings held by Study Group 15

Study Group 15 met eight times in Plenary in the course of the study period (see Table 1) under the chairmanship of Dr. Stephen Trowbridge (Nokia, USA) assisted by Mr. Khaled Al-Azemi (Kuwait), Mr. Fahad Alfallaj (Saudi Arabia), Mr. Noriyuki Araki (NTT, Japan), Mr. Edoardo Cottino (Italy), Mr. Dan Li (Huawei, China), Mr. Hubert Mariotte (Orange, France), Mr. John Messenger (ADVA Optical Networking Ltd., UK), Mr. Glenn Parsons (Ericsson, Canada), Mr. Jeong-dong Ryoo (ETRI, Korea) and Mr. Cyrille Vivien Vezongada (Central African Republic).

In addition, many Rapporteurs’ meetings (including e-meetings) took place during the study period in different locations, see Table 1-bis.

TABLE 1  
Meetings of Study Group 15 and its Working Parties

| Meetings | Place, date | Reports |
| --- | --- | --- |
| Study Group 15 | Geneva, 19 - 30 June 2017 | SG15-R 1 to R 4 |
| Study Group 15 | Geneva, 29 January - 09 February 2018 | SG15-R 5 to R 8 |
| Study Group 15 | Geneva, 08 - 19 October 2018 | SG15-R 9 to R 13 |
| Study Group 15 | Geneva, 01 - 12 July 2019 | SG15-R 14 to R 19 |
| Study Group 15 | Geneva, 27 January - 07 February 2020 | SG15-R 20 to R 23 |
| Study Group 15 | E-Meeting, 07 - 18 September 2020 | SG15-R 24 to R 27 |
| Study Group 15 | E-Meeting, 12 - 23 April 2021 | SG15-R 28 to R 31 |
| Study Group 15 | E-Meeting, 06 - 17 December 2021 | SG15-R 32 to R 35 |

TABLE 1-bis  
Rapporteur meetings organized under Study Group 15 during the study period

| **Dates** | **Place/Host** | **Question(s)** | **Event name** |
| --- | --- | --- | --- |
| 2016-11-03 | E-Meeting | Q4/15 | G.fast/DSL |
| 2016-11-08 | E-Meeting | Q18/15 | G.hn |
| 2016-11-16 to 2016-11-17 | China | Q2/15 | All topics under study |
| 2016-11-14 to 2016-11-18 | China / Huawei | Q4/15 | DSL and G.fast |
| 2016-11-29 | E-Meeting | Q18/15 | G.vlc |
| 2016-12-01 | E-Meeting | Q4/15 | G.fast (LCC/deferred contributions) |
| 2016-12-15 | E-Meeting | Q2/15 | All topics under study |
| 2016-12-12 to 2016-12-16 | China [Shanghai] | Q13/15 | Q13 Interregnum meeting on Synchronization |
| 2017-01-11 | E-Meeting | Q4/15 | DSL |
| 2017-01-10 to 2017-01-13 | Israel [Tel Aviv] | Q18/15 | All question 18 items |
| 2017-01-17 | E-Meeting | Q15/15 | ALL Question 15 items |
| 2017-01-18 | E-Meeting | Q4/15 | G.fast (LCC/deferred contributions) |
| 2017-01-16 to 2017-01-19 | United States / Finisar | Q6/15 | Q6/15 interim meeting |
| 2017-01-24 | E-Meeting | Q2/15 | All topics under study |
| 2017-02-06 to 2017-02-10 | Israel [Tel Aviv] / Sckipio Technologies | Q4/15 | DSL and G.fast |
| 2017-02-16 | E-Meeting | Q4/15 Q18/15 | Joint Q4/15 and Q18/15 meeting on G.dpm project |
| 2017-02-21 | E-Meeting | Q2/15 | All topics under study |
| 2017-02-23 | E-Meeting | Q4/15 | LCC resolution G.fast, G.lt, G.vdsl |
| 2017-02-20 to 2017-02-24 | China [Beijing] / CATR | Q12/15 Q14/15 | Q12 and Q14 Joint Interregnum Meeting on SDN, ASON, DCN: Management requirements and information models |
| 2017-02-20 to 2017-02-24 | Canada [Vancouver] | Q11/15 | Interregnum meeting of Q11/15 |
| 2017-02-27 | E-Meeting | Q18/15 | Q18/15 meeting |
| 2017-03-13 | E-Meeting | Q4/15 | DSL and G.fast |
| 2017-03-13 | E-Meeting | Q18/15 | Q18/15 meeting |
| 2017-03-15 | E-Meeting | Q4/15 | All projects: new contributions |
| 2017-03-27 | E-Meeting | Q15/15 | All Question 15 items |
| 2017-03-28 | E-Meeting | Q2/15 | All topics under study |
| 2017-03-27 to 2017-03-31 | United States [San Jose, California] | Q13/15 | ITU-T SG15 Q13 Interregnum meeting on Synchronization |
| 2017-04-03 to 2017-04-07 | United States / ADTRAN and AT&T | Q4/15 | DSL and G.fast |
| 2017-04-03 to 2017-04-07 | Japan [Tokyo] | Q9/15 Q10/15 Q14/15 | Joint interim meeting of Q9, 10, 14/15 |
| 2017-04-19 to 2017-04-22 | China [Chengdu] / Huawei | Q18/15 | All question 18 items |
| 2017-04-27 | E-Meeting | Q4/15 Q18/15 | Joint Q4/15 and Q18/15 meeting on G.dpm project |
| 2017-04-26 to 2017-04-27 | Japan [Kobe] / NTT | Q2/15 | Q2/15 meeting |
| 2017-05-03 | E-Meeting | Q4/15 | All projects (except G.dpm) |
| 2017-05-09 | E-Meeting | Q15/15 | All question 15 items |
| 2017-05-23 | E-Meeting | Q4/15 | All projects (except G.dpm) |
| 2017-05-24 | E-Meeting | Q18/15 | Q18/15 meeting on G.9978 |
| 2017-05-25 | E-Meeting | Q18/15 | Q18/15 meeting on G.hn 2.0 |
| 2017-05-30 | E-Meeting | Q2/15 | All topics under study |
| 2017-07-25 | E-Meeting | Q2/15 | Documents under study |
| 2017-08-07 | E-Meeting | Q18/15 | G.vlc - DQ contention-based protocol |
| 2017-08-20 to 2017-08-23 | Spain [Barcelona] / Maxlinear | Q18/15 | G.hn, G.vlc and G.occ |
| 2017-08-30 | E-Meeting | Q12/15 Q14/15 | Q12/15 & Q14/15 e-meeting on G.7702 |
| 2017-09-04 | E-Meeting | Q18/15 | LC comment resolution |
| 2017-09-05 | E-Meeting | Q4/15 | LCC G.9701 and G.997.2 |
| 2017-09-07 | E-Meeting | Q4/15 | LCC DSL Recs |
| 2017-09-07 to 2017-09-08 | France [Paris] | Q2/15 | All projects |
| 2017-09-19 | E-Meeting | Q18/15 | LC comment resolution |
| 2017-09-20 | E-Meeting | Q18/15 | G.hn preamble |
| 2017-09-18 to 2017-09-22 | Canada / Ericsson Canada, Ciena Canada | Q12/15 Q14/15 | ITU-T Q12 and Q14 Joint Interim Meeting on SDN, ASON, DCN and Information/Data Models |
| 2017-09-25 to 2017-09-29 | Germany / [Darmstadt] DTAG | Q4/15 | All projects (except G.dpm) |
| 2017-10-03 | E-Meeting | Q15/15 | Q15 interim - All topics |
| 2017-10-10 | E-Meeting | Q2/15 | Document under study |
| 2017-10-11 | E-Meeting | Q4/15 | LCC DSL G.mgfast overflow |
| 2017-10-09 to 2017-10-13 | New-Zealand [Auckland] | Q13/15 | Q13 Interim meeting on Synchronization |
| 2017-10-16 | E-Meeting | Q18/15 | LC comment resolution |
| 2017-10-17 | E-Meeting | Q4/15 | LCC G.fast |
| 2017-10-16 to 2017-10-19 | China [Hangzhou] | Q6/15 | Q6/15 interim meeting |
| 2017-10-16 to 2017-10-20 | Switzerland [Geneva] / ITU | Q11/15 Q12/15 | Joint Q11, Q12 meeting on transport for IMT2020/5G TR |
| 2017-10-24 | E-Meeting | Q4/15 | LCC DSL |
| 2017-10-25 | E-Meeting | Q8/15 | Progress in the preparation of the new recommendation G.977.1 |
| 2017-10-24 to 2017-10-27 | Switzerland [Geneva] / ITU | Q18/15 | All projects |
| 2017-10-31 | E-Meeting | Q4/15 | LCC G.mgfast overflow |
| 2017-11-02 | E-Meeting | Q18/15 | Q18/15 - LC comment resolution |
| 2017-11-07 | E-Meeting | Q4/15 | Q4/15 (LCC and G.lt project) |
| 2017-11-08 | E-Meeting | Q18/15 | Q18/15 - LC comment resolution |
| 2017-11-14 | E-Meeting | Q2/15 | Q2/15 |
| 2017-11-23 | E-Meeting | Q18/15 | Q18/15 - All topics |
| 2017-11-30 | E-Meeting | Q12/15 Q14/15 | Joint Q12/15 and Q14/15 e-meeting on G.7702 |
| 2017-11-27 to 2017-12-01 | United States / [New Orleans, LA] Intel | Q4/15 | Q4/15 - All projects (except G.dpm) |
| 2017-12-04 to 2017-12-08 | United Kingdom [London] / Ciena | Q14/15 | Q14/15 ( management and DCN) |
| 2017-12-11 | E-Meeting | Q18/15 | Q18/15 - Technical paper on fiber access |
| 2017-12-14 | China [Shanghai] | Q2/15 | All projects |
| 2017-12-15 | E-Meeting | Q15/15 | Q15/15 |
| 2018-01-28 | Switzerland [Geneva] | Q14/15 | Q14/15 (Information and Data Model coordination) |
| 2018-02-28 | E-Meeting | Q4/15 Q18/15 | Q4/15 and Q18/15 - Access and home coordination |
| 2018-03-06 | E-Meeting | Q18/15 | Q18/15 on MLC constellations / G.hn2 |
| 2018-03-13 | E-Meeting | Q18/15 | Q18/15 - Smart grid / PHX Header |
| 2018-03-14 | E-Meeting | Q4/15 Q18/15 | Q4/15 and Q18/15 - Access and home coordination |
| 2018-03-19 | E-Meeting | Q14/15 | Modelling Coordination |
| 2018-03-20 | E-Meeting | Q2/15 | Q2/15 - All topics under study |
| 2018-03-22 | E-Meeting | Q4/15 | Q4/15 - LCC |
| 2018-03-29 | E-Meeting | Q12/15 Q14/15 | Q12/15 & Q14/15 - Liaison response to 3GPP |
| 2018-04-12 | E-Meeting | Q4/15 | Q4/15 - LCC DSL |
| 2018-04-09 to 2018-04-12 | Israel [Tel Aviv] | Q18/15 | All Q18/15 topics |
| 2018-04-16 | E-Meeting | Q14/15 | Modelling Coordination |
| 2018-04-17 | E-Meeting | Q2/15 | Q2/15 - All topics under study |
| 2018-04-19 | E-Meeting | Q4/15 | Q4/15 - LCC |
| 2018-04-23 to 2018-04-27 | China [Shanghaï] / Huawei | Q4/15 | Q4/15 - All projects (except G.dpm) |
| 2018-05-08 | E-Meeting | Q4/15 | Q4/15 - LCC and liaison review |
| 2018-05-15 | E-Meeting | Q2/15 | Q2/15 - All topics under study |
| 2018-05-14 to 2018-05-18 | China [Nanjing] / FiberHome | Q12/15 Q14/15 | ITU-T Q12 and Q14 Joint Interim Meeting on SDN for 5G, MCC, G.media, and Management |
| 2018-05-21 | E-Meeting | Q14/15 | Modelling Coordination |
| 2018-05-23 | E-Meeting | Q18/15 | Q18/15 - MLC Contributions |
| 2018-05-30 | E-Meeting | Q4/15 | LCC and G.mgfast overflow |
| 2018-05-31 | E-Meeting | Q18/15 | Q18/15 - All topics |
| 2018-06-04 | E-Meeting | Q10/15 | G.8011 Correspondence Activity Opening |
| 2018-06-05 | E-Meeting | Q18/15 | Q18/15 - MLC decision followed by any G.hn2 contributions |
| 2018-06-06 | E-Meeting | Q4/15 | LCC and G.mgfast overflow |
| 2018-06-04 to 2018-06-08 | China [Beijing] / China Telecom and Huawei | Q11/15 | Q11/15 - 5G transport, sub ODU0 client support, G.8023, FlexO |
| 2018-06-11 to 2018-06-14 | Germany / Böblingen | Q6/15 | Q6/15 meeting |
| 2018-06-11 to 2018-06-15 | United States [San Jose, California] / Integrated Device Technology | Q13/15 | Q13/15 meeting on synchronization |
| 2018-06-21 | E-Meeting | Q18/15 | Q18/15 - All topics |
| 2018-06-20 to 2018-06-21 | Japan [Osaka] | Q2/15 | Q2/15 - All projects under study |
| 2018-06-25 | E-Meeting | Q14/15 | Modelling Coordination |
| 2018-06-29 | E-Meeting | Q10/15 | G.8011 Correspondence Activity closing call |
| 2018-06-25 to 2018-06-29 | Belgium / Antwerp / Nokia | Q4/15 | Q4/15 - All projects (except G.dpm) |
| 2018-07-05 | E-Meeting | Q18/15 | Q18/15 All topics |
| 2018-07-16 | E-Meeting | Q14/15 | Modelling Coordination |
| 2018-07-17 | E-Meeting | Q2/15 | Q2/15 - All topics under study |
| 2018-08-06 to 2018-08-09 | China [Shenzhen] / Huawei | Q18/15 | All Q18/15 topics |
| 2018-08-06 to 2018-08-10 | Sweden [Stockholm] / Ericsson | Q14/15 | Q14/15 - Interim meeting on DCN, Management requirememts and information/data models |
| 2018-08-27 | E-Meeting | Q14/15 | Modelling Coordination |
| 2018-08-27 to 2018-08-31 | Germany [Berlin] / ADTRAN | Q4/15 | Q4/15 - All projects (except G.dpm) |
| 2018-09-04 | E-Meeting | Q18/15 | Q18/15 e-meeting |
| 2018-09-04 | E-Meeting | Q2/15 | Q2/15 - All topics under study |
| 2018-09-05 | E-Meeting | Q18/15 | Q18/15 e-meeting |
| 2018-09-17 | E-Meeting | Q14/15 | Modelling Coordination |
| 2018-09-18 | E-Meeting | Q18/15 | Q18/15 e-meeting |
| 2018-11-19 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (series of 8 virtual meetings) |
| 2018-11-20 | E-Meeting | Q2/15 | Q2/15 - All documents under study |
| 2018-11-20 | E-Meeting | Q4/15 | Q4/15 - G.mgfast |
| 2018-12-04 | E-Meeting | Q18/15 | Q18/15 - Smart Grid |
| 2018-12-05 | E-Meeting | Q18/15 | Q18/15 - G.hn2 |
| 2018-12-06 | E-Meeting | Q18/15 | Q18/15 - G.occ/G.vlc LCC |
| 2018-12-17 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (series of 8 virtual meetings) |
| 2018-12-18 | E-Meeting | Q4/15 | Q4/15 - LCC DSL projects |
| 2018-12-18 | E-Meeting | Q2/15 | Q2/15 - All documents under study |
| 2019-01-08 | E-Meeting | Q4/15 | Q4/12 - LCC all projects |
| 2019-01-10 | E-Meeting | Q4/15 | Q4/15 - LCC all projects |
| 2019-01-09 to 2019-01-10 | United States / Huawei Technologies | Q2/15 | Q2/15 - All documents under study |
| 2019-01-14 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (series of 8 virtual meetings) |
| 2019-01-15 | E-Meeting | Q18/15 | Q18/15 - Smart Grid |
| 2019-01-16 | E-Meeting | Q18/15 | Q18/15 - G.hn2 |
| 2019-01-17 | E-Meeting | Q18/15 | Q18/15 - G.occ/G.vlc LCC |
| 2019-01-21 to 2019-01-25 | China [Wuhan] / FiberHome Technologies Group | Q12/15 Q14/15 | Joint 12/15 and 14/15 -- Common interest topics |
| 2019-01-21 to 2019-01-25 | United States / Broadcom/Irvine | Q4/15 | Q4/15 - All projects (except G.dpm) |
| 2019-01-28 to 2019-01-31 | United Kingdom [London] / Ciena | Q6/15 | Q6/15 |
| 2019-02-05 | E-Meeting | Q4/15 | Q4/15 - G.9701/G.997.2 LCC - G.mgfast overflow |
| 2019-02-12 | E-Meeting | Q2/15 | Q2/15 - All documents under study |
| 2019-02-18 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (series of 8 virtual meetings) |
| 2019-02-18 to 2019-02-22 | Israel [Tel Aviv] / ISSI | Q18/15 | Q18/15 - All projects |
| 2019-02-26 | E-Meeting | Q4/15 | Q4/15 - G.mgfast |
| 2019-02-25 to 2019-03-01 | Switzerland [Geneva] | Q11/15 | Q11/15 - All topics except: G.ctn5g; G.sup.5gotn; G.mtn |
| 2019-03-12 | E-Meeting | Q2/15 | Q2/15 - All documents under study |
| 2019-03-18 to 2019-03-22 | United States [San Jose, California] / Microsemi | Q13/15 | Q13/15 - Meeting on synchronization |
| 2019-04-01 to 2019-04-05 | Switzerland [Geneva] / ITU | Q4/15 | Q4/15 - All projects (except G.dpm) |
| 2019-04-11 | E-Meeting | Q18/15 | Q18/15 - All topics |
| 2019-04-11 to 2019-04-12 | China [Xian] / Cambridge Industries | Q2/15 | Q2/15 - All documents under study |
| 2019-04-08 to 2019-04-12 | China [Xian] / China Mobile, Huawei | Q11/15 | Q11/15 - G.ctn5g; G.sup.5gotn; G.mtn |
| 2019-04-08 to 2019-04-12 | China [Xian] / China Mobile, Huawei | Q14/15 | Q14/15 |
| 2019-04-15 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (series of 8 virtual meetings) |
| 2019-04-16 | E-Meeting | Q11/15 | Q11/15 - FEC correspondence |
| 2019-05-14 | E-Meeting | Q2/15 | Q2/15 - All documents under study |
| 2019-05-15 | E-Meeting | Q4/15 | Q4/15- All projects |
| 2019-05-20 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (series of 8 virtual meetings) |
| 2019-05-22 | E-Meeting | Q2/15 | Q2/15 Overflow |
| 2019-05-20 to 2019-05-24 | Germany / Bayernwerk AG | Q18/15 | Q18/15 - All projects |
| 2019-05-28 | E-Meeting | Q11/15 | Q11/15 - FEC correspondence |
| 2019-06-05 | E-Meeting | Q4/15 | Q4/15- All projects |
| 2019-06-11 | E-Meeting | Q2/15 | Q2/15 - All documents under study |
| 2019-06-11 | E-Meeting | Q18/15 | Q18/15 RGM |
| 2019-06-17 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (series of 8 virtual meetings) |
| 2019-08-13 | E-Meeting | Q2/15 | All documents under development |
| 2019-09-09 | E-Meeting | Q14/15 | Modelling Coordination (series of 4 virtual meetings) |
| 2019-09-09 to 2019-09-12 | Switzerland [Geneva] / ITU | Q18/15 | All Q18/15 |
| 2019-09-17 | E-Meeting | Q2/15 | All documents under development |
| 2019-09-19 | E-Meeting | Q4/15 | LC comment resolution |
| 2019-09-17 to 2019-09-20 | Sweden [Göteborg] / Ericsson | Q14/15 | ITU-T Q14/15 Interim Meeting |
| 2019-09-16 to 2019-09-20 | Sweden [Göteborg] / Ericsson | Q11/15 Q12/15 | Joint Q11 and Q12 meeting - MTN-related topics |
| 2019-09-23 to 2019-09-27 | Spain [Madrid] / ASSIA | Q4/15 | All projects (except G.dpm) |
| 2019-09-30 | E-Meeting | Q14/15 | Modelling Coordination (series of 4 virtual meetings) |
| 2019-09-30 | E-Meeting | Q14/15 | Q14/15 e-meeting |
| 2019-10-02 | E-Meeting | Q18/15 | All Q18/15 |
| 2019-10-07 | E-Meeting | Q14/15 | Q14/15 e-meeting |
| 2019-10-08 | E-Meeting | Q14/15 | Q14/15 e-meeting |
| 2019-10-15 | E-Meeting | Q4/15 | LCC and all projects |
| 2019-10-14 to 2019-10-18 | France [Lannion] / Orange, Nokia | Q13/15 | ITU-T Q13/15 interim meeting on synchronization |
| 2019-10-23 | E-Meeting | Q18/15 | Q18/15 - LC comment resolution for G.9960 amd1 and G.9961 amd1 |
| 2019-10-21 to 2019-10-24 | Germany / Vodafone | Q2/15 | All documents under development |
| 2019-10-21 to 2019-10-25 | Korea (Rep. of) [Seoul] / ETRI | Q12/15 Q14/15 | ITU-T Q12/15 and Q14/15 Joint Interim Meeting |
| 2019-10-28 | E-Meeting | Q14/15 | Modelling Coordination (series of 5 virtual meetings) |
| 2019-10-29 to 2019-10-31 | Switzerland [Geneva] / ITU | Q6/15 | ITU-T Q6/15 interim meeting |
| 2019-10-28 to 2019-11-01 | Netherlands [Amsterdam] / Huawei | Q11/15 | Q11 - non-5G specific topics |
| 2019-11-04 | E-Meeting | Q14/15 | Modelling Coordination (series of 5 virtual meetings) |
| 2019-11-11 | E-Meeting | Q14/15 | Q14/15 - G.874 and G.7710 alignment |
| 2019-11-11 to 2019-11-15 | Switzerland [Geneva] / ITU | Q4/15 | All projects (except G.dpm) |
| 2019-11-19 | E-Meeting | Q18/15 | Q18/15 - G.9960 amd1 and G.9961 amd1 LC comment resolution |
| 2019-11-19 | E-Meeting | Q2/15 | All documents under development |
| 2019-11-20 | E-Meeting | Q14/15 | Q14/15 - G.875 modeling |
| 2019-11-25 | E-Meeting | Q14/15 | Q14/15 - G.874 and G.7710 alignment |
| 2019-11-26 | E-Meeting | Q2/15 | Q2/15 - overflow meeting from 19 Nov. 2019 |
| 2019-12-02 | E-Meeting | Q14/15 | Q14/15 - G.875 modeling |
| 2019-12-03 | E-Meeting | Q14/15 | Q14/15 - G.7718 drafting |
| 2019-12-09 to 2019-12-12 | Spain [Barcelona] / MaxLinear | Q18/15 | All Q18/15 |
| 2019-12-16 | E-Meeting | Q14/15 | Q14/15 - G.875 modeling |
| 2019-12-17 | E-Meeting | Q14/15 | Q14/15 - G.875 modeling |
| 2019-12-17 | E-Meeting | Q2/15 | All documents under development |
| 2020-01-13 | E-Meeting | Q14/15 | Modelling Coordination (series of 5 virtual meetings) |
| 2020-01-13 | E-Meeting | Q18/15 | Q18/15 - LC comment resolution on G.9960 amd1 and G.9961 amd1 and review of draft texts for consent or agreement |
| 2020-01-14 | E-Meeting | Q2/15 | All documents under development |
| 2020-03-03 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects |
| 2020-03-10 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (G.8052.1 and G.8052.2) (series of 6 virtual meetings) |
| 2020-03-11 | E-Meeting | Q14/15 | G.876 Drafting (series of 3 virtual meetings) |
| 2020-03-17 | E-Meeting | Q18/15 | Q18/15 Rapporteur meeting - All topics (LCC resolution and any contributions) |
| 2020-03-17 | E-Meeting | Q4/15 | LC comment resolution |
| 2020-03-24 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects |
| 2020-03-30 to 2020-04-03 | E-Meeting | Q4/15 | Q4/15 Rapporteur e-meeting - All projects (E-meeting sessions take place 14:00-17:00 Geneva time on each day) |
| 2020-04-07 | E-Meeting | Q11/15 | Q11/15 - OTNsec correspondence |
| 2020-04-08 | E-Meeting | Q13/15 | Q13/15 - correspondence on the definition of new time and frequency sync architectures |
| 2020-04-08 | E-Meeting | Q14/15 | Q14/15 - G.876 Drafting (series of 8 virtual meetings) |
| 2020-04-09 | E-Meeting | Q4/15 | Q4/15 - LCC & overflow contributions |
| 2020-04-14 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (G.8052.1 and G.8052.2) (series of 6 virtual meetings) |
| 2020-04-20 to 2020-04-24 | E-Meeting | Q18/15 | Q18/15 Rapporteur e-meeting "Eindhoven" - All projects (e-meeting sessions take place 14:00-17:00 Geneva time on each day) |
| 2020-04-20 to 2020-04-24 | E-Meeting | Q2/15 | Q2/15 Rapporteur e-meeting - All projects (E-meeting sessions take place 15:00-18:00 Geneva time on each day) |
| 2020-04-29 | E-Meeting | Q14/15 | Q14/15 - G.876 Drafting (series of 8 virtual meetings) |
| 2020-04-30 | E-Meeting | Q4/15 | Q4/15 - All projects |
| 2020-05-05 | E-Meeting | Q18/15 | Q18/15 - LC comment resolution |
| 2020-05-06 | E-Meeting | Q11/15 | Q11/15 - G.709.3 |
| 2020-05-06 | E-Meeting | Q14/15 | Q14/15 - G.7718 drafting |
| 2020-05-07 | E-Meeting | Q11/15 | Q11/15 - OTNSec |
| 2020-05-07 | E-Meeting | Q13/15 | Q13/15 - correspondence on the definition of new time and frequency sync architectures |
| 2020-05-12 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (G.8052.1 and G.8052.2) (series of 6 virtual meetings) |
| 2020-05-12 | E-Meeting | Q18/15 | Q18/15 - LC comment resolution |
| 2020-05-12 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects |
| 2020-05-13 | E-Meeting | Q14/15 | Q14/15 - G.876 Drafting (series of 8 virtual meetings) |
| 2020-05-19 | E-Meeting | Q14/15 | Q14/15 - G.7718 drafting |
| 2020-05-19 | E-Meeting | Q4/15 | Q4/15 - All projects |
| 2020-05-19 | E-Meeting | Q18/15 | Q18/15 - LC comment resolution |
| 2020-05-19 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects |
| 2020-05-27 | E-Meeting | Q14/15 | Q14/15 - G.876 Drafting (series of 8 virtual meetings) |
| 2020-06-02 | E-Meeting | Q11/15 | Q11/15 - MTN path OAM correspondence report |
| 2020-06-02 | E-Meeting | Q14/15 | Q14/15 - G.8152.1 and G.8152.2 drafting |
| 2020-06-03 | E-Meeting | Q11/15 | Q11/15 - G.709.3 amendment |
| 2020-06-09 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects |
| 2020-06-09 | E-Meeting | Q14/15 | Q14/15 - G.7718 drafting |
| 2020-06-09 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (G.8052.1 and G.8052.2) (series of 6 virtual meetings) |
| 2020-06-10 | E-Meeting | Q11/15 | Q11/15 - MTN |
| 2020-06-10 | E-Meeting | Q13/15 | Q13/15 - correspondences on the definition of new time and frequency sync architectures and cnPRTC |
| 2020-06-08 to 2020-06-12 | E-Meeting | Q4/15 | Q4/15 Rapporteur e-meeting - All projects (E-meeting session takes place 14:00-17:00 Geneva time on each day) |
| 2020-06-16 | E-Meeting | Q14/15 | Q14/15 - G.8152.1 and G.8152.2 drafting |
| 2020-06-16 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects (overflow from 9 June 2020) |
| 2020-06-17 | E-Meeting | Q14/15 | Q14/15 - G.876 Drafting (series of 8 virtual meetings) |
| 2020-06-18 | E-Meeting | Q12/15 | Q12/15 - G.7701 contributions to correspondence |
| 2020-06-22 | E-Meeting | Q11/15 | Q11/15 - Sub-1G transport |
| 2020-06-23 | E-Meeting | Q11/15 | Q11/15 - Sub-1G transport |
| 2020-06-24 | E-Meeting | Q11/15 | Q11/15 - Path OAM mechanism |
| 2020-06-26 | E-Meeting | Q4/15 | Q4/15 - All projects |
| 2020-06-29 | E-Meeting | Q14/15 | Q14/15 - G.8152.1 and G.8152.2 drafting |
| 2020-06-29 | E-Meeting | Q6/15 | Q6/15 - 25G applications in revised G.698.1 and G.698.4 |
| 2020-06-30 | E-Meeting | Q11/15 | Q11/15 - Sub-1G transport |
| 2020-06-30 | E-Meeting | Q14/15 | Q14/15 - G.7718 drafting |
| 2020-07-01 | E-Meeting | Q6/15 | Q6/15 - 25G applications not covered by approved work items |
| 2020-06-29 to 2020-07-03 | E-Meeting | Q18/15 | Q18/15 Rapporteur e-meeting "Berlin" - All projects (e-meeting session takes place 14:00-17:00 Geneva time on each day) |
| 2020-07-06 | E-Meeting | Q6/15 | Q6/15 - 200G/400 applications in revised G.698.2 |
| 2020-07-07 | E-Meeting | Q11/15 | Q11/15 - G.798 Amd 3 |
| 2020-07-08 | E-Meeting | Q6/15 | Q6/15 - items of common interest to Q11 (constellation mapping in G.698.2) and Q12 (revised G.807) |
| 2020-07-08 | E-Meeting | Q13/15 | Q13/15 - correspondence on cnPRTC and plans for next SG15 meeting |
| 2020-07-09 | E-Meeting | Q11/15 | Q11/15 - G.Sup-otnsec |
| 2020-07-10 | E-Meeting | Q11/15 | Q11/15 - G.mtn correspondence |
| 2020-07-06 to 2020-07-10 | E-Meeting | Q2/15 | Q2/15 Rapporteur e-meeting "Munich" - All projects (e-meeting session takes place 15:00-18:00 Geneva time on each day) |
| 2020-07-13 | E-Meeting | Q14/15 | Q14/15 - G.8152.1 and G.8152.2 drafting |
| 2020-07-14 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (G.8052.1 and G.8052.2) (series of 6 virtual meetings) |
| 2020-07-15 | E-Meeting | Q11/15 | Q11/15 - G.709.1 Amd 2 (and G.709.3 revision) |
| 2020-07-15 | E-Meeting | Q14/15 | Q14/15 - G.876 Drafting (series of 8 virtual meetings) |
| 2020-07-16 | E-Meeting | Q12/15 | Q12/15 - G.7701 Amd.2 |
| 2020-07-21 | E-Meeting | Q18/15 | Q18/15 - All projects |
| 2020-07-21 | E-Meeting | Q11/15 | Q11/15 - G.mtn and G.Sup.mtn-migration |
| 2020-07-21 | E-Meeting | Q14/15 | Q14/15 - G.7718 drafting |
| 2020-07-23 | E-Meeting | Q11/15 | Q11/15 - G.Sup.sub1G |
| 2020-07-27 | E-Meeting | Q14/15 | Q14/15 - G.8152.1 and G.8152.2 drafting |
| 2020-07-27 | E-Meeting | Q6/15 | Q6/15 - Revised G.672 (for consent at the September SG15 virtual meeting) |
| 2020-08-04 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects |
| 2020-08-04 | E-Meeting | Q14/15 | Q14/15 - G.7718 drafting |
| 2020-08-05 | E-Meeting | Q14/15 | Q14/15 - G.876 Drafting (series of 8 virtual meetings) |
| 2020-08-10 | E-Meeting | Q14/15 | Q14/15 - G.8152.1 and G.8152.2 drafting |
| 2020-08-11 | E-Meeting | Q14/15 | Q14/15 - Modelling Coordination (G.8052.1 and G.8052.2) (series of 6 virtual meetings) |
| 2020-08-10 to 2020-08-13 | E-Meeting | Q18/15 | Q18/15 - all projects |
| 2020-08-18 | E-Meeting | Q4/15 | Q4/15 - All projects |
| 2020-08-19 to 2020-08-20 | E-Meeting | Q8/15 | Q8/15 - G.977.1 |
| 2020-10-20 to 2020-10-22 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All topics |
| 2020-10-26 to 2020-10-30 | E-Meeting | Q11/15 | Q11/15 Rapporteur meeting - Overflow contributions from Sept 2020 SG15 plenary |
| 2020-11-04 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - Modelling coordination |
| 2020-11-10 | E-Meeting | Q18/15 | Q18/15 Rapporteur meeting - All topics (LCC and contribution) |
| 2020-11-11 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - MC requirements, information model, and operation |
| 2020-11-12 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - LC Comments |
| 2020-11-18 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - MTN management |
| 2020-11-16 to 2020-11-20 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All topics |
| 2020-11-16 to 2020-11-20 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - All projects |
| 2020-11-24 | E-Meeting | Q18/15 | Q18/15 Rapporteur meeting - All topics (LCC and contribution). |
| 2020-11-25 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - OTN and Optical media management |
| 2020-12-02 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - Modelling coordination |
| 2020-12-03 | E-Meeting | Q16/15 | Q16/15 Rapporteur meeting - L.oehc |
| 2020-12-02 to 2020-12-03 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - LC comments |
| 2020-12-01 to 2020-12-03 | E-Meeting | Q13/15 | Q13/15 Rapporteur meeting on synchronization |
| 2020-12-08 | E-Meeting | Q10/15 | Q10/15 Rapporteur meeting on G.8012 and G.8021 |
| 2020-12-09 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - MC requirements, information model, and operation |
| 2020-12-16 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - MTN management |
| 2020-12-16 to 2020-12-17 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - LC comments |
| 2020-12-15 to 2020-12-17 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All topics |
| 2020-12-14 to 2020-12-17 | E-Meeting | Q18/15 | Q18/15 Rapporteur meeting - All topics |
| 2020-12-18 | E-Meeting | Q12/15 | Q12/15 rapporteur meeting - G.8010 Amd. 3 |
| 2020-12-23 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - OTN and Optical media management |
| 2021-01-06 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - LC comments |
| 2021-01-06 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - Modelling coordination |
| 2021-01-13 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - MC requirements, information model, and operation |
| 2021-01-12 to 2021-01-14 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All topics |
| 2021-01-20 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - MTN management |
| 2021-01-18 to 2021-01-22 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - All projects |
| 2021-01-25 | E-Meeting | Q16/15 | Q16/15 Rapporteur meeting - L.201/L.13 |
| 2021-01-27 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - OTN and Optical media management |
| 2021-01-27 | E-Meeting | Q18/15 | Q18/15 - all topics, but focus will be resolving LC comments on Recommendations under AAP |
| 2021-01-26 to 2021-01-27 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - LC comments |
| 2021-01-28 | E-Meeting | Q12/15 Q14/15 | Q12, Q14/15 Rapporteur meeting on G.7702 and G.7703 |
| 2021-02-03 | E-Meeting | Q16/15 | Q16/15 Rapporteur meeting - L.100/L.10 |
| 2021-02-03 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - Modelling coordination |
| 2021-02-02 to 2021-02-03 | E-Meeting | Q4/15 | Q4/15 - LC comment resolution for Recommendations to come back to the SG |
| 2021-01-28 to 2021-02-05 | E-Meeting | Q11/15 | Q11/15 Rapporteur meeting |
| 2021-02-08 to 2021-02-09 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All topics |
| 2021-02-10 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - MC requirements, information model, and operation |
| 2021-02-17 | E-Meeting | Q18/15 | Q18/15 - LC comment resolution on G.9991 amd2 |
| 2021-02-17 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - MTN management |
| 2021-02-18 | E-Meeting | Q12/15 Q14/15 | Q12, Q14/15 Rapporteur meeting on G.7702 and G.770314 |
| 2021-02-18 | E-Meeting | Q18/15 | Q18/15 - LC comment resolution on G.9991 amd2 |
| 2021-02-18 to 2021-02-19 | E-Meeting | Q2/15 | Q2/15 - all topics |
| 2021-02-22 | E-Meeting | Q16/15 | Q16/15 Rapporteur meeting - L.400/L.12 |
| 2021-02-24 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - OTN and Optical media management |
| 2021-02-23 to 2021-02-24 | E-Meeting | Q4/15 | Q4/15 - LC/AR comment resolution, if necessary |
| 2021-02-23 to 2021-02-26 | E-Meeting | Q13/15 | Q13/15 Rapporteur meeting on synchronization |
| 2021-03-02 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - continuation from 24 Feb. (day 3) |
| 2021-03-03 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - Modelling coordination |
| 2021-03-04 | E-Meeting | Q16/15 | Q16/15 Rapporteur meeting - L.ncip - C2055 and C2077 |
| 2021-03-10 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - MC requirements, information model, and operation |
| 2021-03-09 to 2021-03-10 | E-Meeting | Q4/15 | Q4/15 - LC/AR comment resolution, if necessary, and all projects for new contributions |
| 2021-03-08 to 2021-03-11 | E-Meeting | Q18/15 | Q18/15 Rapporteur meeting - All topics |
| 2021-03-08 to 2021-03-12 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All topics |
| 2021-03-17 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - continuation from 10 March (day 3) |
| 2021-03-17 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - MTN management |
| 2021-03-23 | E-Meeting | Q18/15 | Q18/15 Rapporteur meeting - All topics |
| 2021-03-24 | E-Meeting | Q14/15 | Q14/15 Rapporteur meeting - OTN and Optical media management |
| 2021-03-25 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - continuation from 10 March (day 4) |
| 2021-03-30 | E-Meeting | Q10/15 | Q10/15 Rapporteur meeting on G.8012 and G.8021 |
| 2021-05-21 | E-Meeting | Q10/15 Q11/15 | E-meeting of Q10,11/15 - functional models |
| 2021-06-02 | E-Meeting | Q14/15 | E-meeting of Q14/15 - Modelling coordination |
| 2021-06-01 to 2021-06-04 | E-Meeting | Q11/15 | E-meeting of Q11/15 - overflow contributions from April 2021 plenary |
| 2021-06-01 to 2021-06-04 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All topics |
| 2021-06-09 | E-Meeting | Q14/15 | E-meeting of Q14/15 - MC requirements, information model, and operation |
| 2021-06-07 to 2021-06-09 | E-Meeting | Q18/15 | Q18/15 Rapporteur meeting - All projects |
| 2021-06-09 to 2021-06-11 | E-Meeting | Q11/15 | E-meeting of Q11/15 - overflow contributions from April 2021 plenary |
| 2021-06-08 to 2021-06-11 | E-Meeting | Q13/15 | E-meeting of Q13/15 on synchronization |
| 2021-06-15 | E-Meeting | Q6/15 Q13/15 | Joint E-meeting of Q6/15 and Q13/15 - Fiber delay measurement |
| 2021-06-16 | E-Meeting | Q6/15 | Q6/15 Rapporteur meeting |
| 2021-06-16 | E-Meeting | Q14/15 | E-meeting of Q14/15 - MTN management |
| 2021-06-15 to 2021-06-17 | E-Meeting | Q12/15 Q14/15 | E-Meeting - on G.7701 and G.7702, and other topics |
| 2021-06-23 | E-Meeting | Q14/15 | E-meeting of Q14/15 - OTN and Optical media management |
| 2021-06-22 to 2021-06-23 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - All projects |
| 2021-06-30 | E-Meeting | Q18/15 | Q18/15 - LC comment resolution for G.9976 |
| 2021-06-28 to 2021-07-02 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects |
| 2021-07-07 | E-Meeting | Q14/15 | E-meeting of Q14/15 - Modelling coordination |
| 2021-07-14 | E-Meeting | Q14/15 | E-meeting of Q14/15 - MC requirements, information model, and operation |
| 2021-07-19 | E-Meeting | Q4/15 | Q4/15 - Promotion materials for Q4/15 technologies |
| 2021-07-19 | E-Meeting | Q14/15 | E-meeting of Q14/15 - OTN and Optical media management |
| 2021-07-21 | E-Meeting | Q14/15 | E-meeting of Q14/15 - MTN management |
| 2021-07-22 | E-Meeting | Q18/15 | Q18/15 - all topics, including LC comment resolution on G.9976 |
| 2021-07-27 to 2021-07-29 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects |
| 2021-07-30 | E-Meeting | Q4/15 | Q4/15 - MGfast promotion materials (continuation of the meeting on 19 July 2021) |
| 2021-07-30 | E-Meeting | Q10/15 | E-meeting of Q10/15 - Progress the revisions of G.8012 and G.8021 |
| 2021-07-26 to 2021-07-30 | E-Meeting | Q11/15 | E-meeting of Q11/15 - OTN and OSU |
| 2021-08-04 | E-Meeting | Q14/15 | E-meeting of Q14/15 - Modelling coordination |
| 2021-08-11 | E-Meeting | Q14/15 | E-meeting of Q14/15 - MC requirements, information model, and operation |
| 2021-08-12 | E-Meeting | Q18/15 | Q18/15 - LCC resolution for G.9976, outgoing liaison to ITU-R and new contributions |
| 2021-08-16 | E-Meeting | Q14/15 | E-meeting of Q14/15 - OTN and Optical media management |
| 2021-08-18 | E-Meeting | Q14/15 | E-meeting of Q14/15 - MTN management |
| 2021-09-01 | E-Meeting | Q5/15 | Q5/15 - New L.oehc and TR.sdm; and Revision of G.650.1, G.652, and G.654 |
| 2021-09-01 | E-Meeting | Q14/15 | E-meeting of Q14/15 - Modelling coordination |
| 2021-08-31 to 2021-09-01 | E-Meeting | Q6/15 | Q6/15 Rapporteur meeting |
| 2021-08-30 to 2021-09-03 | E-Meeting | Q11/15 | E-meeting of Q11/15 - MTN and FlexE |
| 2021-09-08 | E-Meeting | Q14/15 | E-meeting of Q14/15 - MC requirements, information model, and operation |
| 2021-09-07 to 2021-09-08 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects |
| 2021-09-06 to 2021-09-09 | E-Meeting | Q18/15 | Q18/15 Rapporteur meeting - All projects |
| 2021-09-15 | E-Meeting | Q14/15 | E-meeting of Q14/15 - MTN management |
| 2021-09-14 to 2021-09-16 | E-Meeting | Q12/15 Q14/15 | E-Meeting - on G.7701 and G.7702, and other topics |
| 2021-09-22 | E-Meeting | Q14/15 | E-meeting of Q14/15 - OTN and Optical media management |
| 2021-09-27 to 2021-09-28 | E-Meeting | Q4/15 | Q4/15 Rapporteur meeting - All projects |
| 2021-09-29 | E-Meeting | Q14/15 | E-meeting of Q14/15 - Modelling coordination |
| 2021-10-01 | E-Meeting | Q10/15 | E-meeting of Q10/15 - Progress the revisions of G.8012 and G.8021 |
| 2021-10-08 | E-Meeting | Q18/15 | E-meeting of Q18/15 - all projects |
| 2021-10-12 to 2021-10-13 | E-Meeting | Q11/15 | E-meeting of Q11/15 – G.8321 |
| 2021-10-12 to 2021-10-15 | E-Meeting | Q13/15 | E-meeting of Q13/15 on synchronization |
| 2021-10-12 to 2021-10-15 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects |
| 2021-10-18 | E-Meeting | Q14/15 | E-meeting of Q14/15 - MC requirements, information model, and operation |
| 2021-10-19 | E-Meeting | Q4/15 | E-meeting of Q4/15 - all projects |
| 2021-10-20 | E-Meeting | Q14/15 | E-meeting of Q14/15 - MTN management |
| 2021-10-27 | E-Meeting | Q14/15 | E-meeting of Q14/15 - OTN and Optical media management |
| 2021-10-28 | E-Meeting | Q12/15 Q14/15 | E-Meeting of Q12/15 and Q14/15 - G.7701 and G.7702 |
| 2021-11-02 | E-Meeting | Q18/15 | E-meeting of Q18/15 - all projects |
| 2021-11-03 | E-Meeting | Q14/15 | E-meeting of Q14/15 - Modelling coordination |
| 2021-11-08 | E-Meeting | Q4/15 | E-meeting of Q4/15 - all projects |
| 2021-11-10 | E-Meeting | Q13/15 | E-meeting of Q13/15 - Progress on packet sync layer functions, G.781.1 |
| 2021-11-09 to 2021-11-11 | E-Meeting | Q2/15 | Q2/15 Rapporteur meeting - All projects |

# 2 Organization of work

## 2.1 Organization of studies and allocation of work

**2.1.1** At its first meeting of the study period, Study Group 15 decided to establish three Working Parties.

**2.1.2** Table 2 shows the number and title of each Working Party, together with the number of Questions assigned to it and the name of its Chairman.

**2.1.3** SG15 did not create any regional groups, focus groups, JCAs, GSIs or JCGs during this study period (Table 3).

**2.1.4** Study Group 15 established no Regional Group groups (as per WTSA-16 Resolution 54) during the study period.

TABLE 2  
Organization of Study Group 15

| Designation | Questions to be studied | Title of the Working Party | Chairman and Vice-Chairmen |
| --- | --- | --- | --- |
| WP 1/15 | Q1, 2, 4, 15, 18, 19/15 | Transport aspects of access, home and smart grid networks | Chairman: Tom Starr  Vice-Chairman: Ian Horsley (10/2018-), Hubert Mariotte (-10/2018) |
| WP 2/15 | Q5, 6, 7, 8, 16, 17, 18/15 | Optical technologies and physical infrastructures | Chairman: Noriyuki ARAKI  Vice-Chairman: Peter Stassar (07/2019-), Pete Anslow (-07/2019) |
| WP 3/15 | Q3, 9, 10, 11, 12, 13, 14/15 | Transport network characteristics | Chairman: Malcolm Betts  Vice-Chairman: Glenn Parsons |

TABLE 3  
Other Groups (if any)

| Title of the Group | Chairman | Vice-Chairmen |
| --- | --- | --- |
| None. |  |  |

## 2.2 Questions and Rapporteurs

**2.2.1** WTSA-16 assigned to Study Group 15 the 19 Questions listed in Table 4.

**2.2.2** The Questions listed in Table 5 have been adopted during this period.

**2.2.3** The Questions listed in Table 6 have been deleted during this period.

TABLE 4  
Study Group 15 – Questions assigned by WTSA-16 and Rapporteurs

| Questions | Title of the Questions | WP | Rapporteur |
| --- | --- | --- | --- |
| 1/15 | Coordination of access and Home Network Transport standards | 1/15 | **Rapporteur**: Jean-Marie Fromenteau **Associate rapporteur**: Dekun Liu |
| 2/15 | Optical systems for fibre access networks | 1/15 | **Rapporteur**: Frank Effenberger **Associate rapporteur**: Junichi Kani |
| 3/15 | Coordination of optical transport network standards | 3/15 | **Rapporteur**: Naotaka Morita (-01/2018) |
| 4/15 | Broadband access over metallic conductors | 1/15 | **Rapporteur**: Frank Van der Putten **Associate rapporteurs**: Les Brown, Miguel PEETERS |
| 5/15 | Characteristics and test methods of optical fibres and cables | 2/15 | **Rapporteur**: Kazuhide Nakajima **Associate rapporteur**: David Mazzarese (-01/2018) |
| 6/15 | Characteristics of optical systems for terrestrial transport networks | 2/15 | **Rapporteur**: Peter Stassar **Associate rapporteur**: Bernd Teichmann (01/2020-), Pete Anslow (-07/2019) |
| 7/15 | Characteristics of optical components and subsystems | 2/15 | **Rapporteur**: Bernd Teichmann (-01/2020) |
| 8/15 | Characteristics of optical fibre submarine cable systems | 2/15 | **Rapporteur**: Omar Ait Sab |
| 9/15 | Transport network protection/restoration | 3/15 | **Rapporteur**: Tom Huber (-10/2018) |
| 10/15 | Interfaces, Interworking, OAM and Equipment specifications for Packet based Transport Networks | 3/15 | **Rapporteur**: Jessy Rouyer |
| 11/15 | Signal structures, interfaces, equipment functions, and interworking for optical transport networks | 3/15 | **Rapporteur**: Steve Gorshe **Associate rapporteur**: Tom Huber (10/2018-) |
| 12/15 | Transport network architectures | 3/15 | **Rapporteur**: Stephen Shew  **Associate rapporteur**: Paul Doolan (07/2019-) |
| 13/15 | Network synchronization and time distribution performance | 3/15 | **Rapporteur**: Stefano Ruffini **Associate rapporteur**: Silvana Rodrigues |
| 14/15 | Management and control of transport systems and equipment | 3/15 | **Rapporteur**: Hing-Kam Lam **Associate rapporteur**: Scott Mansfield |
| 15/15 | Communications for Smart Grid | 1/15 | **Rapporteur**: Stefano Galli (-01/2020) **Associate rapporteur**: Paolo Treffiletti (-01/2020) |
| 16/15 | Optical physical infrastructures | 2/15 | **Rapporteur**: Edoardo Cottino (-04/2021), Chihiro Kito (04/2021-) **Associate rapporteur**: Osman Gebizlioglu (- 07/2019), Xiong Zhuang (04/2021-) |
| 17/15 | Maintenance and operation of optical fibre cable networks | 2/15 | **Rapporteur**: Kunihiro Toge (-01/2021) **Associate rapporteur**: Xiong Zhuang (-01/2021) |
| 18/15 | Broadband in-premises networking | 1/15 | **Rapporteur**: Les Brown **Associate rapporteur**: Marcos Martinez, Tony Zeng (09/2020-) |
| 19/15 | Requirements for advanced service capabilities over broadband cable home networks | 1/15 | None.  (Merged into Q18/15 at the first SG15 meeting) |

TABLE 5  
Study Group 15 – New Questions adopted and Rapporteurs

| Questions | Title of the Questions | WP | Rapporteur |
| --- | --- | --- | --- |
| Revised Q18/15 (June 2017) | Broadband in-premises networking | 1/15 | **Rapporteur**: Les Brown **Associate rapporteur**: Marcos Martinez |
| Revised Q12/15  (January 2018) | Transport network architectures | 3/15 | **Rapporteur**: Stephen Shew |
| Revised Q10/15 (October 2018) | Interfaces, Interworking, OAM, protection and Equipment specifications for Packet based Transport Networks | 3/15 | **Rapporteur**: Jessy Rouyer |
| Revised Q11/15 (October 2018) | Signal structures, interfaces, equipment functions, protection, and interworking for optical transport networks | 3/15 | **Rapporteur**: Steve Gorshe **Associate rapporteur**: Tom Huber (10/2018-) |
| Revised Q12/15 (October 2018) | Transport network architectures | 3/15 | **Rapporteur**: Stephen Shew **Associate rapporteur**: Paul Doolan (07/2019-) |
| Revised Q6/15 (February 2020) | Characteristics of optical components, subsystems and systems for optical transport networks | 2/15 | **Rapporteur**: Peter Stassar **Associate rapporteur**: Bernd Teichmann (01/2020-) |
| Revised Q18/15 (February 2020) | Technologies for in-premises networking and related access applications | 1/15 | **Rapporteur**: Les Brown **Associate rapporteur**: Marcos Martinez |
| Revised Q16/15 (April 2021) | Optical physical infrastructures | 2/15 | **Rapporteur**: Chihiro Kito (04/2021-) **Associate rapporteur**: Xiong Zhuang (04/2021-) |

TABLE 6  
Study Group 15 – Questions deleted

| Questions | Title of Questions | Rapporteurs | Results |
| --- | --- | --- | --- |
| 19/15 | Requirements for advanced service capabilities over broadband cable home networks | None. | Merged into Q18/15 |
| 3/15 | Coordination of optical transport network standards | **Rapporteur**: Naotaka Morita (-01/2018) | Merged into Q12/15 |
| 9/15 | Transport network protection/restoration | **Rapporteur**: Tom Huber (-10/2018) | Merged into Q10, 11 and 12/15 |
| 7/15 | Characteristics of optical components and subsystems | **Rapporteur**: Bernd Teichmann (-01/2020) | Merged into Q6/15 |
| 15/15 | Communications for Smart Grid | **Rapporteur**: Stefano Galli (-01/2020) **Associate rapporteur**: Paolo Treffiletti (-01/2020) | Merged into Q18/15 |
| 17/15 | Maintenance and operation of optical fibre cable networks | **Rapporteur**: Kunihiro Toge (-01/2021) **Associate rapporteur**: Xiong Zhuang (-01/2021) | Merged into 16/15 |

# 3 Results of the work accomplished during the 2017-2021 study period

## 3.1 General

During the study period, Study Group 15 examined 2812 contributions and generated a large number of TDs and liaison statements. It also:

– drew up 58 new Recommendations;

– approved 298 revised Recommendations, Amendments and Corrigenda;

– developed 30 Supplements;

– produced 9 Technical Papers and 4 Technical Reports;

## 3.2 Highlights of achievements

The main results achieved on the various Questions assigned to Study Group 15 are briefly summarized below. Formal replies to the Questions are given in a synoptic table in Annex 1 of this report.

a) Working Party 1/15 achievements

– Gigabit-capable Passive Optical Networks (GPON) (G.984.x series)

– 40Gbit/s-capable PON systems; NG-PON2 (G.989 series)

– 10Gbit/s-capable symmetric PON systems; XGS-PON (G.9807.x series)

– Higher speed bidirectional, single fibre, point-to-point optical access system (HS-PtP) (G.9806)

– Radio over Fiber systems (G.9803)

– G.fast for up to 2 Gb/s for very short copper access lines (G.970x series)

– MGfast for up to 10 Gb/s for very short copper access lines (G.971x series)

– G.fastback for using G.fast for mobile backhaul (G.9702)

– G.hn2 home networking up to 10 Gbps

– G.vlc for using visible light communication (free-space optical communication) for home networking (G.999x series)

– Smartgrid access over powerlines

b) Working Party 2/15 achievements

– Single-mode fibre Recommendations (G.652, G.654 and G.657)

– Multi-vendor optical interface specifications for a variety of applications (G.695, G.698.series, G.959.1), including conventional single channel, CWDM, DWDM, port agnostic, etc.

– Transmission characteristics of optical components and subsystems (G.671)

– Outside plants

– Optical cable installation with minimal existing infrastructure (L.110, L.163)

– Field mountable single-mode optical fibre connectors (L.404)

c) Working Party 3/15 achievements

– Metro Transport Network (MTN) (G.8300-series)

– Network restoration and protection for MTN, OTN, Ethernet and MPLS-TP

– OAM functions for Ethernet and MPLS-TP

– OTN hierarchy and Interfaces (G.709- and G.709.x-series) for beyond 100G bit/s signals (n x 100 Gbit/s)

– Architecture of transport networks and architecture of transport SDN

– Network synchronization and time distribution (G.82xx series)

– Management and control of transport systems and equipment

## 3.3 Report of lead study group activities, JCAs and regional groups

### 3.3.1 Lead study group activities

Study Group 15 served as the lead study Group on:

– Access network transport

– Home networking

– Optical technology

– Smart grid

SG15 developed and updated the following documents:

– Access Network Transport Standards Overview

– Access Network Transport Standards Work Plan

– The Optical Transport Networks & Technologies Standardization Work Plan

– Smart Grid overview and work plan

These documents are posted on the SG15 web page at:  
<https://www.itu.int/en/ITU-T/studygroups/2017-2020/15/Pages/default.aspx> .

### 3.3.2 JCA

None.

### 3.3.3 Regional Group

None.

### 3.3.4 Focus Group

None.

# 4 Observations concerning future work

Study Group 15 is responsible in ITU-T for the development of standards for the optical transport network, access network, home network and power utility network, infrastructures, systems, equipment, optical fibres and cables. Its future work includes the following work items (but not limited to):

– Higher Speed Passive Optical Networks

– Wavelength multiplexed point-to-multipoint 10-Gigabit-capable passive optical network

– 10-Gigabit-capable symmetric passive optical network (XGS-PON)

– 40 Gbit/s and higher bit rate optical access (fiber to the home) (NG-PON2)

– G.fast, MGfast – optical class broadband access using existing metallic cables

– Transceiver and system specifications for backhaul applications based on G.fast (G.fastback)

– Evolution of unified high-speed wire-line based home networking transceivers (G.hn2)

– Support UHD video service over G.hn (G.uvs)

– High speed fibre-based in-premises transceivers (G.fin)

– High speed indoor free space optical networking (G.vlc)

– Optical fibre and cable for space division multiplexing transmission

– Multi-vendor interoperable optical interface specifications for:

– mobile optimized applications at 25 Gbit/s

– 200G and 400G (and beyond) coherent optically amplified multichannel DWDM applications

– Transverse compatible DWDM applications for repeatered optical fibre submarine cable systems

– Telecommunication Infrastructure facility management

– Optical/Electrical Hybrid Cables for access point and other terminal equipment (L.oehc)

– Combined fibre distribution and terminal equipment Box (L.font)

– Requirements for Passive Optical Nodes: nodes for customer indoor premises (L.ncip)

– Cable identification for the construction and maintenance of optical fibre cable networks with optical sensing technique (L.cid)

– Architecture, infrafaces, protection/restoration, network element management for the OTN beyond 400Gb/s

– Ethernet UNI and Ethernet NNI

– Characteristics of Ethernet transport network equipment functional blocks

– Optical Service Unit (OSU) path layer network for sub 1G services

– Architecture, interfaces, protection/restoration, network element management for MTN (G.83xx series)

– Interfaces for the OTN and other transport network technologies

– Architecture for various transport network technologies

– Network synchronization and time distribution

– Synchronization of packet networks and future MTN, OTN and other interfaces e.g. beyond 100Gbit/s

– Management information model

– SDN control of transport networks including the use of AL/ML

# 5 Updates to the WTSA Resolution 2 for the 2022-2024 study period

Annex 2 contains the updates to WTSA Resolution 2 proposed by Study Group 15 concerning the general areas of study, title, mandate, lead roles and points of guidance in the next study period.

ANNEX 1  
  
List of Recommendations, Supplements and   
other materials produced or deleted during the study period

The list of new and revised Recommendations approved during the study period is found in Table 7.

The list of Recommendations determined/consented at the last meeting of Study Group 15 is found in Table 8.

The list of Recommendations deleted by Study Group 15 during the study period is found in Table 9.

The List of Recommendations submitted by Study Group 15 to WTSA-20 for approval is found in Table 10.

Tables 11 onwards list other publications approved and/or deleted by Study Group 15 during the study period.

TABLE 7  
Study Group 15 – Recommendations approved during the study period

| Recommendation | Approval | Status | TAP/ AAP | Title |
| --- | --- | --- | --- | --- |
| [G.650.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13351) | 2018-03-16 | Superseded | AAP | Definitions and test methods for linear, deterministic attributes of single-mode fibre and cable |
| [G.650.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16416) | 2020-10-29 | In force | AAP | Definitions and test methods for linear, deterministic attributes of single-mode fibre and cable |
| [G.650.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13385) | 2017-08-13 | In force | AAP | Test methods for installed single-mode optical fibre cable links |
| [G.651.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13398) | 2018-11-29 | In force | AAP | Characteristics of a 50/125 µm multimode graded index optical fibre cable for the optical access network |
| [G.652](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13348) | 2016-11-13 | In force | AAP | Characteristics of a single-mode optical fibre cable |
| [G.654](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13363) | 2016-11-13 | Superseded | AAP | Characteristics of a cut-off shifted single-mode optical fibre and cable |
| [G.654](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14553) | 2020-03-15 | In force | AAP | Characteristics of a cut-off shifted single-mode optical fibre and cable |
| [G.657](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13364) | 2016-11-13 | In force | AAP | Characteristics of a bending-loss insensitive single-mode optical fibre and cable |
| [G.671](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14888) | 2019-08-29 | In force | AAP | Transmission characteristics of optical components and subsystems |
| [G.672](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13365) | 2018-11-29 | Superseded | AAP | Characteristics of multi-degree reconfigurable optical add/drop multiplexers |
| [G.672](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15211) | 2020-10-29 | In force | AAP | Characteristics of multi-degree reconfigurable optical add/drop multiplexers |
| [G.694.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16747) | 2020-10-29 | In force | AAP | Spectral grids for WDM applications: DWDM frequency grid |
| [G.695](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13455) | 2018-07-22 | In force | AAP | Optical interfaces for coarse wavelength division multiplexing applications |
| [G.697](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13357) | 2016-11-13 | In force | AAP | Optical monitoring for dense wavelength division multiplexing systems |
| [G.698.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13349) | 2018-11-29 | In force | AAP | Amplified multichannel DWDM applications with single channel optical interfaces |
| [G.698.4 (ex G.metro)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13368) | 2018-03-16 | In force | AAP | Multichannel bi-directional DWDM applications with port agnostic single-channel optical interfaces |
| [G.698.4 Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14897) | 2018-11-29 | In force | AAP | Multichannel bi-directional DWDM applications with port agnostic single-channel optical interfaces - Corrigendum 1 |
| [G.703 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16870) | 2021-05-29 | In force | AAP | Physical/electrical characteristics of hierarchical digital interfaces - Amendment 1 |
| [G.7041/Y.1303 (2016) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15017) | 2019-08-29 | In force | AAP | Generic framing procedure - Amendment 1 |
| [G.7041/Y.1303 (2016) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14526) | 2018-03-16 | In force | AAP | Generic Framing Procedure: Corrigendum 1 |
| [G.709 Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14261) | 2017-08-13 | Superseded | AAP | Interfaces for the optical transport network (OTN): Corrigendum 1 |
| [G.709 Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16942) | 2021-05-29 | In force | AAP | Interfaces for the optical transport network: Corrigendum 1 |
| [G.709.1 Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16470) | 2020-05-07 | In force | AAP | Flexible OTN short-reach interface - Corrigendum 1 |
| [G.709.1/Y.1331.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13420) | 2017-01-12 | Superseded | AAP | Flexible OTN short-reach interface |
| [G.709.1/Y.1331.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14490) | 2018-06-22 | In force | AAP | Flexible OTN short-reach interface |
| [G.709.1/Y.1331.1 (2018) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14778) | 2019-04-06 | In force | AAP | Flexible OTN short-reach interface - Amendment 1 |
| [G.709.1/Y.1331.1 (2018) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16558) | 2020-12-22 | In force | AAP | Flexible OTN short-reach interfaces - Amendment 2 |
| [G.709.2 Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16805) | 2020-09-18 | In force | Agreement | OTU4 long-reach interface - Corriendum 1 |
| [G.709.2/Y.1331.2 (ex G.709.otu4lr)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13477) | 2018-07-22 | In force | AAP | OTU4 long-reach interface |
| [G.709.3/Y.1331.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16569) | 2020-12-22 | In force | AAP | Flexible OTN long-reach interfaces |
| [G.709.3/Y.1331.3 (ex G.709.flexo-lr)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13478) | 2018-06-22 | Superseded | AAP | Flexible OTN long-reach interface |
| [G.709.3/Y.1331.3 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14628) | 2018-11-29 | Superseded | AAP | Flexible OTN long-reach interfaces: Amendment 1 |
| [G.709.4 (ex G.709.25-50)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14974) | 2020-03-15 | In force | AAP | OTU25 and OTU50 short-reach interfaces |
| [G.709.4 Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16943) | 2021-05-29 | In force | AAP | OTU25 and OTU50 short-reach interfaces - Corrigendum 1 |
| [G.709/Y.1331](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15019) | 2020-06-06 | In force | AAP | Interfaces for the optical transport network (OTN) |
| [G.709/Y.1331 (2016) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13419) | 2016-11-13 | Superseded | AAP | Interfaces for the Optical Transport Network (OTN): Amendment 1 |
| [G.709/Y.1331 (2016) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13479) | 2018-06-06 | Superseded | AAP | Interfaces for the optical transport network (OTN): Amendment 2 |
| [G.709/Y.1331 (2016) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14629) | 2019-03-22 | Superseded | AAP | Interfaces for the optical transport network (OTN): Amendment 3 |
| [G.709/Y.1331 (2016) Cor.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15193) | 2019-11-06 | Superseded | AAP | Interfaces for the optical transport network: Corrigendum 2 |
| [G.709/Y.1331 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16571) | 2020-12-22 | In force | AAP | Interfaces for the optical transport network (OTN) - Amendment 1 |
| [G.7701 (2016) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14233) | 2018-03-16 | In force | AAP | Common control aspects - Amendment 1 |
| [G.7701 (ex G.cca)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13386) | 2016-11-13 | In force | AAP | Common Control Aspects |
| [G.7701 Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14997) | 2020-12-22 | In force | AAP | Common control aspects - Amendment 2 |
| [G.7702 (ex G.asdtn)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13371) | 2018-03-16 | In force | AAP | Architecture for SDN control of transport networks |
| [G.7703 (ex G.8080/Y.1304)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13355) | 2021-05-29 | In force | AAP | Architecture for the automatically switched optical network |
| [G.7710/Y.1701](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14251) | 2019-08-29 | Superseded | AAP | Common equipment management function requirements |
| [G.7710/Y.1701](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16327) | 2020-10-29 | In force | AAP | Common equipment management function requirements |
| [G.7710/Y.1701 (2012) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13361) | 2016-11-13 | Superseded | AAP | Common equipment management function requirements: Amendment 1 |
| [G.7711 (2016)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14252) | 2018-03-16 | In force | AAP | Generic protocol-neutral management Information Model for Transport Resources |
| [G.7711/Y.1702](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13424) | 2016-12-22 | Superseded | AAP | Generic protocol-neutral information model for transport resources |
| [G.7712/Y.1703](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13393) | 2019-08-29 | In force | AAP | Architecture and specification of data communication network |
| [G.7714.1/Y.1705.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14168) | 2017-08-13 | In force | AAP | Protocol for automatic discovery in transport networks |
| [G.7714.1/Y.1705.1 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15085) | 2021-05-29 | In force | AAP | Protocol for automatic discovery in transport networks - Amendment 1 |
| [G.7718](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14973) | 2020-10-29 | In force | AAP | Framework for the management of MC components and functions |
| [G.7719 (ex G.7718.1/Y.1709.1)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14976) | 2021-06-29 | In force | AAP | Management information model for MC components and functions |
| [G.7721 (ex G.sync-mgmt)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14258) | 2018-11-29 | In force | AAP | Management Requirement and Information Model for Synchronization |
| [G.781](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13407) | 2017-08-29 | Superseded | AAP | Synchronization layer functions |
| [G.781](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14235) | 2020-04-13 | In force | AAP | Synchronization layer functions for frequency synchronization based on the physical layer |
| [G.798](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13406) | 2017-12-07 | In force | AAP | Characteristics of optical transport network hierarchy equipment functional blocks |
| [G.798 (2012) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13450) | 2017-01-12 | Superseded | AAP | Characteristics of optical transport network hierarchy equipment functional blocks: Amendment 3 |
| [G.798 (2017) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14231) | 2018-08-22 | In force | AAP | Characteristics of optical transport network hierarchy equipment functional blocks |
| [G.798 (2017) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14777) | 2019-12-07 | In force | AAP | Characteristics of optical transport network hierarchy equipment functional blocks - Amendment 2 |
| [G.798 (2017) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14525) | 2018-08-06 | In force | AAP | Characteristics of optical transport network hierarchy equipment functional blocks - Corrigendum 1 |
| [G.798 (2017) Cor.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16944) | 2021-05-29 | In force | AAP | Characteristics of optical transport network hierarchy equipment functional blocks - Corrigendum 2 |
| [G.798 Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16315) | 2021-01-13 | In force | AAP | Characteristics of optical transport network hierarchy equipment functional blocks - Amendment 3 |
| [G.8010 Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16575) | 2021-05-29 | In force | AAP | Architecture of Ethernet layer networks - Amendment 3 |
| [G.8011/Y.1307](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13390) | 2016-11-13 | Superseded | AAP | Ethernet service characteristics |
| [G.8011/Y.1307](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14143) | 2018-11-29 | Superseded | AAP | Ethernet service characteristics |
| [G.8011/Y.1307](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16568) | 2020-10-29 | In force | AAP | Ethernet service characteristics |
| [G.8012/Y.1308 (2004) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13445) | 2016-11-13 | In force | AAP | Ethernet UNI and Ethernet over Transport NNI: Amendment 2 |
| [G.8013/Y.1731 (2015) Cor. 1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13409) | 2018-03-16 | In force | AAP | Operation, administration and maintenance (OAM) functions and mechanisms for Ethernet-based networks |
| [G.8013/Y.1731 (2015) Cor.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15194) | 2019-08-29 | In force | AAP | Operation, administration and maintenance (OAM) functions and mechanisms for Ethernet-based networks - Corrigendum 2 |
| [G.8013/Y.1731 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14627) | 2018-11-29 | In force | AAP | Operation, administration and maintenance (OAM) functions and mechanisms for Ethernet-based networks |
| [G.8021/Y.1341](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13405) | 2016-11-13 | Superseded | AAP | Characteristics of Ethernet transport network equipment functional blocks |
| [G.8021/Y.1341](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14144) | 2018-06-06 | In force | AAP | Characteristics of Ethernet transport network equipment functional blocks |
| [G.8021/Y.1341 (2018) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15195) | 2019-08-29 | In force | AAP | Characteristics of Ethernet transport network equipment functional blocks - Corrigendum 1 |
| [G.8023](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14259) | 2018-06-06 | In force | AAP | Characteristics of equipment functional blocks supporting Ethernet physical layer and FlexE interfaces |
| [G.8023 (2018) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14775) | 2018-11-29 | In force | AAP | Characteristics of equipment functional blocks supporting Ethernet physical layer and FlexE interfaces - Corrigendum 1 |
| [G.8031/Y.1342 (2015) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14229) | 2018-03-16 | In force | AAP | Ethernet linear protection switching- Amendment 1 |
| [G.8032 Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14260) | 2017-08-13 | Superseded | AAP | Corrigendum 1 to Recommendation ITU-T G.8032/Y.1344 |
| [G.8032/Y.1344](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16311) | 2020-03-15 | In force | AAP | Ethernet ring protection switching |
| [G.8032/Y.1344 (2015) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13426) | 2016-11-13 | Superseded | AAP | Ethernet ring protection switching: Amendment 1 |
| [G.8051/Y.1345](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14687) | 2020-12-07 | In force | AAP | Management aspects of the Ethernet Transport (ET) capable network element |
| [G.8051/Y.1345 (2015)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14253) | 2018-03-16 | Superseded | AAP | Management aspects of the Ethernet Transport (ET) capable network element |
| [G.8051/Y.1345 (2015) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13425) | 2017-08-13 | Superseded | AAP | Management aspects of the Ethernet Transport (ET) capable network element: Amendment 1 |
| [G.8052.1/Y.1346.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14255) | 2021-01-13 | In force | AAP | Transport OAM Management Information/Data Models for Ethernet Transport Network Element" |
| [G.8052.2/Y.1346.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14636) | 2021-08-06 | In force | AAP | Resilience Information/Data Models for Ethernet Transport Network Element |
| [G.8052/Y.1346](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13375) | 2016-11-13 | Superseded | AAP | Protocol-neutral management information model for the Ethernet Transport capable network element |
| [G.8052/Y.1346](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14254) | 2018-12-14 | In force | AAP | Protocol-neutral management information model for the Ethernet Transport capable network element |
| [G.806 (2012) Cor.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13480) | 2017-08-13 | In force | AAP | Characteristics of transport equipment - Description methodology and generic functionality: Corrigendum 3 |
| [G.807 (ex G.media)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14232) | 2020-02-07 | In force | AAP | Generic functional architecture of the optical media network |
| [G.807 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16573) | 2021-01-13 | In force | AAP | Generic functional architecture of the optical media network - Amendment 1 |
| [G.808](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13427) | 2016-11-13 | In force | AAP | Terminology for protection and restoration |
| [G.808 (2016) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14225) | 2018-03-16 | In force | AAP | Terms and definitions for network protection and restoration |
| [G.808.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14228) | 2019-08-29 | In force | AAP | Generic protection switching - ring protection |
| [G.8101/Y.1355](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13416) | 2016-11-13 | Superseded | AAP | Terms and definitions for MPLS transport profile |
| [G.811.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13485) | 2017-08-13 | In force | AAP | Timing characteristics of enhanced primary reference clocks |
| [G.8110.1 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16580) | 2020-10-29 | In force | AAP | Architecture of the Multi-Protocol Label Switching transport profile layer network - Amendment 1 |
| [G.8112/Y.1371](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16312) | 2020-10-29 | In force | AAP | Interfaces for the MPLS transport profile layer network |
| [G.8112/Y.1371 (2015) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13471) | 2017-08-13 | Superseded | AAP | Interfaces for the MPLS Transport Profile layer network: Amendment 1 |
| [G.8113.1/Y.1372.1 (2016) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13446) | 2016-11-13 | In force | AAP | Operations, administration and maintenance mechanisms for MPLS-TP in packet transport network - Corrigendum 1 |
| [G.8113.2/Y.1372.2 (2015) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13472) | 2017-08-13 | In force | AAP | Operations, administration and maintenance mechanisms for MPLS-TP networks using the tools defined for MPLS: Amendment 1 |
| [G.8121.1/Y.1381.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13474) | 2018-11-29 | In force | AAP | Characteristics of MPLS-TP equipment functional blocks supporting ITU-T G.8113.1/Y.1372.1 OAM mechanisms |
| [G.8121.1/Y.1381.1 (2016) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13448) | 2016-11-13 | Superseded | AAP | Characteristics of MPLS-TP equipment functional blocks supporting ITU-T G.8113.1/Y.1372.1 OAM mechanisms - Corrigendum 1 |
| [G.8121.2/Y.1381.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13476) | 2018-11-29 | In force | AAP | Characteristics of MPLS-TP equipment functional blocks supporting ITU-T G.8113.2/Y.1372.2 OAM mechanisms |
| [G.8121.2/Y.1381.2 (2016) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13449) | 2016-11-13 | Superseded | AAP | Characteristics of MPLS-TP equipment functional blocks supporting ITU-T G.8113.2/Y.1372.2 OAM mechanisms - Corrigendum 1 |
| [G.8121/Y.1381](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13428) | 2018-11-29 | In force | AAP | Characteristics of MPLS-TP equipment functional blocks |
| [G.8121/Y.1381 (2016) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13473) | 2017-08-13 | Superseded | AAP | Characteristics of MPLS-TP equipment functional blocks - Amendment 1 |
| [G.8121/Y.1381 -Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13447) | 2016-11-13 | Superseded | AAP | Characteristics of MPLS-TP equipment functional blocks. Corrigendum 1 |
| [G.813 (2003) Cor.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13451) | 2016-11-13 | In force | AAP | Timing characteristics of SDH equipment slave clocks (SEC)- Corrigendum 2 |
| [G.8131 Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14626) | 2018-11-29 | In force | AAP | Linear protection switching for MPLS transport profile |
| [G.8131/Y.1382 (2014) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13418) | 2016-11-13 | In force | AAP | Linear protection switching for MPLS transport profile (MPLS-TP): Amendment 2 |
| [G.8132/Y.1383](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13346) | 2017-08-13 | In force | AAP | MPLS-TP Shared Ring Protection |
| [G.8132/Y.1383 (2017) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15196) | 2019-08-29 | In force | AAP | MPLS-TP shared ring protection - Corrigendum 1 |
| [G.8133 (ex G.mtdh)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14230) | 2019-08-29 | In force | AAP | Dual-Homing Protection for MPLS-TP Pseudowires |
| [G.8151/Y.1374](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13392) | 2017-08-13 | Superseded | AAP | Management aspects of the MPLS-TP network element |
| [G.8151/Y.1374](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14688) | 2018-11-29 | Superseded | AAP | Management aspects of the MPLS-TP network element |
| [G.8151/Y.1374](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16579) | 2020-10-29 | In force | AAP | Management aspects of the MPLS-TP network element |
| [G.8152.1/Y.1375.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14977) | 2021-01-13 | In force | AAP | OAM Information/Data Models for MPLS-TP Network Element |
| [G.8152.2/Y.1375.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14979) | 2021-01-13 | In force | AAP | Resilience Information/Data Models for MPLS-TP Network Element |
| [G.8152/Y.1375](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13345) | 2016-12-22 | Superseded | AAP | Protocol-neutral management information model for the MPLS-TP network element |
| [G.8152/Y.1375](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14256) | 2018-12-14 | In force | AAP | Protocol-neutral management information model for the MPLS-TP network element |
| [G.8251](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13362) | 2018-11-29 | In force | AAP | The control of jitter and wander within the optical transport network (OTN) |
| [G.8260](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15053) | 2020-03-15 | In force | AAP | Definitions and terminology for synchronization in packet networks |
| [G.8260 (2015) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13421) | 2018-11-29 | Superseded | AAP | Definitions and terminology for synchronization in packet networks: Amendment 2 |
| [G.8261/Y.1361](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14414) | 2019-08-29 | In force | AAP | Timing and synchronization aspects in packet networks |
| [G.8261/Y.1361 (2019) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16318) | 2020-03-15 | In force | AAP | Timing and synchronization aspects in packet networks - Amendment 1 |
| [G.8261/Y.1361 Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16576) | 2020-10-29 | In force | AAP | Timing and synchronization aspects in packet networks - Amendment 2 |
| [G.8262](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14237) | 2018-11-29 | In force | AAP | Timing characteristics of synchronous equipment slave clock |
| [G.8262 (2018) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15052) | 2020-03-15 | In force | AAP | Timing characteristics of synchronous equipment slave clock - Amendment 1 |
| [G.8262.1/Y.1362.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13387) | 2019-01-12 | In force | AAP | Timing characteristics of an enhanced synchronous equipment slave clock |
| [G.8262.1/Y.1362.1 (2019) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14986) | 2019-08-29 | In force | AAP | Timing characteristics of enhanced synchronous equipment slave clock: Amendment 1 |
| [G.8262/Y.1362 (2015) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13452) | 2016-11-13 | Superseded | AAP | Timing characteristics of a synchronous Ethernet equipment slave clock (EEC)- Corrigendum 1 |
| [G.8263/Y.1363](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13486) | 2017-08-13 | In force | AAP | Timing characteristics of packet-based equipment clocks |
| [G.8264/Y.1364](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13430) | 2017-08-29 | In force | AAP | Distribution of timing information through packet networks |
| [G.8264/Y.1364 (2017) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14238) | 2018-03-16 | In force | AAP | Distribution of timing information through packet networks - Amendment 1 |
| [G.8265.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16902) | 2021-06-29 | In force | AAP | Precision time protocol telecom profile for frequency synchronization |
| [G.8265.1/Y.1365.1 (2014) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14987) | 2019-08-29 | Superseded | AAP | Precision time protocol telecom profile for frequency synchronization -Amendment 1 |
| [G.8266/Y.1376](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13372) | 2016-11-13 | In force | AAP | Timing characteristics of telecom grandmaster clocks for frequency synchronization |
| [G.8266/Y.1376 (2016) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13487) | 2018-03-16 | In force | AAP | Timing characteristics of telecom grandmaster clocks for frequency synchronization - Amendment 1 |
| [G.8271](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14988) | 2020-03-15 | In force | AAP | Time and phase synchronization aspects of telecommunication networks |
| [G.8271 (2016) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14169) | 2017-08-13 | Superseded | AAP | Time and phase synchronization aspects of telecommunications networks: Amendment 1 |
| [G.8271 (2017) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14239) | 2018-03-16 | Superseded | AAP | Time and phase synchronization aspects of telecommunication networks - Amendment 1 |
| [G.8271 Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14682) | 2018-11-29 | Superseded | AAP | Time and phase synchronization aspects of telecommunication networks - Amendment 2 |
| [G.8271.1/Y.1366.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13391) | 2017-10-07 | Superseded | AAP | Network limits for time synchronization in Packet networks |
| [G.8271.1/Y.1366.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16324) | 2020-03-15 | In force | AAP | Network limits for time synchronization in packet networks with full timing support from the network |
| [G.8271.1/Y.1366.1 (2017) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14240) | 2018-03-16 | Superseded | AAP | Network limits for time synchronization in Packet networks - Amendment 1 |
| [G.8271.1/Y.1366.1 (2017) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14683) | 2019-08-29 | Superseded | AAP | Network limits for time synchronization in Packet networks - Amendment 2 |
| [G.8271.1/Y.1366.1 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16577) | 2020-10-29 | In force | AAP | Network limits for time synchronization in Packet networks with full timing support from the network - Amendment 1 |
| [G.8271.2 Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14690) | 2018-11-29 | Superseded | AAP | Network limits for time synchronization in packet networks with partial timing support from the network - Amendment 2 |
| [G.8271.2/Y.1366.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13367) | 2017-08-13 | Superseded | AAP | Network limits for time synchronization in packet networks with partial timing support from the network |
| [G.8271.2/Y.1366.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14684) | 2021-05-29 | In force | AAP | Network limits for time synchronization in packet networks with partial timing support from the network |
| [G.8271.2/Y.1366.2 (2017) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14241) | 2018-03-16 | Superseded | AAP | Network limits for time synchronization in packet networks with partial timing support from the network - Amendment 1 |
| [G.8272](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14242) | 2018-11-29 | In force | AAP | Timing characteristics of primary reference time clocks |
| [G.8272 (2018) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14989) | 2020-03-15 | In force | AAP | Timing characteristics of primary reference time clocks - Amendment 1 |
| [G.8272.1/Y.1367.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13388) | 2016-11-13 | In force | AAP | Timing characteristics of enhanced primary reference time clocks |
| [G.8272.1/Y.1367.1 (2016) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13488) | 2019-08-29 | In force | AAP | Timing characteristics of enhanced primary reference time clocks -Amendment 2 |
| [G.8272.1/Y.1367.1 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14262) | 2017-08-13 | In force | AAP | Timing characteristics of enhanced primary reference time clocks -Amendment 1 |
| [G.8273 (2018) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14990) | 2020-03-15 | In force | AAP | Framework of phase and time clocks - Amendment 1 |
| [G.8273 (2018) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16795) | 2020-10-29 | In force | AAP | Framework of phase and time clocks - Corrigendum 1 |
| [G.8273.2/Y.1368.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13389) | 2017-01-12 | Superseded | AAP | Timing characteristics of telecom boundary clocks and telecom time slave clocks |
| [G.8273.2/Y.1368.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14991) | 2019-08-29 | Superseded | AAP | Timing characteristics of telecom boundary clocks and telecom time slave clocks |
| [G.8273.2/Y.1368.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16683) | 2020-10-29 | In force | AAP | Timing characteristics of telecom boundary clocks and telecom time slave clocks for use with full timing support from the network |
| [G.8273.2/Y.1368.2 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14244) | 2017-08-13 | Superseded | AAP | Timing characteristics of telecom boundary clocks and telecom time slave clocks - Amendment 1 |
| [G.8273.2/Y.1368.2 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16329) | 2020-03-15 | Superseded | AAP | Timing characteristics of telecom boundary clocks and telecom time slave clocks for use with full timing support from the network - Amendment 1 |
| [G.8273.2/Y.1368.2 Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13489) | 2019-01-12 | Superseded | AAP | Timing characteristics of telecom boundary clocks and telecom time slave clocks- Amendment 2 |
| [G.8273.3/Y.1368.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13360) | 2017-10-07 | Superseded | AAP | Timing characteristics of telecom transparent clocks |
| [G.8273.3/Y.1368.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16796) | 2020-10-29 | In force | AAP | Timing characteristics of telecom transparent clocks for use with full timing support from the network |
| [G.8273.3/Y.1368.3 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14245) | 2018-11-29 | Superseded | AAP | Timing characteristics of telecom transparent clocks - Amendment 1 |
| [G.8273.4/Y.1368.4](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13373) | 2020-03-15 | In force | AAP | Timing characteristics of telecom boundary clocks and telecom time slave clocks for use with partial timing support from the network |
| [G.8273.4/Y.1368.4 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16905) | 2021-05-29 | In force | AAP | Timing characteristics of telecom boundary clocks and telecom time slave clocks for use with partial timing support from the network - Amendment 1 |
| [G.8273/Y.1368](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13408) | 2018-03-16 | In force | AAP | Framework of phase and time clocks |
| [G.8275.1/Y.1369.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16321) | 2020-03-15 | In force | AAP | Precision time protocol telecom profile for phase/time synchronization with full timing support from the network |
| [G.8275.1/Y.1369.1 (2016) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13429) | 2017-08-29 | Superseded | AAP | Precision time protocol telecom profile for phase/time synchronization with full timing support from the network - Amendment 1 |
| [G.8275.1/Y.1369.1 (2016) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14247) | 2018-03-16 | Superseded | AAP | Precision time protocol telecom profile for phase/time synchronization with full timing support from the network: Amendment 2 |
| [G.8275.1/Y.1369.1 (2016) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14994) | 2019-08-29 | Superseded | AAP | Precision time protocol telecom profile for phase/time synchronization with full timing support from the network -Amendment 3 |
| [G.8275.1/Y.1369.1 (2020) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16681) | 2020-11-13 | In force | AAP | Precision time protocol telecom profile for phase/time synchronization with full timing support from the network - Amendment 1 |
| [G.8275.1/Y.1369.1 (2020) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16875) | 2021-06-29 | In force | AAP | Precision time protocol telecom profile for phase/time synchronization with full timing support from the network: Amendment 2 |
| [G.8275.2/Y.1369.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16322) | 2020-03-15 | In force | AAP | Precision time protocol telecom profile for phase/time synchronization with partial timing support from the network |
| [G.8275.2/Y.1369.2 (2016) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13423) | 2017-08-29 | Superseded | AAP | Precision time protocol telecom profile for phase/time synchronization with partial timing support from the network - Amendment 1 |
| [G.8275.2/Y.1369.2 (2016) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14248) | 2018-03-16 | Superseded | AAP | Precision time protocol telecom profile for phase/time synchronization with partial timing support from the network - Amendment 2 |
| [G.8275.2/Y.1369.2 (2016) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14689) | 2019-08-29 | Superseded | AAP | Precision time protocol telecom profile for phase/time synchronization with partial timing support from the network |
| [G.8275.2/Y.1369.2 (2020) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16682) | 2020-11-13 | In force | AAP | Precision time protocol telecom profile for phase/time synchronization with partial timing support from the network - Amendment 1 |
| [G.8275.2/Y.1369.2 (2020) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16876) | 2021-06-29 | In force | AAP | Precision time protocol telecom profile for phase/time synchronization with partial timing support from the network - Amendment 2 |
| [G.8275/Y.1369](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13422) | 2017-08-13 | Superseded | AAP | Architecture and requirements for packet-based time and phase delivery |
| [G.8275/Y.1369](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16680) | 2020-10-29 | In force | AAP | Architecture and requirements for packet-based time and phase distribution |
| [G.8275/Y.1369 (2017) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14993) | 2019-08-29 | Superseded | AAP | Architecture and requirements for packet-based time and phase distribution - Amendment 2 |
| [G.8275/Y.1369 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14246) | 2018-11-29 | Superseded | AAP | Architecture and requirements for packet-based time and phase delivery - Amendment 1 |
| [G.8275/Y.1369 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16874) | 2021-05-29 | In force | AAP | Architecture and requirements for packet-based time and phase distribution - Amendment 1 |
| [G.8300 (ex G.ctn5g)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14633) | 2020-05-22 | In force | AAP | Characteristics of transport networks to support IMT-2020/5G |
| [G.8310 (ex G.mtn-arch)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15219) | 2020-12-22 | In force | AAP | Architecture of the metro transport network |
| [G.8312 (ex G.mtn)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14975) | 2020-12-22 | In force | AAP | Interfaces for the metro transport network |
| [G.870/Y.1352](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13358) | 2016-11-13 | In force | AAP | Terms and definitions for optical transport networks |
| [G.872](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13370) | 2017-01-12 | Superseded | AAP | Architecture of optical transport networks |
| [G.872](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14996) | 2019-12-22 | In force | AAP | Architecture of the Optical Transport network (OTN) |
| [G.872 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16574) | 2021-01-13 | In force | AAP | Architecture of the optical transport network - Amendment 1 |
| [G.873.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13417) | 2017-10-07 | In force | AAP | Optical Transport Network (OTN): Linear protection |
| [G.873.1 Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16469) | 2020-03-15 | In force | AAP | Optical transport network: Linear protection - Corrigendum 1 |
| [G.873.3 (ex G.odusmp)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13359) | 2017-09-22 | In force | AAP | Optical Transport Network (OTN) - Shared Mesh Protection |
| [G.874](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13377) | 2017-08-13 | Superseded | AAP | Management aspects of optical transport network elements |
| [G.874](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14472) | 2020-10-29 | In force | AAP | Management aspects of optical transport network elements |
| [G.874.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13376) | 2016-11-13 | Superseded | AAP | Optical transport network (OTN): Protocol-neutral management information model for the network element view |
| [G.875 (ex G.874.1)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14250) | 2018-12-14 | Superseded | AAP | Optical transport network: Protocol-neutral management information model for the network element view |
| [G.875 (ex. G.874.1)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15084) | 2020-06-06 | In force | AAP | Optical transport network: Protocol-neutral management information model for the network element view |
| [G.876 (ex G.media-mgmt)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14257) | 2021-08-22 | In force | AAP | Management Requirement and Information Model for the optical media network |
| [G.959.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13456) | 2018-07-22 | In force | AAP | Optical transport networks physical layer interfaces |
| [G.9700](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14836) | 2019-07-12 | In force | TAP | Fast access to subscriber terminals (G.fast) - Power spectral density specification |
| [G.9700 (2014) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13453) | 2017-06-30 | Superseded | TAP | Fast access to subscriber terminals (G.fast) - Power spectral density specification: Amendment 2 |
| [G.9701](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14837) | 2019-03-22 | In force | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification |
| [G.9701 (2014) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13432) | 2017-04-06 | Superseded | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification: Amendment 3 |
| [G.9701 (2014) Amd.4](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13467) | 2017-12-07 | Superseded | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification: Amendment 4 |
| [G.9701 (2014) Amd.5](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14266) | 2018-08-06 | Superseded | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification: Amendment 5 |
| [G.9701 (2014) Cor.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13433) | 2017-04-06 | Superseded | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification: Corrigendum 3 |
| [G.9701 (2014) Cor.4](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14170) | 2017-12-07 | Superseded | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification: Corrigendum 4 |
| [G.9701 (2014) Cor.5](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14516) | 2018-08-06 | Superseded | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification: Corrigendum 5 |
| [G.9701 (2019) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14894) | 2019-11-22 | In force | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification - Amendment 1 |
| [G.9701 (2019) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16455) | 2020-05-07 | In force | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification: Amendment 2 |
| [G.9701 (2019) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15156) | 2019-11-22 | In force | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification - Corrigendum 1 |
| [G.9701 (2019) Cor.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16454) | 2020-05-07 | In force | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification: Corrigendum 2 |
| [G.9701 (2020) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16790) | 2020-10-29 | In force | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification: Amendment 3 |
| [G.971](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13402) | 2016-11-13 | Superseded | AAP | General features of optical fibre submarine cable systems |
| [G.971](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14221) | 2020-10-29 | In force | AAP | General features of optical submarine cable systems |
| [G.9710 (ex G.mgfast-PSD)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14552) | 2020-02-07 | In force | TAP | Multi-gigabit fast access to subscriber terminals (MGfast) - Power spectral density specification |
| [G.9711 (ex G.mgfast-PHY)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14267) | 2021-04-23 | In force | AAP | Multi-gigabit fast access to subscriber terminals (MGfast) - Physical layer specification (New) |
| [G.972](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13354) | 2016-11-13 | Superseded | AAP | Definition of terms relevant to optical fibre submarine cable systems |
| [G.972](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16420) | 2020-10-29 | In force | AAP | Definition of terms relevant to optical fibre submarine cable systems |
| [G.973](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13352) | 2016-11-13 | In force | AAP | Characteristics of repeaterless optical fibre submarine cable systems |
| [G.977.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13457) | 2020-10-29 | In force | AAP | Transverse compatible DWDM applications for repeatered optical fibre submarine cable systems |
| [G.979](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13403) | 2016-11-13 | In force | AAP | Characteristics of monitoring systems for optical submarine cable systems |
| [G.9802.1 (ex G.WDMPON.req)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16803) | 2021-08-06 | In force | AAP | Wavelength division multiplexed passive optical networks (WDM PON): General requirements |
| [G.9803 (2018) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15164) | 2019-08-29 | In force | AAP | Radio over fibre systems - Amendment 1 |
| [G.9803 (ex G.RoF)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13394) | 2018-11-29 | In force | AAP | Radio over Fiber systems |
| [G.9804.1 (ex G.hsp.req)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14548) | 2019-11-22 | In force | AAP | Higher Speed Passive Optical Networks: Requirements |
| [G.9804.1 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15229) | 2021-08-06 | In force | AAP | Higher Speed Passive Optical Networks: Requirements - Amendment 1 |
| [G.9804.2 (ex G.hsp.comTC)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14549) | 2021-09-06 | In force | AAP | Higher Speed Passive Optical Networks: Common Transmission Convergence layer Specification |
| [G.9804.3 (ex G.hsp.50Gpmd)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14550) | 2021-09-06 | In force | AAP | 50-Gigabit-capable passive optical networks (50G-PON): Physical media dependent (PMD) layer specification |
| [G.9806](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14546) | 2020-06-06 | In force | AAP | Higher speed bidirectional, single fibre, point-to-point optical access system (HS-PtP) |
| [G.9806 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16474) | 2020-10-29 | In force | AAP | Higher speed bidirectional, single fibre, point-to-point optical access system (HS-PtP)- Amendment 1 |
| [G.9806 Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16802) | 2021-05-29 | In force | AAP | Higher speed bidirectional, single fibre, point-to-point optical access system (HS-PtP) - Amendment 2 |
| [G.9807.1 (2016) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15209) | 2020-10-29 | In force | AAP | 10-Gigabit-capable symmetric passive optical network (XGS-PON) |
| [G.9807.1 (2016) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16453) | 2020-03-15 | In force | AAP | 10-Gigabit-capable symmetric passive optical network (XGS-PON): Corrigendum 1 |
| [G.9807.1 Amd.1 (ex G.XGS-PON)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13461) | 2017-10-07 | In force | AAP | 10-Gigabit-capable symmetric passive optical network (XGS-PON)- Amendment 1 |
| [G.9807.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13462) | 2017-08-13 | In force | AAP | 10 Gigabit-capable symmetric passive optical networks (XGS-PON): Reach extension |
| [G.9807.2 (2017) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14547) | 2018-11-29 | In force | AAP | 10 Gigabit-capable symmetrical passive optical networks (XG(S)-PON): Reach extension - Amendment 1 |
| [G.984.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15158) | 2019-08-29 | In force | AAP | Gigabit-capable Passive Optical Networks (GPON): Physical Media Dependent (PMD) layer specification |
| [G.984.3 (2014) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15224) | 2020-03-15 | In force | AAP | Gigabit-capable passive optical networks (G-PON): Transmission convergence layer specification |
| [G.984.5 (2014) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14218) | 2018-05-07 | In force | AAP | Gigabit-capable passive optical networks (G-PON): Enhancement band - Amendment 1 |
| [G.984.5 (2014) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15225) | 2020-10-29 | In force | AAP | Gigabit-capable passive optical networks (G-PON): Enhancement band - Amendment 2 |
| [G.987.1 (2016) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16451) | 2020-03-15 | In force | AAP | 10-Gigabit-capable passive optical networks (XG-PON): General requirements: Corrigendum 1 |
| [G.987.2 (2016) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13460) | 2017-08-13 | In force | AAP | 10-Gigabit-capable passive optical networks (XG-PON): Physical media dependent (PMD) layer specification - Amendment 1 |
| [G.987.2 (2016) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15226) | 2020-10-29 | In force | AAP | 10-Gigabit-capable passive optical networks (XG-PON): Physical media dependent (PMD) layer specification - Amendment 2 |
| [G.987.3 (2014) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15227) | 2020-03-15 | In force | AAP | 10-Gigabit-capable passive optical networks (XG-PON): Transmission convergence (TC) layer specification - Amendment 1 |
| [G.987.3 Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16799) | 2021-05-29 | In force | AAP | 10-Gigabit-capable passive optical networks (XG-PON): Transmission convergence (TC) layer specification - Amendment 2 |
| [G.988](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13459) | 2017-11-06 | In force | AAP | ONU management and control interface (OMCI) specification |
| [G.988 (2017) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14885) | 2019-08-29 | In force | AAP | ONU management and control interface (OMCI) specification: Amendment 2 |
| [G.988 (2017) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15228) | 2020-03-15 | In force | AAP | ONU management and control interface (OMCI) specification: Amendment 3 |
| [G.988 (2017) Amd.4](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16471) | 2021-09-06 | In force | AAP | ONU management and control interface (OMCI) specification: Amendment 4 |
| [G.988 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14214) | 2018-11-29 | In force | AAP | ONU management and control interface (OMCI) specification: Amendment 1 |
| [G.989.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14216) | 2019-02-06 | In force | AAP | 40-Gigabit-capable passive optical networks 2 (NG-PON2): Physical media dependent (PMD) layer specification |
| [G.989.2 (2014) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13413) | 2017-08-13 | Superseded | AAP | 40-Gigabit-capable passive optical networks 2 (NG-PON2): Physical media dependent (PMD) layer specification: Amendment 2 |
| [G.989.2 (2019) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15157) | 2019-08-29 | In force | AAP | 40-Gigabit-capable passive optical networks (NG PON2): Physical media dependent (PMD) layer specification: Corrigendum 1 |
| [G.989.2 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16473) | 2020-10-29 | In force | AAP | 40-Gigabit-capable passive optical networks 2 (NG-PON2): Physical media dependent (PMD) layer specification - Amendment 1 |
| [G.989.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16800) | 2021-05-29 | In force | AAP | 40-Gigabit-capable passive optical networks (NG-PON2): Transmission convergence layer specification |
| [G.989.3 (2015) Amd.1 (ex G.ngpon2.3)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13412) | 2016-11-13 | Superseded | AAP | Draft Amendment 1 to Recommendation ITU-T G.989.3 (2015) |
| [G.989.3 (2015) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14217) | 2018-11-29 | Superseded | AAP | 40-Gigabit-capable passive optical networks (NG-PON2): Transmission convergence layer specification - Amendment 2 |
| [G.989.3 (2015) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14889) | 2020-03-15 | Superseded | AAP | 40-Gigabit-capable passive optical networks (NG-PON2): Transmission convergence layer specification - Amendment 3 |
| [G.9901](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13379) | 2017-06-30 | In force | TAP | Narrow-band orthogonal frequency division multiplexing power line communication transceivers - power spectral density specification |
| [G.9903](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13410) | 2017-08-13 | In force | AAP | Narrow-band orthogonal frequency division multiplexing power line communication transceivers for G3-PLC networks |
| [G.9903 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16926) | 2021-05-29 | In force | AAP | Narrowband orthogonal frequency division multiplexing power line communication transceivers for G3-PLC networks - Amendment 1 |
| [G.9905 (2013) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13442) | 2016-11-13 | In force | AAP | Centralized metric-based source routing - Amendment 1 |
| [G.993.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14828) | 2019-02-22 | In force | AAP | Very high speed digital subscriber line transceivers 2 (VDSL2) |
| [G.993.2 (2015) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14176) | 2018-02-09 | Superseded | AAP | Very high speed digital subscriber line transceivers 2 (VDSL2) - Amendment 3 |
| [G.993.2 (2015) Amd.4](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14488) | 2018-05-07 | Superseded | AAP | Very high speed digital subscriber line transceivers 2 (VDSL2) - Amendment 4 |
| [G.993.2 (2015) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13437) | 2016-11-13 | Superseded | AAP | Very high speed digital subscriber line transceivers 2 (VDSL2): Corrigendum 1 |
| [G.993.5](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14829) | 2019-02-22 | In force | AAP | Self-FEXT cancellation (vectoring) for use with VDSL2 transceivers |
| [G.993.5 (2015) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13395) | 2016-12-22 | Superseded | AAP | Self-FEXT cancellation (vectoring) for use with VDSL2 transceivers: Amendment 1 |
| [G.993.5 (2015) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13465) | 2017-12-07 | Superseded | AAP | Self-FEXT cancellation (vectoring) for use with VDSL2 transceivers: Amendment 2 |
| [G.993.5 (2015) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13438) | 2016-11-13 | Superseded | AAP | Self-FEXT cancellation (vectoring) for use with VDSL2 transceivers: Corrigendum 1 |
| [G.993.5 (2015) Cor.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14487) | 2018-03-16 | Superseded | AAP | Self-FEXT cancellation (vectoring) for use with VDSL2 transceivers: Corrigendum 2 |
| [G.993.5 (2019) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16468) | 2020-03-15 | In force | AAP | Self-FEXT cancellation (vectoring) for use with VDSL2 transceivers: Corrigendum 1 |
| [G.994.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14833) | 2018-11-29 | Superseded | AAP | Handshake procedures for digital subscriber line transceivers |
| [G.994.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16475) | 2021-02-22 | In force | AAP | Handshake procedures for digital subscriber line transceivers |
| [G.994.1 (2012) Amd.8](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13435) | 2017-04-06 | Superseded | AAP | Handshake procedures for digital subscriber line transceivers: Amendment 8 |
| [G.994.1 (2012) Amd.9](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13466) | 2017-12-07 | Superseded | AAP | Handshake procedures for digital subscriber line transceivers: Amendment 9 |
| [G.994.1 (2017) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14263) | 2018-03-16 | Superseded | AAP | Handshake procedures for digital subscriber line transceivers: Amendment 2 |
| [G.994.1 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14890) | 2020-03-15 | Superseded | AAP | Handshake procedures for digital subscriber line transceivers - Amendment 1 |
| [G.9958 (ex G.shp6)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13374) | 2018-03-16 | In force | AAP | Generic architecture of home networks for energy management |
| [G.996.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14832) | 2018-11-29 | In force | AAP | Single-ended line testing for digital subscriber lines (DSL) |
| [G.996.2 (2009) Amd.5](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13396) | 2017-12-07 | Superseded | AAP | Single-ended line testing for digital subscriber lines (DSL): Amendment 5 |
| [G.996.2 (2009) Amd.6](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14515) | 2018-06-22 | Superseded | AAP | Single-ended line testing for digital subscriber lines (DSL): Amendment 6 |
| [G.996.2 (2009) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14514) | 2018-06-22 | Superseded | AAP | Single-ended line testing for digital subscriber lines (DSL): Corrigendum 1 |
| [G.9960](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14838) | 2018-11-29 | In force | AAP | Unified high-speed wireline-based home networking transceivers - System architecture and physical layer specification |
| [G.9960 (2015) Cor.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13439) | 2016-11-13 | Superseded | AAP | Unified high-speed wireline-based home networking transceivers - System architecture and physical layer specification: Corrigendum 3 |
| [G.9960 (2015) Cor.4](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14517) | 2018-03-16 | Superseded | AAP | Unified high-speed wireline-based home networking transceivers - System architecture and physical layer specification: Corrigendum 4 |
| [G.9960 (2018) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15161) | 2020-02-07 | In force | AAP | Unified high-speed wire-line based home networking transceivers - System architecture and physical layer specification: Amendment 1 |
| [G.9960 (2018) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16456) | 2020-07-22 | In force | AAP | Unified high-speed wire-line based home networking transceivers - System architecture and physical layer specification |
| [G.9960 (2018) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15203) | 2019-09-29 | In force | AAP | Unified high-speed wire-line based home networking transceivers - System architecture and physical layer specification: Corrigendum 1 |
| [G.9960 (2018) Cor.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16791) | 2020-10-29 | In force | AAP | Unified high-speed wire-line based home networking transceivers - System architecture and physical layer specification - Corrigendum 2 |
| [G.9961](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14839) | 2018-11-29 | In force | AAP | Unified high-speed wire-line based home networking transceivers - Data link layer specification |
| [G.9961 (2015) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14271) | 2018-02-09 | Superseded | AAP | Unified high-speed wire-line based home networking transceivers - Data link layer specification: Amendment 3 |
| [G.9961 (2015) Amd.4](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14527) | 2018-09-06 | Superseded | AAP | Unified high-speed wire-line based home networking transceivers - Data link layer specification: Amendment 4 |
| [G.9961 (2015) Cor.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13440) | 2016-11-13 | Superseded | AAP | Unified high-speed wireline-based home networking transceivers - Data link layer specification: Corrigendum 3 |
| [G.9961 (2015) Cor.4](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14268) | 2017-08-13 | Superseded | AAP | Unified high-speed wire-line based home networking transceivers - Data link layer specification: Corrigendum 4 |
| [G.9961 (2015) Cor.5](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14518) | 2018-09-06 | Superseded | AAP | Unified high-speed wire-line based home networking transceivers - Data link layer specification: Corrigendum 5 |
| [G.9961 (2018) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15160) | 2020-02-07 | In force | AAP | Unified high-speed wireline-based home networking transceivers - Data link layer specification: Amendment 1 |
| [G.9961 (2018) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16458) | 2020-07-22 | In force | AAP | Unified high-speed wireline-based home networking transceivers - Data link layer specification - Amendment 2 |
| [G.9961 (2018) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16792) | 2021-04-23 | In force | AAP | Unified high-speed wireline-based home networking transceivers - Data link layer specification Amendment 3 |
| [G.9961 (2018) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15202) | 2019-09-29 | In force | AAP | Unified high-speed wireline-based home networking transceivers - Data link layer specification: Corrigendum 1 |
| [G.9961 (2018) Cor.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16457) | 2020-03-15 | In force | AAP | Unified high-speed wireline-based home networking transceivers - Data link layer specification - Corrigendum 2 |
| [G.9962](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13469) | 2018-11-29 | In force | AAP | Unified high-speed wire-line based home networking transceivers - Management specification |
| [G.9962 (2014) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13441) | 2016-11-13 | Superseded | AAP | Unified high-speed wireline-based home networking transceivers - Management specification: Corrigendum 1 |
| [G.9962 (2018) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16459) | 2020-03-15 | In force | AAP | Unified high-speed wire-line based home networking transceivers - Management specification. Corrigendum 1 |
| [G.9962 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14896) | 2020-07-07 | In force | AAP | Unified high-speed wire-line based home networking transceivers - Management specification - Amendment 1 |
| [G.9963](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14840) | 2018-11-29 | In force | AAP | Unified high-speed wireline-based home networking transceivers - Multiple input/multiple output specification |
| [G.9963 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16793) | 2021-04-23 | In force | AAP | Unified high-speed wireline-based home networking transceivers - Multiple input/multiple output specification: Amendment 1 |
| [G.9964 Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15159) | 2020-02-07 | In force | TAP | Unified high-speed wireline-based home networking transceivers - Power spectral density specification - Amendment 3 |
| [G.997.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14834) | 2019-02-22 | In force | AAP | Physical layer management for digital subscriber line transceivers |
| [G.997.1 (2012) Amd.7](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14173) | 2017-12-07 | Superseded | AAP | Physical layer management for digital subscriber line transceivers - Amendment 7 |
| [G.997.1 (2012) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13436) | 2016-11-13 | Superseded | AAP | Physical layer management for digital subscriber line transceivers - Corrigendum 1 |
| [G.997.1 (2016) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14528) | 2018-05-22 | Superseded | AAP | Physical layer management for digital subscriber line transceivers - Amendment 2 |
| [G.997.1 (2016) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14510) | 2018-03-16 | Superseded | AAP | Physical layer management for digital subscriber line transceivers - Corrigendum 1 |
| [G.997.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14835) | 2019-03-22 | In force | AAP | Physical layer management for G.fast transceivers |
| [G.997.2 (2015) Amd.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13431) | 2017-04-06 | Superseded | AAP | Physical layer management for G.fast transceivers: Amendment 3 |
| [G.997.2 (2015) Amd.4](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14171) | 2017-12-07 | Superseded | AAP | Physical layer management for G.fast transceivers: Amendment 4 |
| [G.997.2 (2015) Amd.5](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14264) | 2018-08-06 | Superseded | AAP | Physical layer management for G.fast transceivers: Amendment 5 |
| [G.997.2 (2015) Cor.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13434) | 2016-12-22 | Superseded | AAP | Physical layer management for G.fast transceivers: Corrigendum 2 |
| [G.997.2 (2015) Cor.3](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14172) | 2017-08-13 | Superseded | AAP | Physical layer management for G.fast transceivers: Corrigendum 3 |
| [G.997.2 (2015) Cor.4](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14511) | 2018-03-16 | Superseded | AAP | Physical layer management for G.fast transceivers: Corrigendum 4 |
| [G.997.2 (2019) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16452) | 2020-03-15 | In force | AAP | Physical layer management for G.fast transceivers - Corrigendum 1 |
| [G.997.2 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14891) | 2020-05-07 | In force | AAP | Physical layer management for G.fast transceivers - Amendment 1 |
| [G.997.2 Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16476) | 2020-10-29 | In force | AAP | Physical layer management for G.fast transceivers - Amendment 2 |
| [G.997.3 (ex G.ploam-MGfast)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16477) | 2021-04-23 | In force | AAP | Physical layer management for MGfast transceivers |
| [G.9973](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14199) | 2017-08-13 | In force | AAP | Protocol for identifying home network topology |
| [G.9976 (ex G.uvs)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15204) | 2021-12-17 | In force | AAP | Support UHD video service over G.hn |
| [G.9977 (2016) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14175) | 2017-08-13 | In force | AAP | Mitigation of interference between DSL and PLC - Corrigendum 1 |
| [G.9978](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14842) | 2018-11-29 | In force | AAP | Secure admission in G.hn network |
| [G.9978 (ex G.996sa)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13380) | 2018-02-09 | Superseded | AAP | Secure admission in G.hn network |
| [G.9979](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14841) | 2018-11-29 | In force | AAP | Implementation of the generic mechanism in the IEEE 1905.1a-2014 Standard to include applicable ITU-T Recommendations |
| [G.998.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14886) | 2018-11-29 | In force | AAP | Ethernet-based multi-pair bonding |
| [G.998.2 (2005) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14512) | 2018-03-16 | Superseded | AAP | Ethernet-based multi-pair bonding - Corrigendum 1 |
| [G.998.4](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14830) | 2018-11-29 | In force | AAP | Improved impulse noise protection for digital subscriber line (DSL) transceivers |
| [G.998.4 (2015) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14265) | 2017-08-13 | Superseded | AAP | Improved impulse noise protection for digital subscriber line (DSL) transceivers - Corrigendum 1 |
| [G.998.4 (2018) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15163) | 2019-08-29 | In force | AAP | Improved impulse noise protection for digital subscriber line (DSL) transceivers - Corrigendum 1 |
| [G.999.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14831) | 2019-02-22 | In force | AAP | Interface between the link layer and the physical layer for digital subscriber line (DSL) transceivers |
| [G.9991 (2019) Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16461) | 2020-07-07 | In force | AAP | High-speed indoor visible light communication transceiver - System architecture, physical layer and data link layer specification (Amendment 1) |
| [G.9991 (2019) Amd.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16781) | 2021-04-23 | In force | AAP | High-speed indoor visible light communication transceiver - System architecture, physical layer and data link layer specification - Amendment 2 |
| [G.9991 (2019) Cor.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16460) | 2020-10-29 | In force | AAP | High-speed indoor visible light communication transceiver - System architecture, physical layer and data link layer specification - Corrigendum 1 |
| [G.9991 (ex G.vlc)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13397) | 2019-03-22 | In force | AAP | High speed indoor visible light communication transceiver - System architecture, physical layer and data link layer specification |
| [G.9992 (ex G.occ)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14269) | 2019-03-22 | In force | AAP | Indoor optical camera communication transceivers - System architecture, physical layer and data link layer specification |
| [L.100/L.10](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15212) | 2021-05-29 | In force | AAP | Optical fibre cables for duct and tunnel application |
| [L.105/L.87 Amd.1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15214) | 2020-03-07 | In force | Agreement | Optical fibre cables for drop applications - Amendment 1 |
| [L.108 (ex L.79)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13411) | 2018-03-16 | In force | AAP | Optical fibre cable elements for microduct blowing-installation application |
| [L.109 (ex L.60)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13366) | 2018-11-29 | In force | AAP | Construction of optical/metallic hybrid cables |
| [L.110 (ex L.dsa)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13400) | 2017-08-13 | In force | AAP | Optical fibre cables for direct surface application |
| [L.111 (ex L.oha)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14222) | 2020-10-29 | In force | AAP | Optical fibre cables for in-home applications |
| [L.151](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=15213) | 2020-10-29 | In force | AAP | Installation of Optical Fibre Ground Wire (OPGW) cable |
| [L.155 (ex.L83)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13444) | 2016-11-13 | In force | AAP | Low-impact trenching technique for FTTx networks |
| [L.156 (ex L.57)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13414) | 2018-03-16 | In force | AAP | Air-assisted installation of optical fibre cable |
| [L.162 (ex L.coi)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13443) | 2016-11-13 | In force | AAP | Microduct technology and its applications |
| [L.163 (ex L.cci)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13399) | 2018-11-29 | In force | AAP | Criteria for optical cable installation with minimal existing infrastructure |
| [L.201](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16562) | 2021-05-29 | In force | AAP | Performance requirements for passive optical nodes: Sealed closures for outdoor environments |
| [L.206 (ex L.oxcon)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13382) | 2017-08-13 | In force | AAP | Requirements for passive optical nodes: outdoor optical cross connect cabinet |
| [L.207 (ex L.pneid)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13383) | 2018-03-16 | In force | AAP | Passive node elements with automated ID tag detection |
| [L.208 (ex L.fdb)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13458) | 2019-08-29 | In force | AAP | Requirements for passive optical nodes: Fibre Distribution Box |
| [L.314 (ex L.85)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14224) | 2018-11-29 | In force | AAP | Optical fibre identification for the maintenance of optical access networks |
| [L.315 (ex L.wdc)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13401) | 2018-03-16 | In force | AAP | Water detection in underground closures for the maintenance of optical fibre cable networks with optical monitoring system |
| [L.330 (ex L.tifm)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14887) | 2020-10-29 | In force | AAP | Telecommunication Infrastructure facility management |
| [L.404 (ex L.fmc)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13369) | 2017-08-13 | In force | AAP | Field mountable single-mode optical fibre connectors |

TABLE 8  
Study Group 15 – Recommendations consented/determined at the last meeting

| Recommendation | Consent/ Determination | TAP/ AAP | Title |
| --- | --- | --- | --- |
| G.9806 Cor.1 | Consent | AAP | Higher speed bidirectional, single fibre,  point-to-point optical access system (2020 – Corrigendum 1) |
| G.984.5 | Consent | AAP | Gigabit-capable passive optical networks (G-PON): Enhancement band (revised) |
| G.9803 Amd.2 | Consent | AAP | Radio over fibre systems (2018 – Amendment 2) |
| G.9805 | Consent | AAP | Coexistence of Passive Optical Network Systems |
| G.988 Amd.5 | Consent | AAP | ONU management and control interface (OMCI) specification (2017 – Amendment 5) |
| G.9711 Amd.1 | Consent | AAP | Multi-gigabit fast access to subscriber terminals (MGfast) – Physical layer specification (2021 – Amendment 1) |
| G.994.1 Amd.1 | Consent | AAP | Handshake for DSL transceivers (2021 - Amendment 1) |
| G.997.2 Amd.3 | Consent | AAP | Physical layer management for G.fast transceivers (2019 - Amendment 3) |
| G.997.3 Amd.1 | Consent | AAP | Physical layer management for MGfast transceivers (2021 – Amendment 1) |
| G.9702 | Consent | AAP | Transceiver and system specifications for backhaul applications based on G.fast (G.fastback) (New) |
| G.9701 Amd.4 | Consent | AAP | Fast access to subscriber terminals (G.fast) - Physical layer specification (2019 - Amendment 4) |
| G.9960 Amd.3 | Consent | AAP | Unified high-speed wire-line based home networking transceivers - System architecture and physical layer specification |
| G.9961 Amd.4 | Consent | AAP | Unified high-speed wireline-based home networking transceivers –  Data link layer specification |
| G.9978 Amd.1 | Consent | AAP | Secure admission in G.hn network |
| L.400 | Consent | AAP | Optical fibre splices |
| L.316 (ex. L.cid) | Consent | AAP | Cable identification for the construction and maintenance of optical fibre cable networks with optical sensing technique |
| L.209 (ex. L.font) | Consent | AAP | Requirements for fibre optic network terminal box (FONT) |
| G.8012/Y1308 | Consent | AAP | Ethernet UNI and Ethernet NNI Note: G.8001, G.8012.1 and G8021.1 will be superseded |
| G.8021/Y.1341 | Consent | AAP | Characteristics of Ethernet transport network equipment functional blocks  Note: G.8001 and G.8021.1 will be superseded |
| G.8032/Y.1344 Cor.1 | Consent | AAP | Ethernet ring protection switching - Corrigendum 1 |
| G.709/Y.1331 Amd.2 | Consent | AAP | Interfaces for the optical transport network (OTN) - Amendment 2 |
| G.709.4 Cor.2 | Consent | AAP | OTU25 and OTU50 short-reach interfaces – Corrigendum 2 |
| G.798 Amd.4 | Consent | AAP | Characteristics of optical transport network hierarchy equipment functional blocks - Amendment 4 |
| G.873.1 Amd.1 | Consent | AAP | Optical transport network: Linear protection |
| G.8023 (2018) Amd.1 | Consent | AAP | Characteristics of equipment functional blocks supporting Ethernet physical layer and FlexE interfaces - Amendment 1 |
| G.8312 Amd.1 | Consent | AAP | Interfaces for the metro transport network |
| G.8331  (ex G.mtn-prot) | Consent | AAP | MTN linear protection |
| G.7701 | Consent | AAP | Common control aspects |
| G.7702 | Consent | AAP | Architecture for SDN control of transport networks |
| G.800 Cor.1 | Consent | AAP | Unified functional architecture of transport networks – Corrigendum 1 |
| G.805 Cor.1 | Consent | AAP | Generic functional architecture of transport networks – Corrigendum 1 |
| G.8310 Cor.1 | Consent | AAP | Architecture of the metro transport network – Corrigendum 1 |
| G.781.1 | Consent | AAP | Synchronization Layer Functions for packet-based networks |
| G.8265.1 Amd.1 | Consent | AAP | Precision time protocol telecom profile for frequency synchronization – Amendment 1 |
| G.8271.1/Y.1366.1 Amd.2 | Consent | AAP | Network limits for time synchronization in Packet networks with full timing support from the network - Amendment 2 |
| G.8273.2/Y.1368.2 Amd.1 | Consent | AAP | Timing characteristics of telecom boundary clocks and telecom time slave clocks for use with full timing support from the network - Amendment 1 |
| G.8275/Y.1369 Amd.2 | Consent | AAP | Architecture and requirements for packet-based time and phase distribution - Amendment 2 |
| G.8275.1/Y.1369.1 (2020) Amd.3 | Consent | AAP | Precision time protocol telecom profile for phase/time synchronization with full timing support from the network: Amendment 3 |
| G.8275.2/Y.1369.2 (2020) Amd.3 | Consent | AAP | Precision time protocol telecom profile for phase/time synchronization with partial timing support from the network - Amendment 3 |
| G.7711/Y.1702 | Consent | AAP | Generic protocol-neutral information model for transport resources |
| G.7712/Y.1703 Amd.1 | Consent | AAP | Architecture and specification of data communication network - Amendment 1 |
| G.7721.1 | Consent | AAP | Data models for synchronization management |

TABLE 9  
Study Group 15 – Recommendations deleted during study period

| Recommendation | Last version | Withdrawal date | Title |
| --- | --- | --- | --- |
| L.125/L.14 | 1992-07-31 | 2019-10-24 | Measurement method to determine the tensile performance of optical fibre cables under load |
| L.255/L.17 | 1995-06-20 | 2019-10-24 | Implementation of connecting customers into the public switched telephone network (PSTN) via optical fibres |
| X.87 | 2003-10-29 | 2017-01-20 | Multiple services ring based on RPR |

TABLE 10  
Study Group 15 – Recommendations submitted to WTSA-20

| Recommendation | Proposal | Title | Reference |
| --- | --- | --- | --- |
| None |  |  |  |

TABLE 11  
Study Group 15 – Supplements

| Recommendation | Date | Status | Title |
| --- | --- | --- | --- |
| [G Suppl.40](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13823) | 2018-10-19 | Revised | Optical fibre and cable Recommendations and standards guideline |
| [G Suppl.41](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13583) | 2018-02-09 | Revised | Design guidelines for optical fibre submarine cable systems |
| [G Suppl.42](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13824) | 2018-10-19 | Revised | Guide on the use of the ITU-T Recommendations related to optical fibres and systems technology |
| [G Suppl.49](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=11322) | 2020-09-18 | Revised | Rogue optical network unit (ONU) considerations: Revision 2 |
| [G Suppl.51](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13342) | 2017-06-30 | Revised | Passive optical network protection considerations |
| G Suppl.55 | 2021-12-17 | Revised | Radio-over-fibre (RoF) technologies and their applications |
| [G Suppl.58](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13585) | 2017-06-30 | Revised | Optical transport network module framer interfaces |
| [G Suppl.58](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13585) | 2018-02-09 | Revised | Optical transport network module framer interfaces |
| [G Suppl.58](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13585) | 2018-10-19 | Revised | Optical transport network (OTN) module frame interfaces |
| [G Suppl.58](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13585) | 2020-02-07 | Revised | Optical transport network module framer interfaces |
| [G Suppl.58](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13585) | 2020-09-18 | Revised | Optical transport network module framer interfaces |
| [G Suppl.59](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13585) | 2018-02-09 | Revised | Guidance on optical fibre and cable reliability |
| [G Suppl.62](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13586) | 2018-02-09 | New | Gfast certification |
| [G Suppl.63](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13587) | 2018-02-09 | New | ITU-T G.989.3 TC layer operating in ITU T G.987.3 or ITU-T G.9807.1 TC layer mode |
| [G Suppl.64](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13589) | 2018-02-09 | New | PON transmission technologies above 10 Gb/s per wavelength |
| [G Suppl.65](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13822) | 2018-10-19 | New | Simulations of transport of time over packet networks |
| [G Suppl.66](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13991) | 2018-10-19 | New | 5G Wireless Fronthaul Requirements in a PON Context |
| [G Suppl.66](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13991) | 2019-07-12 | Revised | 5G Wireless Fronthaul Requirements in a PON Context |
| [G Suppl.66](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13991) | 2020-09-18 | Revised | 5G wireless fronthaul requirements in a passive optical network context |
| [G Suppl.67](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=13992) | 2019-07-12 | New | Application of optical transport network Recommendations to 5G transport |
| [G Suppl.68](https://www.itu.int/itu-t/recommendations/rec.aspx?rec=14232) | 2020-02-07 | New | Synchronization OAM requirements |
| [G Suppl.69](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=14550) (ex. G.Sup.mtn-migration) | 2020-09-18 | New | Migration of a pre-standard network to a metro transport network |
| [G Suppl.70](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=14551) (ex.G.Sup.sub1G) | 2020-09-18 | New | Sub 1 Gbit/s services transport over OTN |
| [G Suppl.71](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=14656) (ex. G Suppl.CO DBA) | 2021-04-23 | New | OLT Capabilities for supporting CO DBA |
| [G Suppl.72](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=14657) (ex. G.Suppl.media-im-ex) | 2021-04-23 | New | Modelling consideration for optical media network |
| G Suppl.74 (ex. G.sup.PONslicing) | 2021-12-17 | New | Network Slicing in a PON Context |
| G Suppl.75 (ex. G.Sup.5GBH) | 2021-12-17 | New | 5G small cell backhaul/midhaul over TDM-PON |
| G suppl.76 (ex. G.Sup.otnsec) | 2021-12-17 | New | OTN Security |
| [L Suppl.35](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=13344) | 2017-06-30 | New | Framework of disaster management for network resilience and recovery |
| [L Suppl.39](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=14547) (ex. L Suppl.crg) | 2020-09-18 | New | Optical fibre cable Recommendations and standardization guideline |

TABLE 12  
Study Group 15 – Technical Papers

| Recommendation | Date | Status | Title |
| --- | --- | --- | --- |
| [GSTP-HNSG](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-HOME-2020-2) | 2020-09-18 | New | Use of G.hn technology for smart grid |
| [GSTP-HNIA](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-HOME-2020-1) | 2020-02-07 | New | Use of G.hn in Industrial Applications |
| [GSTP-NTSU](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-HOME-2018-3) | 2018-10-19 | New | NT software upgrade for one image |
| [LSTP-GLSR](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-L-2018-GLR) | 2018-10-19 | Revised | Guide on the use of ITU-T L-series Recommendations related to optical technologies for outside plant |
| [LSTP-GLSR](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-L-2020-GLR) | 2020-02-07 | Revised | Guide on the use of ITU-T L-series Recommendations related to optical technologies for outside plant |
| [LSTP-GLSR](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-L-2021-GLR) | 2021-04-23 | Revised | Guide on the use of ITU-T L-series Recommendations related to optical technologies for outside plant |
| [GSTP-HNAFS](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-HOME-2021-2) | 2021-04-23 | New | Architecture, function and service of home network |
| [GSTP-FTTR](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-HOME-2021-1) | 2021-04-23 | New | Use Case & Requirements of Fibre-to-The-Room (FTTR) |
| GSTP-GHN | 2021-12-17 | New | Overview of the G.hn technology |

TABLE 13  
Study Group 15 – Technical Reports

| Recommendation | Date | Status | Title |
| --- | --- | --- | --- |
| [GSTR-GNSS](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-HOME-2020-1) | 2020-02-07 | New | Considerations on the use of GNSS as a primary time reference in telecommunications |
| [GSTR-TN5G](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-HOME-2018-2) | 2018-02-09 | New | Transport network support of IMT-2020/5G |
| [GSTR-TN5G](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-HOME-2018-2) | 2018-10-19 | Revised | Transport network support of IMT-2020/5G |
| [LSTR-GLSR](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-TUT-L-2017-GLR) | 2017-06-30 | Revised | Guide on the use of ITU-T L-series Recommendations related to optical technologies for outside plant |

TABLE 14  
Study Group 15 – Other publications

| Recommendation | Date | Status | Title |
| --- | --- | --- | --- |
|  | 2021-12-17 | Revised | Access Network Transport Standards Work Plan (issue 34, December 2021) |
|  | 2021-12-17 | Revised | Access Network Transport Standards Overview​ (issue 36, December 2021) |
|  | 2021-04-23 | Revised | Access Network Transport Standards Work Plan (issue 33, April 2021) |
|  | 2021-04-23 | Revised | Access Network Transport Standards Overview​ (issue 35, April 2021) |
|  | 2020-09-18 | Revised | Access Network Transport Standards Work Plan (issue 32, September 2020) |
|  | 2020-09-18 | Revised | Access Network Transport Standards Overview​ (issue 34, September 2020) |
|  | 2020-02-07 | Revised | Access Network Transport Standards Work Plan (issue 31, February 2020) |
|  | 2020-02-07 | Revised | Access Network Transport Standards Overview​ (issue 33, February 2020) |
|  | 2019-07-12 | Revised | Access Network Transport Standards Work Plan (issue 30, July 2019) |
|  | 2019-07-12 | Revised | Access Network Transport Standards Overview (Issue 32, July 2019) |
|  | 2018-10-19 | Revised | Access Network Transport Standards Work Plan (Issue 29,October 2018) |
|  | 2018-10-19 | Revised | Access Network Transport Standards Overview (Issue 31,October 2018) |
|  | 2018-02-09 | Revised | Access Network Transport Standards Work Plan (Issue 28, February2018) |
|  | 2018-02-09 | Revised | Access Network Transport Standards Overview (Issue 30, February 2018) |
|  | 2017-06-30 | Revised | Access Network Transport Standards Work Plan (Issue 27, June 2017) |
|  | 2017-06-30 | Revised | Access Network Transport Standards Overview (Issue 29, June 2017) |
|  | 2021-12-17 | Revised | Home Network Transport Standards Overview and Work Plan (version 13, December 2021) |
|  | 2021-04-23 | Revised | Home Network Transport Standards Overview and Work Plan (version 12, April 2021) |
|  | 2020-09-18 | Revised | Home Network Transport Standards Overview and Work Plan (version 11, September 2020) |
|  | 2020-02-07 | Revised | Home Network Transport Standards Overview and Work Plan (version 10, February 2020) |
|  | 2019-07-12 | Revised | Home Network Transport Standards Overview and Work Plan (version 9, July 2019) |
|  | 2018-10-19 | Revised | Home Network Transport Standards Overview and Work Plan (version 8, October 2018) |
|  | 2018-02-09 | Revised | Home Network Transport Standards Overview and Work Plan (version 7, February 2018) |
|  | 2017-06-30 | Revised | Home Network Transport Standards Overview and Work Plan (version 6, June 2017) |
|  | 2019-07-12 | Revised | Smart Grid overview and work plan (Issue 8) |
|  | 2018-10-19 | Revised | Smart Grid overview and work plan (Issue 7) |
|  | 2018-02-09 | Revised | Smart Grid overview and work plan (Issue 6) |
|  | 2021-12-17 | Revised | Optical Transport Networks & Technologies Standardization Work Plan (Issue 30) |
|  | 2021-04-23 | Revised | Optical Transport Networks & Technologies Standardization Work Plan (Issue 29) |
|  | 2020-09-18 | Revised | Optical Transport Networks & Technologies Standardization Work Plan (Issue 28) |
|  | 2020-02-07 | Revised | Optical Transport Networks & Technologies Standardization Work Plan (Issue 27) |
|  | 2019-09-06 | Revised | Optical Transport Networks & Technologies Standardization Work Plan (Issue 26) |
|  | 2018-12-06 | Revised | Optical Transport Networks & Technologies Standardization Work Plan (Issue 25) |
|  | 2018-02-09 | Revised | Optical Transport Networks & Technologies Standardization Work Plan (Issue 24) |
|  | 2017-06-30 | Revised | Optical Transport Networks & Technologies Standardization Work Plan (Issue 23) |

ANNEX 2  
  
Proposed updates to the Study Group 15 mandate and Lead Study Group roles

**(WTSA Resolution 2)**

The following are the proposed changes to the Study Group 15 mandate and Lead Study Group roles agreed at the last Study Group 15 meeting in this study period, based on the relevant portions of [WTSA-16 Resolution 2](https://www.itu.int/dms_pub/itu-t/opb/res/T-RES-T.2-2016-PDF-E.pdf).

Annex A  
(to Resolution 2 (Rev. Geneva, 2022))

Part 1 – General areas of study

*[No changes requested to the general areas of study]*

**ITU‑T Study Group 15**

**Networks, technologies and infrastructures for transport, access and home**

ITU‑T Study Group 15 is responsible in ITU‑T for the development of standards for the optical transport network, access network, home network and power utility network infrastructures, systems, equipment, optical fibres and cables. This includes related installation, maintenance, management, test, instrumentation and measurement techniques, and control plane technologies to enable the evolution toward intelligent transport networks, including the support of smart-grid applications.

Part 2 – Lead ITU‑T study groups in specific areas of study

SG15 Lead study group on access network transport  
Lead study group on home networking  
Lead study group on optical technology

Annex B  
(to Resolution 2 (Rev. Geneva, 2022))

Points of guidance to ITU‑T study groups for development  
of the post-2022 work programme

ITU‑T Study Group 15

ITU‑T Study Group 15 is the focal point in ITU‑T for the development of standards on networks, technologies and infrastructures for transport, access and home. This encompasses the development of related standards for the customer premises, access, metropolitan and long-haul sections of communication networks.

Particular emphasis is given to providing global standards for a high-capacity (terabit) optical transport network (OTN) infrastructure, and for high‑speed (multi‑Mbit/s and Gbit/s) network access and home networking. This includes the related work on modelling for network, system and equipment management, transport network architectures and layer interworking. Special consideration is being given to the changing telecommunication environment, for example, supporting the evolving needs of mobile communication networks.

Access network technologies addressed by the study group include passive optical network (PON), point-to-point optical, and copper-based digital subscriber line technologies, including ADSL, VDSL, HDSL, SHDSL, G.fast, and MGfast. These access technologies find application in their traditional uses as well as in backhaul and fronthaul networks for emerging services such as broadband wireless and data centre interconnect. Home networking technologies include wired broadband, wired narrowband and wireless narrowband, optical fibre, and free-space optical communications. Both access and home networking for smart-grid applications are supported.

Network, system and equipment features covered include: routing, switching, interfaces, multiplexers; secure transport; network synchronization (including frequency, time and phase); cross-connect (including optical cross-connect (OXC)), add/drop multiplexers (including fixed or reconfigurable optical add/drop multiplexers (ROADM)), amplifiers, transceivers, repeaters, regenerators; multilayer network protection switching and restoration; operations, administration and maintenance (OAM); transport resource management and control capabilities to enable increased transport network agility, resource optimization, and scalability (e.g. the application of software-defined networking (SDN) to transport networks together with enabling the use of artificial intelligence (AI)/machine learning (ML) to support the automation of transport network operations). Many of these topics are addressed for various media and transport technologies, such as metallic and terrestrial/submarine optical fibre cables, dense and coarse wavelength division multiplexing (DWDM and CWDM) optical systems for fixed and flex-grid networks, optical transport network (OTN), including the evolution of OTN beyond 400 Gbit/s rates, Ethernet and other packet-based data services.

The study group will handle the entire range of fibre and cable performance including test methods, field deployment and installation, taking into account the need for additional specifications driven by new optical fibre technologies and new applications. The activity on field deployment and installation will address reliability, security aspects and social issues, such as the reduction of excavation, the problems caused to traffic and the generation of construction noise, and will include the investigation and standardization of new techniques allowing faster, cost-effective and safer cable installation. Planning, construction, maintenance and management of the physical infrastructure will take into account the advantages of emerging technologies. Approaches that improve network resilience and recovery from disasters will be studied.

In its work, Study Group 15 will take into account related activities in other ITU study groups, standards development organizations (SDOs), forums and consortia, and will collaborate with them to avoid duplication of effort and identify any gaps in the development of global standards.

Study Group 15 developed standards on networks, technologies and infrastructures for transport, access and home relate to the WSIS Action Line C2 “Information and communication infrastructure” and the UN Sustainable Development Goal SDG 9 “Industry, Innovation and Infrastructure”.

Annex C  
(to Resolution 2 (Rev. Geneva, 2022))

List of Recommendations under the responsibility of the respective   
ITU‑T study groups and TSAG in the 2022-2024 study period

ITU‑T Study Group 15

ITU‑T G-series, except those under the responsibility of Study Groups 2, 12, 13 and 16

ITU‑T I.326, ITU‑T I.414, ITU‑T I.430-series, ITU‑T I.600-series and ITU‑T I.700-series, except ITU‑T I.750-series

ITU-T J.190 and ITU-T J.192

ITU‑T L-series, except those under the responsibility of Study Group 5

ITU‑T O-series (including ITU‑T O.41/ITU‑T P.53), except those under the responsibility of Study Group 2

ITU‑T Q.49/O.22 and ITU‑T Q.500-series, except ITU‑T Q.513

Maintenance of the ITU‑T R-series

ITU‑T X.50-series, ITU‑T X.85/ Y.1321, ITU‑T X.86/ Y.1323, ITU‑T X.87/Y.1324

ITU‑T V.38, ITU‑T V.55/ O.71, ITU‑T V.300

ITU‑T Y.1300 - ITU‑T Y.1309, ITU‑T Y.1320 - ITU‑T Y.1399, ITU‑T Y.1501 and ITU‑T Y.1700-series

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