|  |  |  |
| --- | --- | --- |
| INTERNATIONAL TELECOMMUNICATION UNION | | **STUDY GROUP 17** |
| **TELECOMMUNICATION STANDARDIZATION SECTOR**  STUDY PERIOD 2017-2020 | | **TD 0155** |
| **English only**  **Original: English** |
| **Question(s):** | All/17 | Geneva, 21 – 29 March 2017 |
| **TD** | | |
| **Source:** | TSB | |
| **Title:** | Status of X-series Recommendations (revised 14 October 2016) | |

Status of X-series Recommendations

(Revised 14 October 2016)

These tables give the status of the work program for the ITU-T X-series Recommendations. These tables provide X-series Recommendations (approved and draft texts) including for each:

– Recommendation number

– Full title of Recommendation

– Approval year for current edition and, if not published, the location of the text

– An indication whether the current edition is common text (C) with ISO/IEC or twin (T) with ISO/IEC or other SDO or is not collaborative (I)

– Name of the editor

– Location of the latest text for on-going work

– Number of the ISO/IEC or other SDO equivalent standard, if there is one

– Target date (date of study group or working party "*consent*" or “*determination*” meeting) for on-going work

– An indication whether the on-going work is intended to be common text (C) with ISO/IEC or twin (T) with ISO/IEC or other SDO or is not collaborative (I)

– Tentative assignment of drafts texts to X-subseries numbering spaces.

All X-series Recommendations are the responsibility of Study Group 17 except:

– Recommendations X.1 through X.25, X.28 through X.49, X.60 through X.84, X.90 through X.159, X.180 through X.199, X.272 and the X.300-series and X-series Supplement 1which are under the responsibility of Study Group 13

– Recommendations X.26 (V.10) and X.27 (V.11) which are under the responsibility of Study Group 16

– Recommendations X.50 through X.58, X.85/Y.1321, X.86/Y.1323 and X.87/Y.1324 which are under the responsibility of Study Group 15

– X.160-series, X.170-series and X.700-series of Recommendations which are under the responsibility of Study Group 2

– Recommendations X.600 through X.609 and X-series Supplements 4 and 5 which are under the responsibility of Study Group 11

In addition to the X-series Recommendations, there are several Implementers’ Guides which reflect the status of work on defects discovered since publication.

*Notes to the tables:*

AAP denotes Last Call or Additional Review text

ISP denotes International Standardized Profile

LATEST TEXT\* denotes series of Recommendations subject to Implementers' Guide

TAP denotes determined text

TC denotes Technical Corrigendum

TR denotes Technical Report

nn? denotes a Question number (not confirmed)

MGT denotes maintenance by SG Management Team

**PUBLIC DATA NETWORKS  
(X.1 – X.199)**

Services and Facilities  
(X.1 – X.19)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.1** | International user classes of service in, and categories of access to, public data networks and Integrated Services Digital Networks (ISDNs) | 2000 | I | 13 | 20? | Valentine Ossipov |  | None |  |  |
| **X.2** | International data transmission services and optional user facilities in public data networks and ISDNs | 2000 | I | 13 | 20? | Valentine Ossipov |  | None |  |  |
| **X.3** | Packet Assembly/Disassembly facility (PAD) in a public data network | 2000 | I | 13 | 20? | Edmond J. Blausten |  | None |  |  |
| **X.4** | General structure of signals of International Alphabet No. 5 code for character oriented data transmission over public data networks | 1988 | I | 13 | 20? |  |  | related to ISO 1177 |  |  |
| **X.5** | Facsimile Packet Assembly/Disassembly facility (FPAD) in a public data network | 1996 | I | 13 | 20? | Yasuhiro Obata |  | None |  |  |
| **X.6** | Multicast service definition | 1997 | I | 13 | 20? | Samir Saad |  | None |  |  |
| **X.6 Amd.1** | Frame relay PVC multicast service definition | Amd.1 (2000) | I | 13 | 20? | Kamlesh Tewani |  |  |  |  |
| **X.7** | Technical characteristics of data transmission services | 2004 | I | 13 | 20? | Valentine Ossipov |  | None |  |  |
| **X.8** | Multi-aspect PAD (MAP) framework and service definition | 1994 | I | 13 | 20? |  |  | None |  |  |
| **X.10** | Categories of access for data terminal equipment (DTE) to public data transmission services | Withdrawn |  |  |  |  | See X.1 | None |  |  |
| **X.15** | Definition of terms concerning public data networks | Withdrawn |  |  |  |  |  | None |  |  |

Interfaces  
(X.20 – X.49)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.20** | Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for start-stop transmission services on public data networks | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.20*bis*** | Use on public data networks of Data Terminal Equipment (DTE) which is designed for interfacing to asynchronous duplex V-Series modems | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.21** | Interface between Data Terminal Equipment and Data Circuit-terminating Equipment for synchronous operation on public data networks | 1992 | I | 13 | 20? |  |  | None |  |  |
| **X.21*bis*** | Use on public data networks of Data Terminal Equipment (DTE) which is designed for interfacing to synchronous V-Series modems | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.22** | Multiplex DTE/DCE interface for user classes 3-6 | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.24** | List of definitions for interchange circuits between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) on public data networks | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.25** | Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit | 1996 Cor.1 (1998) | I I | 13 | 20? | Daniel Duclos |  | related to ISO/IEC 7776 and ISO/IEC 8208 |  |  |
| **X.26/ V.10** | Electrical characteristics for unbalanced double-current interchange circuits operating at data signalling rates nominally up to 100 kbit/s | 1993 | I | 16 | 15 |  |  | None |  |  |
| **X.27/ V.11** | Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbit/s | 1996 | I | 16 | 15 |  |  | None |  |  |
| **X.28** | DTE/DCE interface for a start-stop mode Data Terminal Equipment accessing the Packet Assembly/Disassembly facility (PAD) in a public data network situated in the same country | 1997 | I | 13 | 20? | R. Selma |  | None |  |  |
| **X.28 Amd.1** | Extensions of PAD parameters settings and PAD service signals | Amd.1 (2000) | I | 13 | 20? | Edmond J. Blausten |  | None |  |  |
| **X.29** | Procedures for the exchange of control information and user data between a Packet Assembly/Disassembly (PAD) facility and a packet mode DTE or another PAD | 1997 | I | 13 | 20? | R. Selma |  | None |  |  |
| **X.30/ I.461** | Support of X.21, X.21*bis* and X.20*bis* based Data Terminal Equipments (DTEs) by an Integrated Services Digital Network (ISDN) | 1993 | I | 13 | 20? |  |  | None |  |  |
| **X.31/ I.462** | Support of packet mode terminal equipment by an ISDN | 1995 | I | 13 | 20? |  |  | None |  |  |
| **X.32** | Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for terminals operating in the packet mode and accessing a Packet Switched Public Data Network through a public switched telephone network or an Integrated Services Digital Network or a Circuit Switched Public Data Network | 1996 | I | 13 | 20? | Trevor Davies |  | None |  |  |
| **X.33** | Access to packet switched data transmission services via frame relaying data transmission services | 1996 | I | 13 | 20? | Samir Saad |  | None |  |  |
| **X.34** | Access to packet switched data transmission services via B-ISDN | 1996 Cor.1 (2000) | I I | 13 | 20? | A. Kiyama |  | None |  |  |
| **X.35** | Interface between a PSPDN and a private PSDN which is based on X.25 procedures and enhancements to define a gateway function that is provided in the PSPDN | 1993 | I | 13 | 20? |  |  | None |  |  |
| **X.36** | Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for public data networks providing frame relay data transmission service by dedicated circuit | 2003 | I | 13 | 12? | Claude Kawa |  | None |  |  |
| **X.37** | Encapsulation in X.25 packets of various protocols including frame relay | 1995 | I | 13 | 20? | Pascal Ballouard |  | None |  |  |
| **X.38** | G3 facsimile equipment/DCE interface for G3 facsimile equipment accessing the Facsimile Packet Assembly/Disassembly facility (FPAD) in a public data network situated in the same country | 1996 | I | 13 | 20? | Yasuhiro Obata |  | None |  |  |
| **X.39** | Procedures for the exchange of control information and user data between a Facsimile Packet Assembly/Disassembly (FPAD) facility and a packet mode Data Terminal Equipment (DTE) or another FPAD | 1996 | I | 13 | 20? | Yasuhiro Obata |  | None |  |  |
| **X.40** | Standardization of frequency-shift modulated transmission systems for the provision of telegraph and data channels by frequency division of a group | Withdrawn |  |  |  |  |  | None |  |  |
| **X.42** | Procedures and methods for accessing a public data network from a DTE operating under control of a generalized polling protocol | 2003 | I | 13 | 20? | Miroslaw Kula |  | None |  |  |
| **X.45** | Interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) for terminals operating in the packet mode and connected to public data networks, designed for efficiency at higher speeds | 1996 | I | 13 | 20? | Pascal Ballouard |  | None |  |  |
| **X.46** | Access to FRDTS via B-ISDN | 1998 | I | 13 | 20? |  |  | None |  |  |
| **X.48** | Procedures for the provision of a basic multicast service for data terminal equipments (DTEs) using Recommendation X.25 | 1996 | I | 13 | 20? | Samir Saad |  | None |  |  |
| **X.49** | Procedures for the provision of an extended multicast service for data terminal equipments (DTEs) using Recommendation X.25 | 1996 | I | 13 | 20? | Samir Saad |  | None |  |  |

Transmission, Signalling and Switching  
(X.50 – X.89)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.50** | Fundamental parameters of a multiplexing scheme for the international interface between synchronous data networks | 1988 | I | 15 | 11? |  |  | None |  |  |
| **X.50*bis*** | Fundamental parameters of a 48-kbit/s user data signalling rate transmission scheme for the international interface between synchronous data networks | 1988 | I | 15 | 11? |  |  | None |  |  |
| **X.51** | Fundamental parameters of a multiplexing scheme for the international interface between synchronous data networks using 10-bit envelope structure | 1988 | I | 15 | 11? |  |  | None |  |  |
| **X.51*bis*** | Fundamental parameters of a 48-kbit/s user data signalling rate transmission scheme for the international interface between synchronous data networks using 10-bit envelope structure | 1988 | I | 15 | 11? |  |  | None |  |  |
| **X.52** | Method of encoding anisochronous signals into a synchronous user bearer | 1988 | I | 15 | 11? |  |  | None |  |  |
| **X.53** | Numbering of channels on international multiplex links at 64 kbit/s | 1993 | I | 15 | 11? |  |  | None |  |  |
| **X.54** | Allocation of channels on international multiplex links at 64 kbit/s | 1988 | I | 15 | 11? |  |  | None |  |  |
| **X.55** | Interface between synchronous data networks using a 6 + 2 envelope structure and single channel per carrier (SCPC) satellite channels | 1988 | I | 15 | 11? |  |  | None |  |  |
| **X.56** | Interface between synchronous data networks using an 8 + 2 envelope structure and single channel per carrier (SCPC) satellite channels | 1988 | I | 15 | 11? |  |  | None |  |  |
| **X.57** | Method of transmitting a single lower speed data channel on a 64 kbit/s data stream | 1988 | I | 15 | 11? |  |  | None |  |  |
| **X.58** | Fundamental parameters of a multiplexing scheme for the international interface between synchronous non-switched data networks using no envelope structure | 1988 | I | 15 | 11? |  |  | None |  |  |
| **X.60** | Common channel signalling for circuit switched data applications | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.61** | Signalling System No. 7 - Data user part | Withdrawn |  |  |  |  |  | None |  |  |
| **X.70** | Terminal and transit control signalling system for start-stop services on international circuits between anisochronous data networks | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.71** | Decentralized terminal and transit control signalling system on international circuits between synchronous data networks | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.75** | Packet-switched signalling system between public networks providing data transmission services | 1996 Cor.1 (1998) | I I | 13 | 20? | Trevor Davies |  | None |  |  |
| **X.76** | Network-to-network interface between public networks providing PVC and/or SVC frame relay data transmission service | 2003 | I | 13 | 12? | Claude Kawa |  | None |  |  |
| **X.77** | Interworking procedures between PSPDNs via B-ISDN | 1997 Cor.1 (2000) | I I | 13 | 20? |  |  | None |  |  |
| **X.78** | Interworking procedures between networks providing frame relay data transmission service via B-ISDN | 1999 Cor.1 (2000) | I I | 13 | 20? |  |  | None |  |  |
| **X.80** | Interworking of interexchange signalling systems for circuit switched data services | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.81** | Interworking between an ISDN circuit-switched and a circuit-switched public data network (CSPDN) | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.82** | Detailed arrangements for interworking between CSPDNs and PSPDNs based on Recommendation T.70 | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.84** | Frame relay – MPLS network interworking | 2004 | I | 13 | 13 | Claude Kawa |  | None |  |  |
| **X.85/ Y.1321** | IP over SDH using LAPS | 2001 Cor.1 (2005) | I I | 15 | 11 | Shaohua Yu |  | None |  |  |
| **X.85/ Y.1321 Amd.1** | Bit oriented method for LAPS | 2004 | I | 15 | 11 | Shaohua Yu |  | None |  |  |
| **X.85/ Y.1321 Amd.2** | Additional SAPI values for encapsulated protocols | 2009 | I | 15 | 11 | Shaohua Yu |  | None |  |  |
| **X.86/ Y.1323** | Ethernet over LAPS | 2001 | I | 15 | 11 | Shaohua Yu |  | None |  |  |
| **X.86/ Y.1323 Amd.1** | Using Ethernet flow control as rate limiting | 2002 | I | 15 | 11 | Shaohua Yu |  | None |  |  |
| **X.87/ Y.1324** | Multiple services ring based on RPR | 2003 | I | 15 | 11? | Shaohua Yu |  | None |  |  |

Network Aspects  
(X.90 – X.149)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.92** | Hypothetical reference connections for public synchronous data networks | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.96** | Call progress signals in public data networks | 2000 | I | 13 | 20? | Valentine Ossipov |  | None |  |  |
| **X.110** | International routing principles and routing plan for public data networks | 2002 | I | 13 | 20? | Kamlesh Tewani |  | None |  |  |
| **X.111** | Routing between public frame relay networks | 2003 | I | 13 | 20? | Peter Hicks |  | None |  |  |
| **X.115** | Definition of address translation capability in public data networks | 1995 | I | 13 | 20? | Kamlesh Tewani |  | None |  |  |
| **X.115 Amd.1** | Refinements | Amd.1 (1996) | I | 13 | 20? | Kamlesh Tewani |  | None |  |  |
| **X.116** | Address translation registration and resolution protocol | 1996 | I | 13 | 20? | Kamlesh Tewani |  | None |  |  |
| **X.121** | International numbering plan for public data networks | 2000 | I | 13 | 20? | Peter Hicks |  | None |  |  |
| **X.122/ E.166** | Numbering plan interworking for the E.164 and X.121 numbering plans | 1998 | I | 13 | 20? | Peter Hicks |  | None |  |  |
| **X.123** | Mapping between escape codes and TOA/NPI for E.164/X.121 numbering plan interworking during the transition period | 1996 | I | 13 | 20? | Peter Hicks |  | None |  |  |
| **X.124** | Arrangements for the interworking of the E.164 and X.121 numbering plans for frame relay and ATM networks | 1999 | I | 13 | 20? | Peter Hicks |  | None |  |  |
| **X.125** | Procedure for the notification of the assignment of international network identification codes for public frame relay data networks and ATM networks numbered under the E.164 numbering plan | 1998 | I | 13 | 20? | Peter Hicks |  | None |  |  |
| **X.130** | Call processing delays in public data networks when providing international synchronous circuit-switched data services | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.131** | Call blocking in public data networks when providing international synchronous circuit-switched data services | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.134** | Portion boundaries and packet layer reference events: basis for defining packet-switched performance parameters | 1997 | I | 13 | 20? | Garry Couch |  | None |  |  |
| **X.135 includes Supp.1** | Speed of service (delay and throughput) performance values for public data networks when providing international packet-switched services | 1997 | I | 13 | 20? | Garry Couch |  | None |  |  |
| **X.136** | Accuracy and dependability performance values for public data networks when providing international packet-switched services | 1997 | I | 13 | 20? | Garry Couch |  | None |  |  |
| **X.137** | Availability performance values for public data networks when providing international packet-switched services | 1997 | I | 13 | 20? | Garry Couch |  | None |  |  |
| **X.138** | Measurement of performance values for public data networks when providing international packet-switched services | 1997 | I | 13 | 20? | Garry Couch |  | None |  |  |
| **X.139** | Echo, drop, generator and test DTEs for measurement of performance values in public data networks when providing international packet-switched services | 1997 | I | 13 | 20? | Garry Couch |  | None |  |  |
| **X.140** | General quality of service parameters for communication via public data networks | 1992 | I | 13 | 20? |  |  | None |  |  |
| **X.141** | General principles for the detection and correction of errors in public data networks | 1988 Cor. (1990) | I I | 13 | 20? |  |  | None |  |  |
| **X.142** | Quality of service metrics for characterizing Frame Relay/ATM service interworking performance | 2003 | I | 13 | 13 | Peter Hicks |  | None |  |  |
| **X.144** | User information transfer performance parameters for public frame relay data networks | 2003 | I | 13 | 13 | Garry Couch, Peter Hicks |  | None |  |  |
| **X.145** | Connection establishment and dis-engagement performance parameters for public Frame Relay data networks providing SVC services | 2003 | I | 13 | 13 | Garry Couch, Peter Hicks |  | None |  |  |
| **X.146** | Performance objectives and quality of service classes applicable to frame relay | 2000 | I | 13 | 13 | Garry Couch |  | None |  |  |
| **X.147** | Frame relay network availability | 2003 | I | 13 | 13 | Peter Hicks |  | None |  |  |
| **X.147 Amd.1** | Specification of values for availability objective | 2004 | I | 13 | 13 | Peter Hicks |  | None |  |  |
| **X.148** | Procedures for the measurement of the performance of PDNS providing the international frame relay service | 2003 | I | 13 | 13 | Garry Couch |  | None |  |  |
| **X.149** | Performance of IP networks when supported by public Frame Relay data networks | 2003 | I | 13 | 13 | Garry Couch, Peter Hicks |  | None |  |  |

Maintenance  
(X.150 – X.179)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.150** | Principles of maintenance testing for public data networks using Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) test loops | 1988 | I | 13 | 20? |  |  | related to ISO 9067 |  |  |
| **X.151** | Frame Relay operations and maintenance – Principles and functions | 2003 | I | 13 | 13 | Peter Hicks |  | None |  |  |
| **X.160** | Architecture for customer network management service for public data networks | 1996 | I | 2 | 7 |  |  | None |  |  |
| **X.161** | Definition of customer network management services for public data networks | 1997 | I | 2 | 7 | Hiroshi Sunaga |  | None |  |  |
| **X.162** | Definition of management information for customer network management service for public data networks to be used with the CNMc interface | 2000 | I | 2 | 7 | Tomoya Amie |  | None |  |  |
| **X.163** | Definition of management information for customer network management service for public data networks to be used with the CNMe interface | 1995 | I | 2 | 7 | Tomoya Amie |  | None |  |  |
| **X.170** | Network-network management architecture for data networks | 1999 | I | 2 | 7 | Hiroshi Sunaga |  | None |  |  |
| **X.171** | Network-network management services for data networks | 2000 | I | 2 | 7 | Tomoya Amie |  | None |  |  |

Administrative Arrangements  
(X.180 – X.189)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.180** | Administrative arrangements for international closed user groups (CUGs) | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.181** | Administrative arrangements for the provision of international permanent virtual circuits (PVCs) | 1988 | I | 13 | 20? |  |  | None |  |  |

**OPEN SYSTEMS INTERCONNECTION  
(X.200 – X.299)**

Model and Notation  
(X.200 – X.209)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.200** | Information technology – Open Systems Interconnection – Basic Reference Model: The basic model | 1994 | C | 17 | 11 | John Day |  | ISO/IEC 7498-1 |  |  |
| **X.207** | Information technology – Open Systems Interconnection – Application Layer structure | 1993 | C | 17 | 11 | Cherry Tom |  | ISO/IEC 9545 |  |  |
| **X.208** | Specification of Abstract Syntax Notation One (ASN.1) | Withdrawn |  |  |  |  | See X.680 | None |  |  |
| **X.209** | Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1) | Withdrawn |  |  |  |  | See X.690 | None |  |  |

Service Definitions  
(X.210 – X.219)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.210** | Information technology – Open Systems Interconnection – Basic Reference Model: Conventions for the definition of OSI services | 1993 | C | 17 | 11 | Bryan Wood |  | ISO/IEC 10731 |  |  |
| **X.211** | Information technology – Open System Interconnection – Physical service definition | 1995 | C | 17 | 11 |  |  | ISO/IEC 10022 |  |  |
| **X.212** | Information technology – Open System Interconnection – Data Link service definition | 1995 | C | 17 | 11 | Kamlesh Tewani |  | ISO/IEC 8886 |  |  |
| **X.213** | Information technology – Open Systems Interconnection – Network service definition | 2001 | C | 17 | 11 | Peter Hicks |  | ISO/IEC 8348 |  |  |
| **X.214** | Information technology – Open Systems Interconnection –Transport service definition | 1995 | C | 17 | 11 | H. Lee |  | ISO/IEC 8072 |  |  |
| **X.215** | Information technology – Open Systems Interconnection – Session service definition | 1995 Cor.1 (2000) | C C | 17 | 11 | Andrew Chandler |  | ISO/IEC 8326 Cor.1 |  |  |
| **X.215 Amd.1** | Efficiency enhancements | Amd.1 (1997) | C | 17 | 11 | Andrew Chandler |  | ISO/IEC 8326/Amd.1 |  |  |
| **X.215 Amd.2** | Nested connections functional unit | Amd.2 (1997) | C | 17 | 11 | Andrew Chandler |  | ISO/IEC 8326/Amd.2 |  |  |
| **X.216** | Information technology – Open Systems Interconnection – Presentation service definition | 1994 | C | 17 | 11 | Grenville Taylor |  | ISO/IEC 8822 |  |  |
| **X.216 Amd.1** | Efficiency enhancements | Amd.1 (1997) | C | 17 | 11 | Grenville Taylor |  | ISO/IEC 8822/Amd.1 |  |  |
| **X.216 Amd.2** | Nested connections functional unit | Amd.2 (1997) | C | 17 | 11 | Grenville Taylor |  | ISO/IEC 8822/Amd.2 |  |  |
| **X.217** | Information technology – Open Systems Interconnection – Service definition for the Association Control Service Element | 1995 | C | 17 | 11 | John Day |  | ISO/IEC 8649 |  |  |
| **X.217 Amd.1** | Support of authentication mechanisms for the connectionless mode | Amd.1 (1996) | C | 17 | 11 | John Day |  | ISO/IEC 8649/Amd.1 |  |  |
| **X.217 Amd.2** | Fast-associate mechanism | Amd.2 (1997) | C | 17 | 11 | John Day |  | 8649/Amd.2 |  |  |
| **X.217*bis*** | Information technology – Open Systems Interconnection – Service definition for the Application Service Object Association Control Service Element | 1998 | C | 17 | 11 | Stephen Van Trees |  | ISO/IEC 15953 |  |  |
| **X.218** | Reliable Transfer: Model and service definition | 1993 | T | 17 | 11 |  |  | ISO/IEC 9066-1 |  |  |
| **X.219** | Remote Operations: Model, Notation and service definition | 1988 | T | 17 | 11 |  | see X.880 and X.881 | ISO/IEC 9072-1 |  |  |

Connection-mode Protocol Specifications  
(X.220 – X.229)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.220** | Use of X.200-Series protocols in CCITT applications | 1993 | I | 17 | 11 |  |  | None |  |  |
| **X.222** | Use of the X.25 LAPB-compatible Data Link procedures to provide the OSI connection-mode Data Link service | 1995 | T | 17 | 11 | Kamlesh Tewani |  | ISO/IEC 11575 |  |  |
| **X.222 Amd.1** | Frame relay mapping | Amd.1 (1996) | I | 17 | 11 | Kamlesh Tewani |  | None |  |  |
| **X.223** | Use of X.25 to provide the OSI connection-mode Network service for ITU-T applications | 1993 | T | 17 | 11 | Fred Burg |  | ISO/IEC 8878 |  |  |
| **X.223 Amd.1** | Transit delay and other refinements | Amd.1 (1996) | T | 17 | 11 | Fred Burg |  | ISO/IEC TC1 + TC2 + TC3 |  |  |
| **X.224** | Information technology – Open Systems Interconnection – Protocol for providing the connection-mode transport service | 1995 | C | 17 | 11 | H. Lee |  | ISO/IEC 8073 |  |  |
| **X.224 Amd.1** | Relaxation of class conformance requirements and expedited data service feature negotiation | Amd.1 (1997) | C | 17 | 11 | H. Lee |  | ISO/IEC 8073/Amd.1 |  |  |
| **X.225** | Information technology – Open Systems Interconnection – Connection-oriented Session protocol: Protocol specification | 1995 Cor.1 (2000) | C C | 17 | 11 | Andrew Chandler |  | ISO/IEC 8327-1 Cor.1 |  |  |
| **X.225 Amd.1** | Efficiency enhancements | Amd.1 (1997) | C | 17 | 11 | Andrew Chandler |  | ISO/IEC 8327-1/Amd.1 |  |  |
| **X.225 Amd.2** | Nested connections functional unit | Amd.2 (1997) | C | 17 | 11 | Andrew Chandler |  | ISO/IEC 8327-1/Amd.2 |  |  |
| **X.226** | Information technology – Open Systems Interconnection – Connection-oriented Presentation protocol: Protocol specification | 1994  Cor.1 (2015) | C  I | 17  17 | 11  11 | Grenville Taylor  Jean-Paul Lemaire |  | ISO/IEC 8823-1 |  |  |
| **X.226 Amd.1** | Efficiency enhancements | Amd.1 (1997) | C | 17 | 11 | Grenville Taylor |  | ISO/IEC 8823-1/Amd.1 |  |  |
| **X.226 Amd.2** | Nested connections functional unit | Amd.2 (1997) | C | 17 | 11 | Grenville Taylor |  | ISO/IEC 8823-1/Amd.2 |  |  |
| **X.227** | Information technology – Open Systems Interconnection – Connection-oriented protocol for the Association Control Service Element: Protocol specification | 1995 | C | 17 | 11 | John Day |  | ISO/IEC 8650-1 |  |  |
| **X.227 Amd.1** | Incorporation of extensibility markers | Amd.1 (1996) | C | 17 | 11 | John Day |  | ISO/IEC 8650-1/Amd.1 |  |  |
| **X.227 Amd.2** | Fast-associate mechanism | Amd.2 (1997) | C | 17 | 11 | John Day |  | ISO/IEC 8650-1/Amd.2 |  |  |
| **X.227*bis*** | Information technology – Open Systems Interconnection – Connection-mode protocol for the Application Service Object Association Control Service Element | 1998  2015 (Cor.1) | C  I | 17  17 | 11  11 | Stephen Van Trees  Jean-Paul Lemaire |  | ISO/IEC 15954 |  |  |
| **X.228** | Reliable Transfer: Protocol specification | 1988 Cor.1 (2000) | T T | 17 | 11 |  |  | ISO/IEC 9066-2 |  |  |
| **X.229** | Remote Operations: Protocol specification | 1988 | T | 17 | 11 |  | see X.882 | ISO/IEC 9072-2 |  |  |

Connectionless-mode Protocol Specifications  
(X.230 – X.239)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.233** | Information technology – Protocol for providing the connectionless-mode network service: Protocol specification | 1997 | C | 17 | 11 | Alan Chambers |  | ISO/IEC 8473-1 |  |  |
| **X.234** | Information technology – Protocol for providing the OSI connectionless-mode transport service | 1994 | C | 17 | 11 | H. Lee |  | ISO/IEC 8602 |  |  |
| **X.234 Amd.1** | Addition of connectionless-mode multicast capability | Amd.1 (1995) | C | 17 | 11 | H. Lee |  | ISO/IEC 8602/Amd.1 |  |  |
| **X.235** | Information technology – Open Systems Interconnection – Connectionless Session protocol: Protocol specification | 1995 | C | 17 | 11 | Andrew Chandler |  | ISO/IEC 9548-1 |  |  |
| **X.235 Amd.1** | Efficiency enhancements | 1999 | C | 17 | 11 | Stephen Van Trees |  | ISO/IEC 9548-1/Amd.1 |  |  |
| **X.236** | Information technology – Open Systems Interconnection – Connectionless Presentation protocol: Protocol specification | 1995 | C | 17 | 11 | Grenville Taylor |  | ISO/IEC 9576-1 |  |  |
| **X.236 Amd.1** | Efficiency Enhancements | 1999 | C | 17 | 11 | Stephen Van Trees |  | ISO/IEC 9576-1/Amd.1 |  |  |
| **X.237** | Information technology – Open Systems Interconnection – Connectionless protocol for the Association Control Service Element: Protocol specification | 1995 | C | 17 | 11 | John Day |  | ISO/IEC 10035-1 |  |  |
| **X.237 Amd.1** | Incorporation of extensibility markers and authentication parameters | Amd.1 (1996) Cor.1 (1999) | C C | 17 | 11 | John Day |  | 10035-1/Amd.1 |  |  |
| **X.237*bis*** | Information technology – Open Systems Interconnection – Connectionless protocol for the Application Service Object Association Control Service Element | 1998 | C | 17 | 11 | Stephen Van Trees |  | ISO/IEC 15955 |  |  |

PICS Proformas  
(X.240 – X.259)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.244** | Procedure for the exchange of protocol identification during virtual call establishment on Packet Switched Public Data Networks | Withdrawn |  |  |  |  | See X.263 | None |  |  |
| **X.245** | Information technology – Open Systems Interconnection – Connection-oriented Session protocol: Protocol Implementation Conformance Statement (PICS) proforma | 1995 | C | 17 | 11 | P. Henri |  | ISO/IEC 8327-2 |  |  |
| **X.246** | Information technology – Open Systems Interconnection – Connection-oriented Presentation protocol: Protocol Implementation Conformance Statement (PICS) proforma | 1996 | C | 17 | 11 | John Morris-Best |  | ISO/IEC 8823-2 |  |  |
| **X.247** | Information technology – Open Systems Interconnection – Protocol specification for the Association Control Service Element: Protocol Implementation Conformance Statement (PICS) proforma | 1996 | C | 17 | 11 | John Morris-Best |  | ISO/IEC 8650-2 |  |  |
| **X.248** | Information technology – Open Systems Interconnection – Reliable Transfer: Protocol Implementation Conformance Statement (PICS) proforma | 1995 | C | 17 | 11 | Bengt Ackzell |  | ISO/IEC 9066-3 |  |  |
| **X.249** | Information technology – Open Systems Interconnection – Remote Operations: Protocol Implementation Conformance Statement (PICS) proforma | 1995 | C | 17 | 11 | Bengt Ackzell |  | ISO/IEC 9072-4 |  |  |
| **X.255** | Information technology – Open Systems Interconnection – Connectionless Session protocol: Protocol Implementation Conformance Statement (PICS) proforma | 1995 | C | 17 | 11 | John Morris-Best |  | ISO/IEC 9548-2 |  |  |
| **X.256** | Information technology – Open Systems Interconnection – Connectionless Presentation protocol: Protocol Implementation Conformance Statement (PICS) proforma | 1995 | C | 17 | 11 | John Morris-Best |  | ISO/IEC 9576-2 |  |  |
| **X.257** | Information technology – Open Systems Interconnection – Connectionless protocol for the Association Control Service Element: Protocol Implementation Conformance Statement (PICS) proforma | 1995 | C | 17 | 11 | John Morris-Best |  | ISO/IEC 10035-2 |  |  |
| **X.257 Amd.1** | Support of authentication parameters | Amd.1 (1996) | C | 17 | 11 | John Morris-Best |  | ISO/IEC 10035-2/Amd.1 |  |  |

Protocol Identification  
(X.260 – X.269)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.260** | Information technology – Framework for protocol identification and encapsulation | 1996 | C | 17 | 11 | Fred Burg |  | ISO/IEC 14765 |  |  |
| **X.263** | Information technology – Protocol identification in the Network Layer | 1998 | C | 17 | 11 | Alan Chambers |  | ISO/IEC TR 9577 |  |  |
| **X.264** | Transport protocol identification mechanism | 1993 | T | 17 | 11 | H. Lee |  | ISO/IEC 11570 |  |  |

Security Protocols  
(X.270 – X.279)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.272** | Data compression and privacy over frame relay networks | 2000 | I | 13 | MGT | Abbie Barbir |  |  |  |  |
| **X.273** | Information technology – Open Systems Interconnection – Network layer security protocol | 1994 | C | 17 | 11 | Nick Pope |  | ISO/IEC 11577 |  |  |
| **X.274** | Information technology – Telecommunications and information exchange between systems – Transport layer security protocol | 1994 | C | 17 | 11 | Dale Walters |  | ISO/IEC 10736 |  |  |

Layer Managed Objects  
(X.280 – X.289)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.281** | Information technology – Elements of management information related to the OSI Physical Layer | 1999 | C | 17 | 11 |  |  | ISO/IEC 13642 |  |  |
| **X.282** | Elements of management information related to the OSI Data Link Layer | 1999 | T | 17 | 11 | Monica Stahl |  | ISO/IEC 10742 + Amds. 1, 2, 3 |  |  |
| **X.283** | Information technology – Elements of management information related to the OSI Network Layer | 1997 | C | 17 | 11 | M. Shand |  | ISO/IEC 10733 |  |  |
| **X.284** | Information technology – Elements of management information related to the OSI Transport Layer | 1997 | C | 17 | 11 | H. S. Lee |  | ISO/IEC 10737 |  |  |
| **X.287** | Information technology – Open Systems Interconnection – Structure of management information: Managed objects for supporting upper layers | 1999 | C | 17 | 11 | Laura Redmann |  | ISO/IEC 10165-8 |  |  |

Conformance Testing  
(X.290 – X.299)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.290** | OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - General concepts | 1995 | T | 11 | 11 | C. H. Yim |  | ISO/IEC 9646-1 |  |  |
| **X.291** | OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - Abstract test suite specification | 1995 | T | 11 | 11 | C. H. Yim |  | ISO/IEC 9646-2 |  |  |
| **X.292** | OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - The Tree and Tabular Combined Notation (TTCN) | 2002 | T | 17 | 12 | Ostap Monkewich |  | ISO/IEC 9646-3 |  |  |
| **X.293** | OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - Test realization | 1995 | T | 11 | 11 | C. H. Yim |  | ISO/IEC 9646-4 |  |  |
| **X.294** | OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications -Requirements on test laboratories and clients for the conformance assessment process | 1995 | T | 11 | 11 | C. H. Yim |  | ISO/IEC 9646-5 |  |  |
| **X.295** | OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - Protocol profile test specification | 1995 | T | 11 | 11 | C. H. Yim |  | ISO/IEC 9646-6 |  |  |
| **X.296** | OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - Implementation conformance statements | 1995 | T | 11 | 11 | C. H. Yim |  | ISO/IEC 9646-7 |  |  |

INTERWORKING BETWEEN NETWORKS  
(X.300 – X.399)

General  
(X.300 – X.349)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.300** | General principles for interworking between public networks and between public networks and other networks for the provision of data transmission services | 1996 | I | 13 | 20? |  |  | None |  |  |
| **X.301** | Description of the general arrangements for call control within a subnetwork and between subnetworks for the provision of data transmission services | 1996 | I | 13 | 20? | Trevor Davies |  | None |  |  |
| **X.302** | Description of the general arrangements for internal network utilities within a subnetwork and intermediate utilities between subnetworks for the provision of data transmission services | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.305** | Functionalities of subnetworks relating to the support of the OSI connection-mode network service | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.320** | General arrangements for interworking between Integrated Services Digital Networks (ISDNs) for the provision of data transmission services | 1996 | I | 13 | 20? |  |  | None |  |  |
| **X.321/ I.540** | General arrangements for interworking between Circuit-Switched Public Data Networks (CSPDNs) and Integrated Services Digital Networks (ISDNs) for the provision of data transmission services | 1996 | I | 13 | 20? |  |  | None |  |  |
| **X.322** | General arrangements for interworking between Packet-Switched Public Data Networks (PSPDNs) and Circuit-Switched Public Data Networks (CSPDNs) for the provision of data transmission services | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.323** | General arrangements for interworking between Packet-Switched Public Data Networks (PSPDNs) | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.324** | General arrangements for interworking between Packet-Switched Public Data Networks (PSPDNs) and public mobile systems for the provision of data transmission services | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.325/ I.550** | General arrangements for interworking between Packet-Switched Public Data Networks (PSPDNs) and Integrated Services Digital Networks (ISDNs) for the provision of data transmission services | 1996 | I | 13 | 20? |  |  | None |  |  |
| **X.326** | General arrangements for interworking between Packet-Switched Public Data Networks (PSPDNs) and Common Channel Signalling Network (CCSN) | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.327** | General arrangements for interworking between Packet-Switched Public Data Networks (PSPDNs) and private data networks for the provision of data transmission services | 1993 | I | 13 | 20? |  |  | None |  |  |
| **X.328** | General arrangements for interworking between Public Data Networks providing frame relay data transmission services and Integrated Services Digital Networks (ISDNs) for the provision of data transmission services | 1996 | I | 13 | 20? | Samir Saad |  | None |  |  |
| **X.329** | General arrangements for interworking between networks providing frame relay data transmission services and B-ISDN | 2000 | I | 13 | 20? |  |  | None |  |  |
| **X.340** | General arrangements for interworking between a Packet-Switched Public Data Network (PSPDN) and the international telex network | 1993 | I | 13 | 12? |  |  | None |  |  |

Satellite Data Transmission Systems  
(X.350 – X.369)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.350** | General interworking requirements to be met for data transmission in international public mobile satellite systems | 1997 | I | 13 | 20? |  |  | None |  |  |
| **X.351** | Special requirements to be met for Packet Assembly/Disassembly facilities (PADs) located at or in association with coast earth stations in the public mobile satellite service | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.352** | Interworking between Packet-Switched Public Data Networks and public maritime mobile satellite data transmission systems | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.353** | Routing principles for interconnecting public maritime mobile satellite data transmission systems with public data networks | 1988 | I | 13 | 20? |  |  | None |  |  |
| **X.361** | Connection of VSAT systems with Packet-Switched Public Data Networks based on X.25 procedures | 1996 | I | 13 | 20? |  |  | None |  |  |

IP-based networks  
(X.370 – X.379)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.370** | Arrangements for the transfer of internetwork management information | Withdrawn |  |  |  |  |  | None |  |  |
| **X.371/ Y.1402** | General arrangements for interworking between Public Data Networks and the Internet | 2001 | I | 13 | 20? | Yukio Hiramatsu |  | None |  |  |

MESSAGE HANDLING SYSTEMS  
(X.400 – X.499)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.400/ F.400** | Message handling services: Message handling system and service overview | 1999 | T | 17 | 11 | Herman Silbiger |  | ISO/IEC 10021-1 |  |  |
| **X.402** | Information technology – Message Handling Systems (MHS): Overall architecture | 1999 | C | 17 | 11 | Jim Craigie |  | ISO/IEC 10021-2 |  |  |
| **X.403** | Message handling systems: conformance testing | Withdrawn |  |  |  |  |  | None |  |  |
| **X.404** | Information technology – Message Handling Systems (MHS): MHS routing – Guide for messaging system managers | 1999 | C | 17 | 11 | Robert Willmott |  | ISO/IEC TR 10021-11 |  |  |
| **X.407** | Message handling systems: Abstract service definition conventions | Withdrawn |  |  |  |  |  | None |  |  |
| **X.408** | Message handling systems: Encoded information type conversion rules | 1988 | I | 17 | 11 |  |  | None |  |  |
| **X.410** | Message handling systems: remote operations and reliable transfer server | Withdrawn |  |  |  |  |  | None |  |  |
| **X.411** | Information technology – Message Handling Systems (MHS): Message transfer system – Abstract service definition and procedures | 1999 | C | 17 | 11 | Jim Craigie |  | ISO/IEC 10021-4 |  |  |
| **X.412** | Information technology – Message Handling Systems (MHS): MHS routing | 1999 | C | 17 | 11 |  |  | ISO/IEC 10021-10 |  |  |
| **X.413** | Information technology – Message Handling Systems (MHS): Message Store – Abstract service definition | 1999 | C | 17 | 11 | Sandy Shaw |  | ISO/IEC 10021-5 |  |  |
| **X.419** | Information technology – Message Handling Systems (MHS): Protocol specifications | 1999 | C | 17 | 11 | Jim Craigie |  | ISO/IEC 10021-6 |  |  |
| **X.420** | Information technology – Message Handling Systems (MHS): Interpersonal messaging system | 1999 | C | 17 | 11 | Jim Craigie |  | ISO/IEC 10021-7 |  |  |
| **X.421** | Message handling systems: COMFAX use of MHS | 1999 | I | 17 | 11 | Yasuhiro Obata |  | None |  |  |
| **X.435** | Information technology – Message Handling Systems (MHS): Electronic data interchange messaging system | 1999 | C | 17 | 11 | Sandy Shaw |  | ISO/IEC 10021-9 |  |  |
| **X.440** | Message handling systems: Voice messaging system | 1999 | I | 17 | 11 | Richard Jesmajian |  | None |  |  |
| **X.445** | Asynchronous protocol specification – Provision of OSI connection mode network service over the telephone network | 1995 | I | 17 | 11 | S. Albadine |  | None |  |  |
| **X.446** | Common messaging call API | 1997 | I | 17 | 11 |  |  | None |  |  |
| **X.460** | Information technology – Message Handling Systems (MHS) Management: Model and architecture | 1995 | C | 17 | 11 | P. Contant |  | ISO/IEC 11588-1 |  |  |
| **X.462** | Information technology – Message Handling Systems (MHS) Management: Logging Information | 1996 | C | 17 | 11 | Jean Tessier |  | ISO/IEC 11588-3 |  |  |
| **X.467** | Information technology – Message Handling Systems (MHS) Management: Message Transfer Agent management | 1996 | C | 17 | 11 | P. Contant |  | ISO/IEC 11588-8 |  |  |
| **X.480** | Message handling systems and directory services - conformance testing | Withdrawn |  |  |  |  |  | None |  |  |
| **X.481** | Messaging handling systems – P2 protocol PICS proforma | 1999 | T | 17 | 11 | Bengt Ackzell |  | ISO/IEC ISP 12062-2 |  |  |
| **X.482** | Messaging handling systems – P1 protocol PICS proforma | 1999 | T | 17 | 11 | Bengt Ackzell |  | ISO/IEC ISP 10611-3 |  |  |
| **X.483** | Messaging handling systems – P3 protocol PICS proforma | 1999 | T | 17 | 11 | Bengt Ackzell |  | ISO/IEC ISP 10611-4 |  |  |
| **X.484** | Messaging handling systems – P7 protocol PICS proforma | 1999 | T | 17 | 11 | Bengt Ackzell |  | ISO/IEC ISP 10611-5 & ISO/IEC ISP 10611-6 |  |  |
| **X.485** | Message handling systems: Voice messaging system Protocol Implementation Conformance Statement (PICS) proforma | 1992 | I | 17 | 11 |  |  | None |  |  |
| **X.486** | Message handling systems – Pedi protocol PICS proforma | 1999 | T | 17 | 11 | Bengt Ackzell |  | ISO/IEC ISP 12063-2 |  |  |
| **X.487** | Message handling systems – IPM-MS attributes PICS proforma | 1999 | T | 17 | 11 |  |  | ISO/IEC ISP 12062-6 |  |  |
| **X.488** | Message handling systems – EDI-MS attributes PICS proforma | 1999 | T | 17 | 11 |  |  | ISO/IEC ISP 12063-5 |  |  |

DIRECTORY  
(X.500 – X.599)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.500** | Information technology – Open Systems Interconnection – The Directory: Overview of concepts, models and services | 2016 | C | 17 | 11 | Erik Andersen |  | ISO/IEC 9594-1 |  |  |
| **X.501** | Information technology – Open Systems Interconnection – The Directory: Models | 2016 | C | 17 | 11 | Erik Andersen, Jean-Paul Lemaire |  | ISO/IEC 9594-2 |  |  |
| **X.509** | Information technology – Open Systems Interconnection – The Directory: Public-key and attribute certificate frameworks | 2016 | C | 17 | 11 | Erik Andersen, Jean-Paul Lemaire |  | ISO/IEC 9594-8 |  |  |
| **X.511** | Information technology – Open Systems Interconnection – The Directory: Abstract service definition | 2016 | C | 17 | 11 | Erik Andersen, Jean-Paul Lemaire |  | ISO/IEC 9594-3 |  |  |
| **X.518** | Information technology – Open Systems Interconnection – The Directory: Procedures for distributed operation | 2016 | C | 17 | 11 | Erik Andersen, Jean-Paul Lemaire |  | ISO/IEC 9594-4 |  |  |
| **X.519** | Information technology – Open Systems Interconnection – The Directory: Protocol specifications | 2016 | C | 17 | 11 | Erik Andersen, Jean-Paul Lemaire |  | ISO/IEC 9594-5 |  |  |
| **X.520** | Information technology – Open Systems Interconnection –The Directory: Selected attribute types | 2016 | C | 17 | 11 | Erik Andersen, Jean-Paul Lemaire |  | ISO/IEC 9594-6 |  |  |
| **X.521** | Information technology – Open Systems Interconnection – The Directory: Selected object classes | 2016 | C | 17 | 11 | Erik Andersen, Jean-Paul Lemaire |  | ISO/IEC 9594-7 |  |  |
| **X.525** | Information technology – Open Systems Interconnection – The Directory: Replication | 2016 | C | 17 | 11 | Erik Andersen, Jean-Paul Lemaire |  | ISO/IEC 9594-9 |  |  |
| **X.530** | Information technology – Open Systems Interconnection – The Directory: Use of systems management for administration of the Directory | 2008 | C | 17 | 11 | Erik Andersen, Jean-Paul Lemaire |  | ISO/IEC 9594-10 |  |  |
| **X.581** | Information technology – Open Systems Interconnection – The Directory: Directory Access Protocol – Protocol Implementation Conformance Statement (PICS) proforma | Withdrawn |  |  |  |  |  | None |  |  |
| **X.582** | Information technology – Open Systems Interconnection – The Directory: Directory System Protocol – Protocol Implementation Conformance Statement (PICS) proforma | Withdrawn |  |  |  |  |  | None |  |  |
| **X.583** | Information technology – Open Systems Interconnection – The Directory: Protocol Implementation Conformance Statement (PICS) proforma for the Directory Access Protocol | Withdrawn |  |  |  |  |  | None |  |  |
| **X.584** | Information technology – Open Systems Interconnection – The Directory: Protocol Implementation Conformance Statement (PICS) proforma for the Directory System Protocol | Withdrawn |  |  |  |  |  | None |  |  |
| **X.585** | Information technology – Open Systems Interconnection – The Directory: Protocol Implementation Conformance Statement (PICS) proforma for the Directory Operational Binding Management Protocol | Withdrawn |  |  |  |  |  | None |  |  |
| **X.586** | Information technology – Open Systems Interconnection – The Directory: Protocol Implementation Conformance Statement (PICS) proforma for the Directory Information Shadowing Protocol | Withdrawn |  |  |  |  |  | None |  |  |

OSI NETWORKING AND SYSTEM ASPECTS  
(X.600 – X.699)

Networking  
(X.601 – X.629)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.601** | Multi-peer communications framework | 2000 | I | 11 | 9 | Hyun-Kook Kahng |  | None |  |  |
| **X.602** | Information technology – Group management protocol | 2004 | C | 11 | 9 | Hyun-Kook Kahng |  | ISO/IEC 16513 |  |  |
| **X.603** | Information technology – Relayed multicast protocol: Framework | 2012 | C | 11 | 9 | Juyoung Park, Shin Gak Kang, Changkyu Lee |  | ISO/IEC 16512-1 |  |  |
| **X.603.1** | Information technology – Relayed multicast protocol: Specification for simplex group applications | 2012 | C | 11 | 9 | Juyoung Park |  | ISO/IEC 16512-2 |  |  |
| **X.603.2** | Information technology – Relayed multicast protocol: Specification for N-plex group application | 2010 | I | 11 | 9 | Shin-Gak Kang, Sung Hei Kim |  | None |  |  |
| **X.604** | Mobile multicast communications: Framework | 2010 | C | 11 | 9 | Seok-Joo Koh, Maryam Roshanaei |  | ISO/IEC 24793-1 |  |  |
| **X.604.1** | Mobile multicast communications: Protocol over native IP multicast network | 2010 | C | 11 | 9 | Yong Jin Kim, Seok-Joo Koh |  | ISO/IEC 24793-2 |  |  |
| **X.604.2** | Information technology – Mobile multicast communications: Protocol over overlay multicast networks | 2010 | I | 11 | 9 | Sung Hei Kim, Maryam Roshanaei |  | None |  |  |
| **X.605** | Information technology – Enhanced Communications Transport Service definition | 1998 | C | 11 | 9 | Dae-Young Kim |  | ISO/IEC 13252 |  |  |
| **X.606** | Information technology – Enhanced Communications Transport Protocol: Specification of simplex multicast transport | 2001 | C | 11 | 9 | Shin-Gak Kang |  | ISO/IEC 14476-1 |  |  |
| **X.606.1** | Information technology – Enhanced Communications Transport Protocol: QoS management for simplex multicast transport | 2003 | C | 11 | 9 | Shin-Gak Kang |  | ISO/IEC 14476-2 |  |  |
| **X.607** | Information technology – Enhanced Communications Transport Protocol: Specification of duplex multicast transport | 2007 | C | 11 | 9 | Dae Young Kim |  | ISO/IEC 14476-3 |  |  |
| **X.607.1** | Information technology – Enhanced Communications Transport Protocol: QoS management for duplex multicast transport | 2008 | C | 11 | 9 | Hyun-Kook Kahng |  | ISO/IEC 14476-4 |  |  |
| **X.608** | Information technology – Enhanced Communications Transport Protocol: Specification of N-plex multicast transport | 2007 | C | 11 | 9 | Shin-Gak Kang |  | ISO/IEC 14476-5 |  |  |
| **X.608.1** | Information technology – Enhanced Communications Transport Protocol: QoS management for N-plex multicast transport | 2008 | C | 11 | 9 | Shin-Gak Kang |  | ISO/IEC 14476-6 |  |  |
| **X.609** | Managed P2P communications: Functional architecture | 2015 | I | 11 | 9 | Wook Hyun, Shin-Gak Kang |  | None |  |  |
| **X.609.1** | Managed P2P communications: Peer Activity Management Protocol (PAMP) | 2016 | I | 11 | 9 | Changkyu Lee, Hyun Wook |  | None |  |  |
| **X.609.2** | Managed P2P communications: Overlay Resource Control Protocol (ORCP) | 2016 | I | 11 | 9 | Sung Hei Kim, Hyun Wook |  | None |  |  |
| **X.mp2p-mspp** | Managed P2P communications: Multimedia streaming peer protocol |  |  | 11 | 9 | Shin-Gak Kang, Hyun Wook | Annex B to COM 11- TD 1133 (GEN/11)  COM 11 – TD 1127 (GEN/11) | None | 2017-12 | I |
| **X.mp2p-mssr** | Managed P2P communications: Multimedia streaming signalling requirements |  |  | 11 | 9 | Shin-Gak Kang, Hyun Wook | COM 11 – TD 1125 (GEN/11) | None | 2017-12 | I |
| **X.610** | Provision and support of the OSI connection-mode Network Service | 1992 | I | 17 | 11 |  |  | None |  |  |
| **X.612** | Information technology – Provision of the OSI connection-mode network service by packet-mode terminal equipment connected to an Integrated Services Digital Network (ISDN) | 1992 | C | 17 | 11 |  |  | ISO/IEC 9574 |  |  |
| **X.613** | Information technology – Use of X.25 Packet Layer Protocol in conjunction with X.21/X.21bis to provide the OSI connection-mode Network Service | 1992 | C | 17 | 11 |  |  | ISO/IEC 10588 |  |  |
| **X.614** | Information technology – Use of X.25 Packet Layer Protocol to provide the OSI connection-mode Network Service over the telephone network | 1992 | C | 17 | 11 |  |  | ISO/IEC 10732 |  |  |
| **X.622** | Information technology – Protocol for providing the connectionless-mode network service: Provision of the underlying service by an X.25 subnetwork | 1994 | C | 17 | 11 |  |  | ISO/IEC 8473-3 |  |  |
| **X.623** | Information technology – Protocol for providing the connectionless-mode network service: Provision of the underlying service by a subnetwork that provides the OSI data link service | 1994 | C | 17 | 11 |  |  | ISO/IEC 8473-4 |  |  |
| **X.625** | Information technology – Protocol for providing the connectionless-mode network service: Provision of the underlying service by ISDN circuit switched B-channels | 1996 | C | 17 | 11 | Keith Knightson |  | ISO/IEC 8473-5 |  |  |

Efficiency  
(X.630 – X.639)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.630** | Efficient Open Systems Interconnection (OSI) operations | 1998 | I | 17 | 11 | Nilo Mitra |  | None |  |  |
| **X.633** | Information technology – Open Systems Interconnection – Network Fast Byte Protocol | 1996 | C | 17 | 11 | Colin Amor |  | ISO/IEC 14700 |  |  |
| **X.633 Add.1** | SDL specifications | Add.1 (1998) | I | 17 | 11 | Colin Amor |  | None |  |  |
| **X.634** | Information technology – Open Systems Interconnection –Transport Fast Byte Protocol | 1996 | C | 17 | 11 | Colin Amor |  | ISO/IEC 14699 |  |  |
| **X.634 Add.1** | SDL specifications | Add.1 (1998) | I | 17 | 11 | Colin Amor |  | None |  |  |
| **X.637** | Basic connection-oriented common upper layer requirements | 1996 | T | 17 | 11 | Nilo Mitra |  | ISO/IEC ISP 11188-1 |  |  |
| **X.638** | Minimal OSI facilities to support basic communications applications | 1996 | T | 17 | 11 | Nilo Mitra |  | ISO/IEC ISP 11188-3 |  |  |
| **X.639** | Basic connection-oriented requirements for ROSE-based profiles | 1996 | T | 17 | 11 | Nilo Mitra |  | ISO/IEC ISP 11188-2 |  |  |

Quality of Service  
(x.640 – X.649)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.641** | Information technology – Quality of Service: Framework | 1997 | C | 17 | 11 | Chris Sluman |  | ISO/IEC 13236 |  |  |
| **X.642** | Information technology – Quality of Service - Guide to methods and mechanisms | 1998 | C | 17 | 11 | Jeremy Tucker |  | ISO/IEC TR 13243 |  |  |

Naming, Addressing and Registration  
(X.650 – X.679)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.650** | Information technology – Open Systems Interconnection -Basic Reference Model: Naming and addressing | 2004 | C | 17 | 11 | John Day |  | ISO/IEC 7498-3 |  |  |
| **X.660** | Information technology –Procedures for the operation of Object Identifier Registration Authorities: General procedures and top arcs of the International Object Identifier tree | 2011 | C | 17 | 11 | Olivier Dubuisson |  | ISO/IEC 9834-1 |  |  |
| **X.662** | Information technology – Open Systems Interconnection – Procedures for the operation of OSI Registration Authorities: Registration of Object Identifier arcs beneath the top-level arc jointly administered by ISO and ITU-T | 2008 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 9834-3 |  |  |
| **X.665** | Information technology – Open Systems Interconnection – Procedures for the operation of OSI Registration Authorities: Registration of application processes and application entities | 2004 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 9834-6 |  |  |
| **X.666** | Information technology – Open Systems Interconnection – Procedures for the operation of OSI Registration Authorities: Joint ISO and ITU-T registration of international organizations | 2008 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 9834-7 |  |  |
| **X.667** | Information technology - Procedures for the operation of Object Identifier Registration Authorities: Generation of Universally Unique identifiers (UUIDs) and their use in object identifiers | 2012 | C | 17 | 11 | Paul Thorpe, Olivier Dubuisson |  | ISO/IEC 9834-8 |  |  |
| **X.668** | Information technology – Open Systems Interconnection –Procedures for the operation of OSI registration authorities: Registration of object identifier arcs for applications and services using tag-based identification | 2008 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 9834-9 |  |  |
| **X.669** | Procedures for ITU-T registration of identified organizations | 2008 | I | 17 | 11 | Paul Thorpe |  | None |  |  |
| **X.670** | Use of registration agents to register names subordinate to country names in the X.660 RH-name-tree | 2004 | I | 17 | 11 | Paul Thorpe |  | None |  |  |
| **X.671** | Procedures for a Registration Authority operating on behalf of countries to register organization names subordinate to country names in the X.660 RH-name-tree | 2004 | I | 17 | 11 | Paul Thorpe |  | None |  |  |
| **X.672** | Information technology – Open systems interconnection – Object identifier resolution system (ORS) | 2010 | C | 17 | 11 | Jun-Seob Lee |  | ISO/IEC 29186-1 |  |  |
| **X.674** | Procedure for the registration of arcs under the Alerting object identifier arc | 2011 | I | 17 | 11 | Olivier Dubuisson, Anthony Rutkowski |  | None |  |  |
| **X.675** | OID-based resolution framework for heterogeneous identifiers and locators | 2015 | I | 17 | 11 | Younghwan Choi |  | None |  |  |
| **X.oiddev** | Object identifier assignments for the Internet of things |  |  | 17 | 11 | Jun Seob Lee | COM 17 – TD 2990 |  | 2017-10 | I |

Abstract Syntax Notation One (ASN.1)  
(X.680 – X.699)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.680** | Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation | 2015 | C | 17 | 11 | Paul Thorpe Paul Thorpe |  | ISO/IEC 8824-1 | Cor. 1 2017-03 | C |
| **X.681** | Information technology – Abstract Syntax Notation One (ASN.1): Information object specification | 2015 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 8824-2 |  |  |
| **X.682** | Information technology – Abstract Syntax Notation One (ASN.1): Constraint specification | 2015 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 8824-3 |  |  |
| **X.683** | Information technology – Abstract Syntax Notation One (ASN.1): Parameterization of ASN.1 specifications | 2015 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 8824-4 |  |  |
| **X.690** | Information technology – ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER) | 2015 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 8825-1 |  |  |
| **X.691** | Information technology – ASN.1 encoding rules: Specification of Packed Encoding Rules (PER) | 2015 Cor.1 (2016) | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 8825-2 Cor.1 |  |  |
| **X.692** | Information technology – ASN.1 encoding rules – Specification of Encoding Control Notation (ECN) | 2015 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 8825-3 |  |  |
| **X.693** | Information technology – ASN.1 encoding rules: XML encoding rules | 2015 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 8825-4 |  |  |
| **X.694** | Information technology – ASN.1 encoding rules: Encoding XML-defined data using ASN.1 | 2015 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 8825-5 |  |  |
| **X.695** | Information technology – ASN.1 encoding rules: Registration and application of PER encoding instructions | 2015 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 8825-6 |  |  |
| **X.696** | Information technology – ASN.1 encoding rules: Specification of Octet Encoding Rules (OER) | 2015 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 8825-7 | Cor. 1 2017-03 | C |
| **X.jsoner** | Information technology – ASN.1 encoding rules: Specification of Javascript Object Notation (JSON) encoding Rules (JSON/ER) |  |  | 17 | 11 | Paul Thorpe | COM 17 – TD 2869 Rev.1 | ISO/IEC 8825-xx | 2018 | C |

OSI MANAGEMENT  
(X.700 – X.799)

Systems Management Framework and Architecture  
(X.700 – X.709)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.700** | Management framework for Open Systems Interconnection (OSI) for CCITT applications | 1992 | T | 2 | 7 | C. Smith |  | ISO/IEC 7498-4 |  |  |
| **X.701** | Information technology – Open Systems Interconnection – Systems management overview | 1997 | C | 2 | 7 | Tom Rutt |  | ISO/IEC 10040 |  |  |
| **X.702** | Information technology – Open Systems Interconnection – Application context for systems management with transaction processing | 1995 | C | 2 | 7 | John Paul Golick |  | ISO/IEC 11587 |  |  |
| **X.703** | Information technology – Open Distributed Management Architecture | 1997 | C | 2 | 6 | S. van der Smagt |  | ISO/IEC 13244 |  |  |
| **X.703 Amd.1** | Support using Common Object Request Broker Architecture (CORBA) | 1998 | C | 2 | 6 | Tom Rutt |  | ISO/IEC 13244/Amd.1 |  |  |

Management Communication Service and Protocol  
(X.710 – X.719)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.710** | Information technology – Open Systems Interconnection – Common management information service definition | 1997 | C | 2 | 7 | Neil Trickey |  | ISO/IEC 9595 |  |  |
| **X.711** | Information technology – Open Systems Interconnection –Common management information protocol: Specification | 1997 Cor.1 (1999) Cor.2 (2000) | C C C | 2 | 7 | Neil Trickey |  | ISO/IEC 9596-1 Cor.1 Cor.2 |  |  |
| **X.712** | Information technology – Open Systems Interconnection – Common management information protocol: Protocol Implementation Conformance Statement (PICS) proforma | 1992 Cor.1 (1996) Cor.2 (1996) Cor.3 (1998) | C C C C | 2 | 7 | Neil Trickey |  | ISO/IEC 9596-2 Cor.1 Cor.2 Cor.3 |  |  |

Structure of Management Information  
(X.720 – X.729)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST\* | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.720** | Information technology – Open Systems Interconnection – Structure of management information: Management Information Model | 1992 Cor.1 (1994) | C C | 2 | 7 | John Paul Golick |  | ISO/IEC 10165-1 Cor.1 |  |  |
| **X.720 Amd.1** | Generalization of terms | 1995 | C | 2 | 7 | Laura Redmann |  | ISO/IEC 10165-1/Amd.1 |  |  |
| **X.721** | Information technology – Open Systems Interconnection – Structure of management information: Definition of management information | 1992 Cor.1 (1994) Cor.2 (1996) Cor.3 (1998) Cor.4 (2000) | C C C C C | 2 | 7 | John Paul Golick |  | ISO/IEC 10165-2 Cor.1 Cor.2 Cor.3 |  |  |
| **X.721 Amd.1** | States to support lifecycle | 2001 | C | 2 | 7 | Arthur Foster |  | ISO/IEC 10165-2/Amd.1 |  |  |
| **X.722** | Information technology – Open Systems Interconnection – Structure of management information: Guidelines for the definition of managed objects | 1992 Cor.1 (1996) Cor.2 (2000) | C C C | 2 | 7 | John Paul Golick |  | ISO/IEC 10165-4 Cor.1 Cor.2 |  |  |
| **X.722 Amd.1** | Set by create and component registration | 1995 | C | 2 | 7 | Laura Redmann |  | ISO/IEC 10165-4/Amd.1 |  |  |
| **X.722 Amd.2** | Addition of the NO-MODIFY syntax element and guidelines extension | 1997 | C | 2 | 7 | Laura Redmann |  | ISO/IEC 10165-4/Amd.2 |  |  |
| **X.722 Amd.3** | Guidelines for the use of Z in formalizing the behaviour of managed objects | 1997 | C | 2 | 7 | Pete Young |  | ISO/IEC 10165-4/Amd.3 |  |  |
| **X.723** | Information technology – Open Systems Interconnection – Structure of management information: Generic management information | 1993 Cor.1 (1998) Cor.2 (2000) | C C C | 2 | 7 | John Paul Golick |  | ISO/IEC 10165-5 Cor.1 Cor.2 |  |  |
| **X.724** | Information technology – Open Systems Interconnection – Structure of management information: Requirements and guidelines for implementation conformance statement proformas associated with OSI management | 1996 | C | 2 | 7 | Erik Jonsson |  | ISO/IEC 10165-6 |  |  |
| **X.725** | Information technology – Open Systems Interconnection – Structure of management information: General relationship model | 1995 | C | 2 | 7 | Colin Ashford |  | ISO/IEC 10165-7 |  |  |
| **X.727** | Information technology – Open Systems Interconnection – Structure of management information: Systems management protocol machine managed objects | 1999 | C | 2 | 7 | Laura Redmann |  | ISO/IEC 10165-9 |  |  |

Management Functions and ODMA functions  
(X.700 – X.799)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST\* | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.730** | Information technology – Open Systems Interconnection – Systems Management: Object management function | 1992 | C | 2 | 7 | Amir Talaee |  | ISO/IEC 10164-1 |  |  |
| **X.730 Amd.1** | Implementation Conformance Statement proformas | 1995 Cor.1(1996) | C C | 2 | 7 | Amir Talaee |  | ISO/IEC 10164-1/Amd.1  Cor.1 |  |  |
| **X.731** | Information technology – Open Systems Interconnection – Systems Management: State management function | 1992 Cor.1 (1995) Cor.2 (2001) | C C C | 2 | 7 | Amir Talaee |  | ISO/IEC 10164-2 Cor.1 Cor.2 |  |  |
| **X.731 Amd.1** | Implementation Conformance Statement proformas | 1995 Cor.1(1996) | C C | 2 | 7 | Amir Talaee |  | ISO/IEC 10164-2/Amd.1 Cor.1 |  |  |
| **X.731 Amd.2** | States to support lifecycle | 2001 | C | 2 | 7 | Arthur Foster |  | ISO/IEC 10164-2/Amd.2 |  |  |
| **X.732** | Information technology – Open Systems Interconnection – Systems Management: Attributes for representing relationships | 1992 | C | 2 | 7 | Amir Talaee |  | ISO/IEC 10164-3 |  |  |
| **X.732 Amd.1** | Implementation Conformance Statement proformas | 1995 Cor.1(1996) | C C | 2 | 7 | Amir Talaee |  | ISO/IEC 10164-3/Amd.1 Cor.1 |  |  |
| **X.733** | Information technology – Open Systems Interconnection – Systems Management: Alarm reporting function | 1992 Cor.1 (1994) Cor.2 (1999) | C C C | 2 | 7 | Neil Trickey |  | ISO/IEC 10164-4 Cor.1 Cor.2 |  |  |
| **X.733 Amd.1** | Implementation Conformance Statement proformas | 1995 Cor.1(1996) | C C | 2 | 7 | Tom Rutt |  | ISO/IEC 10164-4/Amd.1 Cor.1 |  |  |
| **X.734** | Information technology – Open Systems Interconnection – Systems Management: Event Report Management Function | 1992 Cor.1 (1994) Cor.2 (1999) | C C C | 2 | 7 | Mark Klerer |  | ISO/IEC 10164-5 Cor.1 Cor.2 |  |  |
| **X.734 Amd.1** | Implementation Conformance Statement proformas | 1995 Cor.1(1996) | C C | 2 | 7 | Tom Rutt |  | ISO/IEC 10164-5/Amd.1 Cor.1 |  |  |
| **X.735** | Information technology – Open Systems Interconnection – Systems Management: Log control function | 1992 Cor.1 (2001) | C C | 2 | 7 | Neil Trickey |  | ISO/IEC 10164-6 Cor.1 |  |  |
| **X.735 Amd.1** | Implementation Conformance Statement proformas | 1995 Cor.1(1996) | C C | 2 | 7 | Tom Rutt |  | ISO/IEC 10164-6/Amd.1 Cor.1 |  |  |
| **X.736** | Information technology – Open Systems Interconnection – Systems Management: Security alarm reporting function | 1992 | C | 2 | 7 | Neil Trickey |  | ISO/IEC 10164-7 |  |  |
| **X.736 Amd.1** | Implementation Conformance Statement proformas | 1995 Cor.1(1996) | C C | 2 | 7 | Neil Trickey |  | ISO/IEC 10164-7/Amd.1 Cor.1 |  |  |
| **X.737** | Information technology – Open Systems Interconnection – Systems Management: Confidence and diagnostic test categories | 1995 Cor.1 (1998) Cor.2 (2000) Cor.3 (2001) | C C C C | 2 | 7 | John Westgate |  | ISO/IEC 10164-14 Cor.1 Cor.2 Cor.3 |  |  |
| **X.738** | Information technology – Open Systems Interconnection – Systems Management: Summarization function | 1993 Cor.1 (1998) Cor.2 (2000) | C C C | 2 | 7 | M. Chernick |  | ISO/IEC 10164-13 Cor.1 Cor.2 |  |  |
| **X.738 Amd.1** | Implementation Conformance Statement proformas | 1996 | C | 2 | 7 | Yuji Iwamoto |  | ISO/IEC 10164-13/Amd.1 |  |  |
| **X.739** | Information technology – Open Systems Interconnection – Systems Management: Metric objects and attributes | 1993 Cor.1 (1998) | C C | 2 | 7 | M. Chernick |  | ISO/IEC 10164-11 Cor.1 |  |  |
| **X.739 Amd.1** | Implementation Conformance Statement proformas | 1997 | C | 2 | 7 | Amir Talaee |  | ISO/IEC 10164-11/Amd.1 |  |  |
| **X.740** | Information technology – Open Systems Interconnection – Systems Management: Security audit trail function | 1992 Cor.1 (1995) Cor.2 (1996) Cor.3 (1998) | C C C C | 2 | 7 | Neil Trickey |  | ISO/IEC 10164-8 Cor.1 Cor.2 Cor.3 |  |  |
| **X.741** | Information technology – Open Systems Interconnection – Systems management: Objects and attributes for access control | 1995 Cor.1 (1996) Cor.2 (1998) Cor.3 (2000) | C C C C | 2 | 7 | Neil Trickey |  | ISO/IEC 10164-9 Cor.1 Cor.2 Cor.3 |  |  |
| **X.742** | Information technology – Open Systems Interconnection – Systems management: Usage metering function for accounting purposes | 1995 Cor.1 (1998) Cor.2 (2000) | C C C | 2 | 7 | Ole Krog Thomsen |  | ISO/IEC 10164-10 Cor.1 Cor.2 |  |  |
| **X.742 Amd.1** | Implementation Conformance Statement proformas | 1997 | C | 2 | 7 | Ole Krog Thomsen |  | ISO/IEC 10164-10/Amd.1 |  |  |
| **X.743** | Information technology – Open Systems Interconnection – Systems Management: Time management function | 1998 Cor.1 (2001) | C C | 2 | 7 | Karen O'Donoghue |  | ISO/IEC 10164-20 Cor.1 |  |  |
| **X.744** | Information technology – Open Systems Interconnection – Systems Management: Software management function | 1996 Cor.1 (1998) Cor.2 (2000) Cor.3 (2001) | C C C C | 2 | 7 | Laura Redmann |  | ISO/IEC 10164-18 Cor.1 Cor.2 Cor.3 |  |  |
| **X.744.1** | Corba-based TMN software management service | 2003 | I | 2 | 7 |  |  | None |  |  |
| **X.745** | Information technology – Open Systems Interconnection – Systems Management: Test management function | 1993 Cor.1 (1997) Cor.2 (1998) Cor.3 (2000) | C C C C | 2 | 7 | John Westgate |  | ISO/IEC 10164-12 Cor.1 Cor.2 Cor.3 |  |  |
| **X.746** | Information technology – Open Systems Interconnection – Systems Management: Scheduling function | 2000 + Erratum (2000) | C | 2 | 7 | C. Widdowson |  | ISO/IEC 10164-15 |  |  |
| **X.748** | Information technology – Open Systems Interconnection – Systems Management: Response time monitoring function | 1999 | C | 2 | 7 | Takahisa Hatakeyama |  | ISO/IEC 10164-22 |  |  |
| **X.749** | Information technology – Open Systems Interconnection – Systems Management: Management domain and management policy management function | 1997 | C | 2 | 7 | Ken Roberts |  | ISO/IEC 10164-19 |  |  |
| **X.750** | Information technology – Open Systems Interconnection – Systems Management: Management knowledge management function | 1996 Cor.1 (2000) | C C | 2 | 7 | John Paul Golick |  | ISO/IEC 10164-16 Cor.1 |  |  |
| **X.750 Amd.1** | Extension for General Relationship Model | 1997 | C | 2 | 7 | John Paul Golick |  | ISO/IEC 10164-16/Amd.1 |  |  |
| **X.751** | Information technology – Open Systems Interconnection – Systems Management: Change over function | 1995 Cor.1 (1998) Cor.2 (2000) | C C C | 2 | 7 | Nobuo Fujii |  | ISO/IEC 10164-17 Cor.1 Cor.2 |  |  |
| **X.753** | Information technology – Open Systems Interconnection – Systems Management: Command sequencer for systems management | 1997 | C | 2 | 7 | Santosh Shanbhag |  | ISO/IEC 10164-21 |  |  |
| **X.754** | Enhanced event control function | 2000 | I | 2 | 7 | Mark Klerer |  | None |  |  |
| **X.770** | Open Distributed Management - Notification dispatch function | 2001 | I | 2 | 7 | Tom Rutt |  | None |  |  |
| **X.780** | Guidelines for defining CORBA managed objects | 2001 Cor.1 (2001) Cor.2 (2002) | I I I | 2 | 7 | K. Allen |  | None |  |  |
| **X.780 Amd.1** | Enhancements | 2002 | I | 2 | 7 |  |  | None |  |  |
| **X.780.1** | TMN guidelines for defining coarse-grained CORBA managed objects | 2001 Cor.1 (2002) | I I | 2 | 7 | K. Allen |  | None |  |  |
| **X.780.1 Amd.1** |  | 2002 | I | 2 | 7 |  |  | None |  |  |
| **X.780.2** | TMN guidelines for defining service-oriented CORBA managed objects and façade objects | 2007 | I | 2 | 7 | Felix Flemisch, Hing-Kam Lam |  | None |  |  |
| **X.781** | Guidelines for CORBA Implementation Conformance Statement proforma | 2001 | I | 2 | 7 | K. Allen |  | None |  |  |
| **X.782** | Guidelines for defining Web-services for managed objects and management interfaces | 2012 Cor.1 (2013) | I | 2 | 7 | Qiao-gang Cheng, Ying Wan, Wang Zhi-li |  | None |  |  |
| **X.784** | Guidelines for implementation conformance statements proformas associated with SNMP-based management systems | 2016 | I | 2 | 7 | Lanlan Rui |  | None |  |  |
| **X.790** | Trouble management function for ITU-T applications | 1995 Cor.1 (1999) Cor.2 (2001) | I I I | 2 | 7 | A. Hazra, V. Modha |  | None |  |  |
| **X.790 Amd.1** | Implementation Conformance Statements proformas | 1996 | I | 2 | 7 | A. Hazra, V. Modha |  | None |  |  |
| **X.791** | Trouble management function: Profile | 1996 | I | 2 | 7 | V. Modha |  | None |  |  |
| **X.792** | Configuration audit support function for ITU-T applications | 1999 Cor.1 (2001) | I I | 2 | 7 | D. Matthews |  | None |  |  |

SECURITY  
(X.800 – X.849)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.800** | Security architecture for Open Systems Interconnection for CCITT applications | 1991 | T | 17 | 2 | Dale Walters |  | ISO/IEC 7498-2 |  |  |
| **X.800 Amd.1** | Layer two security service and mechanisms for LANs | 1996 | I | 17 | 2 | Dale Walters |  | None |  |  |
| **X.802** | Information technology – Lower layers security model | 1995 | C | 17 | 2 | Nick Pope |  | ISO/IEC TR 13594 |  |  |
| **X.803** | Information technology – Open Systems Interconnection – Upper layers security model | 1994 | C | 17 | 2 | W. Ford |  | ISO/IEC 10745 |  |  |
| **X.805** | Security architecture for systems providing end-to-end communications | 2003 | I | 17 | 2 | Zachary Zeltsan |  | None |  |  |
| **X.810** | Information technology – Open Systems Interconnection – Security frameworks for open systems: Overview | 1995 | C | 17 | 2 | M. Roe |  | ISO/IEC 10181-1 |  |  |
| **X.811** | Information technology – Open System Interconnection – Security frameworks for open systems: Authentication framework | 1995 | C | 17 | 2 | Michael Harrop |  | ISO/IEC 10181-2 |  |  |
| **X.812** | Information technology – Open Systems Interconnection – Security frameworks for open systems: Access control framework | 1995 | C | 17 | 2 | D. Gomberg |  | ISO/IEC 10181-3 |  |  |
| **X.813** | Information technology – Open Systems Interconnection – Security frameworks for open systems: Non-repudiation framework | 1996 | C | 17 | 2 | Y. Saito |  | ISO/IEC 10181-4 |  |  |
| **X.814** | Information technology – Open Systems Interconnection – Security frameworks for open systems: Confidentiality framework | 1995 | C | 17 | 2 | A. Nakassis |  | ISO/IEC 10181-5 |  |  |
| **X.815** | Information technology – Open Systems Interconnection – Security frameworks for open systems: Integrity framework | 1995 | C | 17 | 2 | A. Nakassis |  | ISO/IEC 10181-6 |  |  |
| **X.816** | Information technology – Open Systems Interconnection – Security Frameworks for open systems: Security audit and alarms framework | 1995 | C | 17 | 2 | Michael Harrop |  | ISO/IEC 10181-7 |  |  |
| **X.830** | Information technology – Open Systems Interconnection – Generic upper layers security: Overview, models and Notation | 1995 | C | 17 | 2 | Warwick Ford |  | ISO/IEC 11586-1 |  |  |
| **X.831** | Information technology – Open Systems Interconnection – Generic upper layers security: Security Exchange Service Element (SESE) service definition | 1995 | C | 17 | 2 | E. Soueid |  | ISO/IEC 11586-2 |  |  |
| **X.832** | Information technology – Open Systems Interconnection – Generic upper layers security: Security Exchange Service Element (SESE) protocol specification | 1995 | C | 17 | 2 | E. Soueid |  | ISO/IEC 11586-3 |  |  |
| **X.833** | Information technology – Open Systems Interconnection – Generic upper layers security: Protecting transfer syntax specification | 1995 | C | 17 | 2 | Warwick Ford |  | ISO/IEC 11586-4 |  |  |
| **X.834** | Information technology – Open Systems Interconnection – Generic upper layers security: Security Exchange Service Element (SESE) Protocol Implementation Conformance Statement (PICS) proforma | 1996 | C | 17 | 2 | Nick Pope |  | ISO/IEC 11586-5 |  |  |
| **X.835** | Information technology – Open Systems Interconnection – Generic upper layers security: Protecting transfer syntax Protocol Implementation Conformance Statement (PICS) proforma | 1996 | C | 17 | 2 | Nick Pope |  | ISO/IEC 11586-6 |  |  |
| **X.841** | Information technology – Security techniques – Security Information Objects for access control | 2000 | C | 17 | 2 | Elmer Mc Dowell, Douglas Rahikka |  | ISO/IEC 15816 |  |  |
| **X.842** | Information technology – Security techniques – Guidelines for the use of Trusted Third Party services | 2000 | C | 17 | 2 | Maynard Hanscom, Douglas Rahikka |  | ISO/IEC TR 14516 |  |  |
| **X.843** | Information technology – Security techniques – Specification of TTP services to support the application of digital signatures | 2000 | C | 17 | 2 | Bertold Krueger, Douglas Rahikka |  | ISO/IEC 15945 |  |  |

OSI APPLICATIONS  
(X.850 – X.899)

Commitment, Concurrency and Recovery  
(X.850 – X.859)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.851** | Information technology – Open Systems Interconnection –Service definition for the commitment, concurrency and recovery service element | 1997 | C | 17 | 11 | Peter Furniss |  | ISO/IEC 9804 |  |  |
| **X.852** | Information technology – Open Systems Interconnection – Protocol for the Commitment, Concurrency and Recovery service element: Protocol specification | 1997 | C | 17 | 11 | Peter Furniss |  | ISO/IEC 9805-1 |  |  |
| **X.853** | Information technology – Open Systems Interconnection – Protocol for the Commitment, Concurrency and Recovery service element: Protocol Implementation Conformance Statement (PICS) proforma | 1995 | C | 17 | 11 | Peter Furniss |  | ISO/IEC 9805-2 |  |  |

Transaction Processing  
(X.860 – X.879)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | ISO/IEC | DATE | |
| **X.860** | Open Systems Interconnection - Distributed Transaction Processing: Model | 1997 | T | 17 | 11 | R. Banks |  | ISO/IEC 10026-1 |  |  |
| **X.861** | Open Systems Interconnection - Distributed Transaction Processing: Service definition | 1997 | T | 17 | 11 | R. Banks |  | ISO/IEC 10026-2 |  |  |
| **X.862** | Open Systems Interconnection - Distributed Transaction Processing: Protocol specification | 1997 | T | 17 | 11 | Peter Furniss |  | ISO/IEC 10026-3 |  |  |
| **X.863** | Information technology – Open Systems Interconnection – Distributed Transaction Processing: Protocol Implementation Conformance Statement (PICS) proforma | 1994 | C | 17 | 11 | Hervé Barbot |  | ISO/IEC 10026-4 |  |  |

Remote Operations  
(X.880 – X.889)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g. ISO/IEC | DATE | |
| **X.880** | Information technology – Remote Operations: Concepts, model and Notation | 1994 Cor.1 (1995) | C C | 17 | 11 | Nilo Mitra |  | ISO/IEC 13712-1 Cor.1 |  |  |
| **X.880 Amd.1** | Built-in operations | 1995 | C | 17 | 11 | Nilo Mitra |  | ISO/IEC 13712-1/Amd.1 |  |  |
| **X.881** | Information technology – Remote Operations: OSI realizations – Remote Operations Service Element (ROSE) service definition | 1994 | C | 17 | 11 | Nilo Mitra |  | ISO/IEC 13712-2 |  |  |
| **X.881 Amd.1** | Mapping to A-UNIT-DATA and built-in operations | 1995 | C | 17 | 11 | Nilo Mitra |  | ISO/IEC 13712-2/Amd.1 |  |  |
| **X.882** | Information technology – Remote Operations: OSI realizations – Remote Operations Service Element (ROSE) protocol specification | 1994 Cor.1 (1995) | C C | 17 | 11 | Nilo Mitra |  | ISO/IEC 13712-3 Cor.1 |  |  |
| **X.882 Amd.1** | Mapping to A-UNIT-DATA and built-in operations | 1995 | C | 17 | 11 | Nilo Mitra |  | ISO/IEC 13712-3/Amd.1 |  |  |

Generic applications of ASN.1  
(X.890 – X.899)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.891** | Information technology – Generic applications of ASN.1 – Fast Infoset | 2005 Cor.1 (2006)\* Cor.1 (2011) | C C C | 17 | 11 | Paul Thorpe  Jean-Paul Lemaire |  | ISO/IEC 24824-1 Cor.1 |  |  |
| **X.892** | Information technology – Generic applications of ASN.1 – Fast Web Services | 2005 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 24824-2 |  |  |
| **X.893** | Information technology – Generic applications of ASN.1 – Fast Web Services security and Fast Infoset security | 2007 | C | 17 | 11 | Paul Thorpe |  | ISO/IEC 24824-3 |  |  |
| **X.894 (X.cms)** | Information technology – Generic applications of ASN.1 – Cryptographic Message Syntax |  |  | 17 | 11 | Jean-Paul Lemaire | COM 17 – TD 2558 Rev.1 | ISO/IEC 24824-4 | 2017-03 to be discontinued | C |
| **X.CMS-prof** | Cryptographic Message Syntax (CMS) Profile |  |  | 17 | 11 | Jean-Paul Lemaire |  | None | 2017-10 | I |

\* Not published, merged with X.891 prior to publication

OPEN DISTRIBUTED PROCESSING  
(X.900 – X.999)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g. ISO/IEC | DATE | |
| **X.901** | Information technology – Open Distributed Processing – Reference Model: Overview | 1997 | C | 17 | 11 | F. Caneschi, Arve Meisingset |  | ISO/IEC 10746-1 |  |  |
| **X.902** | Information technology – Open Distributed Processing – Reference Model: Foundations | 2009 | C | 17 | 11 | Jean-Bernard Stefani, Arve Meisingset |  | ISO/IEC 10746-2 |  |  |
| **X.903** | Information technology – Open Distributed Processing – Reference Model: Architecture | 2009 | C | 17 | 11 | A. Herbert, Arve Meisingset |  | ISO/IEC 10746-3 |  |  |
| **X.904** | Information technology – Open Distributed Processing – Reference Model: Architectural Semantics | 1997 | C | 17 | 11 | Richard Sinnot, Arve Meisingset |  | ISO/IEC 10746-4 |  |  |
| **X.904 Amd.1** | Computational formalization | 2000 | C | 17 | 11 | Richard Sinnot |  | ISO/IEC 10746-4/Amd.1 |  |  |
| **X.906** | Information technology – Open distributed processing – Use of UML for ODP system specifications | 2014 | C | 17 | 11 | Peter Linington |  | ISO/IEC 19793 |  |  |
| **X.910** | Information technology – Open Distributed Processing – Naming framework | 1998 | C | 17 | 11 | A. Tanaka |  | ISO/IEC 14771 |  |  |
| **X.911** | Information technology – Open Distributed Processing –Reference Model – Enterprise language | 2014 | C | 17 | 11 | Peter Linington |  | ISO/IEC 15414 |  |  |
| **X.920** | Information technology – Open Distributed Processing – Interface Definition Language | 1997 | C | 17 | 11 | Laurent Leboucher |  | ISO/IEC 14750 |  |  |
| **X.930** | Information technology – Open Distributed Processing – Interface references and binding | 1998 | C | 17 | 11 | Lea Kutvonen |  | ISO/IEC 14753 |  |  |
| **X.931** | Information technology – Open Distributed Processing – Protocol support for computational interactions | 1999 | C | 17 | 11 | Peter Furniss |  | ISO/IEC 14752 |  |  |
| **X.950** | Information technology – Open Distributed Processing – Trading Function: Specification | 1997 | C | 17 | 11 | Tom Rutt |  | ISO/IEC 13235-1 |  |  |
| **X.952** | Information technology – Open Distributed Processing – Trading Function: Provision of trading function using OSI Directory service | 1997 Cor.1 (2005) | C C | 17 | 11 | Tom Rutt |  | ISO/IEC 13235-3 Cor.1 |  |  |
| **X.960** | Information technology – Open Distributed Processing – Type repository function | 1999 | C | 17 | 11 | Kerry Raymond |  | ISO/IEC 14769 |  |  |

INFORMATION AND NETWORK SECURITY  
(X.1000 – X.1099)

General security aspects

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
|  |  |  |  |  |  |  |  |  |  |  |

**Network security  
(X.1030 – X.1050)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1031** | Roles of end users and telecommunications networks within security architecture | 2007 | I | 17 | 2 | Nikolai Etroukhin |  | None |  |  |
| **X.1032** | Architecture of external interrelations for a telecommunication IP-based network security system | 2010 | I | 17 | 2 | Nikolaï Etroukhin, Sergey Lukovskiy |  | None |  |  |
| **X.1033** | Guidelines on security of the individual information service for operators | 2016 | I | 17 | 2 | Junjie Xia, Bo Yu |  | None |  |  |
| **X.1034** | Guideline on extensible authentication protocol based authentication and key management in a data communication network | 2011 | I | 17 | 2 | Heung Ryong Oh, Heung Youl Youm |  | None |  |  |
| **X.1035** | Password-authenticated key exchange (PAK) protocol | 2007 | I | 17 | 2 | Alec Brusilovsky, Igor Faynberg, Sarvar Patel, Zachary Zeltsan |  | None |  |  |
| **X.1036** | Framework for creation, storage, distribution and enforcement of policies for network security | 2007 | I | 17 | 2 | Jong-Hyun Kim |  | None |  |  |
| **X.1037** | IPv6 technical security guidelines | 2013 | I | 17 | 2 | Masashi Eto, Koji Nakao |  | None |  |  |
| **X.1038** | Security requirements and reference architecture for software-defined networking | 2016 | I | 17 | 2 | Zhiyuan Hu, Zhaoji Lin, Ye Tao |  | None |  |  |
| **X.1039** | Technical security measures for implementation of ITU-T X.805 security dimensions | 2016 | I | 17 | 2 | Heung Youl Youm |  | None |  |  |
| **X.hsn** | Heterarchic architecture for secure distributed service networks |  |  | 17 | 2 |  |  | None | Work discontinued |  |
| **X.salcm** | Security reference architecture for lifecycle management of e-commerce business data |  |  | 17 | 2 | Kepeng Li, Zhaoji Lin, Junjie Xia, Feng Zhang | COM 17 – TD 2951 Rev.1 | None | 2017-10 | I |
| **X.vissec** | Security of digital broadcasting and multimedia video information systems (VIS Security) |  |  | 17 | 2 |  |  | None | Work discontinued |  |
| **X.voLTEsec-1** | Security framework for voice-over-long-term-evolution (VoLTE) network operation |  |  | 17 | 2 | Haitao Du, Zhaoji Lin, Feng Zhang, Liang Wei | COM 17 – TD 2603 | None | 2018-04 | I |

**Security management  
(X.1050- X.1069)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | |  | TEXT | e.g., ISO/IEC | DATE | |
| **X.1051** | Information technology – Security techniques – Information security management guidelines for telecommunications organizations based on ISO/IEC 27002 | 2016 | C | 17 | 3 | Kyeong Hee Oh, Wataru Senga |  | ISO/IEC 27011 |  |  |
| **X.1052** | Information security management framework | 2011 | I | 17 | 3 | Minshi Chen, Lijun Liu, Zhi Zhou |  | None |  |  |
| **X.1054** | Information technology – Security techniques – Governance of information security | 2012 | I | 17 | 3 | Jungduk Kim |  | ISO/IEC 27014 |  |  |
| **X.1055** | Risk management and risk profile guidelines for telecommunications organizations | 2008 | I | 17 | 3 | Ted Humphreys |  | (base: ISO/IEC 27005) |  |  |
| **X.1056** | Security incident management guidelines for telecommunications organizations | 2008 | I | 17 | 3 | Jungduk Kim |  | (base: ISO/IEC TR18044) |  |  |
| **X.1057** | Asset management guidelines in telecommunication organizations | 2011 | I | 17 | 3 | Taein Jung, Jintae Lee |  | None |  |  |
| **X.1058**  **(X.gpim)** | Information technology – Security techniques – Code of practice for personally identifiable information protection |  |  | 17 | 3 | Soonjoung Byun, Lijun Liu, Heung Youl Youm | COM 17 – TD 2934 Rev.1 | ISO/IEC 29151 | 2017-03  In TAP | C |
| **X.sgsm** | Information security management guidelines for small and medium telecommunication organizations |  |  | 17 | 3 | Chang Oh (Peter) Kim, Wataru Senga | COM 17 – TD 2989 | None | 2017-10 | I |

**Telebiometrics  
(X.1080 – X.1099)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1080.0 (X.pbact)** | Access control for telebiometrics data protection |  |  | 17 | 9 | Eric Andersen, Michele Peiry | COM 17 – TD 2899 Rev.3 | None | 2017-03 In TAP | I |
| **X.1080.1** | e-Health and world-wide telemedicines – Generic telecommunication protocol | 2011 | I | 17 | 9 | Jean-Paul Lemaire |  | None |  |  |
| **X.1080.1rev** | e-Health and world-wide telemedicines – Generic telecommunication protocol |  |  | 17 | 9 | Eric Andersen, Michele Peiry | COM 17 – TD 2953 Rev.1 | None | 2017-03 (2nd edition) | I |
| **X.1081** | The telebiometric multimodal model - A framework for the specification of security and safety aspects of telebiometrics | 2011 | I | 17 | 9 | Paul Gerome |  | None |  |  |
| **X.1082** | Telebiometrics related to human physiology | 2007 | T | 17 | 9 | Paul Gerome |  | Adaptation of IEC 80000-14 |  |  |
| **X.1082 Amd.1** | Object identifier assignments under the Telebiometrics arc | 2009 | T | 17 | 9 | John Larmouth |  | None |  |  |
| **X.1082 Amd.2** | Enhancement to support ISO/IEC 80000-series | 2010 | T | 17 | 9 | John Larmouth, Jean-Paul Lemaire |  | None |  |  |
| **X.1083** | Information technology – Biometrics – BioAPI interworking protocol | 2007 | C | 17 | 9 | Jean-Paul Lemaire |  | ISO/IEC 24708 |  |  |
| **X.1084** | Telebiometrics system mechanism – Part 1: General biometric authentication protocol and system model profiles for telecommunications systems | 2008 | I | 17 | 9 | Yoshiaki Isobe, Yong Nyuo Shin |  | None |  |  |
| **X.1085** | Information Technology – Security Techniques –Telebiometric authentication framework using biometric hardware security module | 2016 | C | 17 | 9 | Myung Geun Chun, Jason Kim, Yong Nyuo Shin |  | ISO/IEC 17922 |  |  |
| **X.1086** | Telebiometric protection procedure – Part 1: A guideline to technical and managerial countermeasures for biometric data security | 2008 | I | 17 | 9 | Hakil Kim, Jason Kim |  | None |  |  |
| **X.1086 Amd.1** | Multibiometric protection procedures | 2012 | I | 17 | 9 | Inja Jun, Hakil Kim |  | None |  |  |
| **X.1087** | A guideline to technical and operational countermeasures for telebiometric applications using mobile devices | 2016 | I | 17 | 9 | Jason Kim, Nak Hyun Kim, Yong Nyuo Shin |  | None |  |  |
| **X.1088** | Telebiometrics digital key framework (TDK) – A framework for biometric digital key generation and protection | 2008 | I | 17 | 9 | Yun-Su Chung, Jason Kim, Hyung-Woo Lee, Ki-Young Moon |  | None |  |  |
| **X.1089** | Telebiometrics authentication infrastructure (TAI) | 2008 | I | 17 | 9 | Jiwei Wei |  | None |  |  |
| **X.1090** | Authentication framework with one-time telebiometric template | 2011 | I | 17 | 9 | Hyung-Woo Lee, Yongjin Lee |  | None |  |  |
| **X.1091** | A guideline for evaluating telebiometric template protection techniques | 2012 | I | 17 | 9 | Yoshiaki Isobe, Tetsushi Ohki |  | None |  |  |
| **X.1092** | Integrated framework for telebiometric data protection in e-health and telemedicines | 2013 | I | 17 | 9 | Jae-Sung Kim, Yong Nyuo Shin, Seung Jai Yi |  | None |  |  |
| **X.tab** | Telebiometric authentication using bio-signals |  |  | 17 | 9 | Jason Kim, Sam Lee | COM 17 – TD 2965 | None | 2019-04 | I |
| **X.th2** | Telebiometrics related to physics |  |  | 17 | 9 | Michele Peiry | COM 17 – TD 2954 Rev.1 | Related to ISO 80003-2 | 2017-10 | I |
| **X.th3** | Telebiometrics related to chemistry |  |  | 17 | 9 | Michele Peiry | COM 17 – TD 3056 | Related to ISO 80003-3 | 2017-10 | I |
| **X.th4** | Telebiometrics related to biology |  |  | 17 | 9 | Paul Gerome | COM 17 – TD 2505 | Related to IEC 80003-4 | 2017-10 | I |
| **X.th5** | Telebiometrics related to culturology |  |  | 17 | 9 | Paul Gerome | COM 17 – TD 2501 Rev.1 | Related to IEC 80003-5 | 2017-10 | I |
| **X.th6** | Telebiometrics related to psychology |  |  | 17 | 9 | Paul Gerome | COM 17 – TD 2493 Rev.1 | Related to IEC 80003-6 | 2017-10 | I |
| **X.th13** | Holosphere to biosphere secure data acquisition and telecommunication protocol |  |  | 17 | 9 | Olivier Vuillemin | COM 17 – TD 2494 | Related to IEC 80003-13 | 2017-10 | I |

\* Original Amd.2 was not published but merged with X.1081 Amd.1 prior to publication and original Amd.3 has been renumbered Amd.2 prior to publication

**SECURE APPLICATIONS AND SERVICES  
(X.1100 – X.1199)**

**Multicast security  
(X.1100 – X.1109)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1101** | Security requirements and framework for multicast communication | 2010 | I | 17 | 6 | Miyeon Yoon, Heung Youl Youm |  | None |  |  |

**Home network security  
(X.1110 – X.1119)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1111** | Framework of security technologies for home network | 2007 | I | 17 | 6 | Heung Youl Youm, Heung Ryong Oh |  | None |  |  |
| **X.1112** | Device certificate profile for the home network | 2007 | I | 17 | 6 | Jong-Hyun Baek, Dong-Young Yoo |  | None |  |  |
| X.1113 | Guideline on user authentication mechanisms for home network services | 2007 | I | 17 | 6 | Hyung-Kyu Lee |  | None |  |  |
| **X.1114** | Authorization framework for home networks | 2008 | I | 17 | 6 | Geon Woo. Kim, Jeff Ji |  | None |  |  |

**Mobile security  
(X.1120 – X.1139)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1121** | Framework of security technologies for mobile end-to-end data communications | 2004 | I | 17 | 6 | Tadashi Kaji, Heung-Youl Youm |  | None |  |  |
| **X.1122** | Guideline for implementing secure mobile systems based on PKI | 2004 | I | 17 | 6 | Tadashi Kaji, Heung-Youl Youm |  | None |  |  |
| X.1123 | Differentiated security service for secure mobile end-to-end data communication | 2007 | I | 17 | 6 | Jianyong Chen, Bo Wu |  | None |  |  |
| **X.1124** | Authentication architecture for mobile end-to-end data communication | 2007 | I | 17 | 6 | Zhibin Zheng, Jiwei Wei |  | None |  |  |
| **X.1125** | Correlative Reacting System in mobile data communication | 2008 | I | 17 | 6 | Shuling Liu, Jiwei Wei |  | None |  |  |
| **X.1126 (X.msec-6)** | Security aspects of smartphones |  |  | 17 | 6 | Hongwei Luo, Yutaka Miyake |  | None | Re-vectored as X Suppl.19 |  |
| **X.msec-7** | Guidelines on the management of infected terminals in mobile networks |  |  | 17 | 6 | Chen Zhang, Xuetao Du, Lou Tao |  | None | Work discontinued |  |
| **X.msec-8** | Secure application distribution framework for communication devices |  |  | 17 | 6 | Yutaka Miyake, Mijoo Kim, Heung Youl Youm |  | None | Re-vectored as X.Suppl.24 |  |
| **X.msec-9** | Functional security requirements and architecture for mobile phone anti-theft measures |  |  | 17 | 6 | Junjie Xia, Heung Youl Youm | COM 17 – TD 2931 | None | 2017-03 | I |
| **X.1126 (X.msec-11)** | Guidelines on mitigating the negative effects of infected terminals in mobile networks |  |  | 17 | 6 | Liu Lijun, Chen Zhang | COM 17 – TD 2946 | None | 2017-03 In TAP | I |

**Web security  
(X.1140 – X.1149)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1141** | Security Assertion Markup Language (SAML 2.0) | 2006 | T | 17 | 7 | Abbie Barbir |  | OASIS SAML 2.0 |  |  |
| **X.1141 Amd.1** | Errata |  |  | 17 | 7 | Abbie Barbir |  | OASIS SAML 2.0 errata | Work discontinued |  |
| **X.1142** | eXtensible Access Control Markup Language (XACML 2.0) | 2006 | T | 17 | 7 | Abbie Barbir |  | OASIS XACML 2.0 |  |  |
| **X.1142 Amd.1** | Errata |  |  | 17 | 7 | Abbie Barbir |  | OASIS XACML 2.0 errata | Work discontinued |  |
| **X.1143** | Security architecture for message security in mobile web services | 2007 | I | 17 | 7 | Jae Seung Lee |  | None |  |  |
| **X.1144** | eXtensible Access Control Markup Language (XACML) 3.0 | 2013 | T | 17 | 7 | Abbie Barbir, Jae Hoon Nah |  | OASIS XACML 3.0 |  |  |
| **X.fdip** | Framework of de-identification processing service for telecommunication service providers |  |  | 17 | 7 | Hyungjin Lim, Lijun Liu, Jongyoul Park, Heung-Youl Youm | COM 17 – TD 2997 Rev.1 | None | 2019-09 | I |
| **X.srfb** | Security requirements and framework for Big Data analytics in mobile Internet services |  |  | 17 | 7 | Feng Gao, Nan Jiang, Jongyoul Park  Junjie Xia | COM 17 – TD 2960 Rev.2 | None | 2018-09 | I |
| **X.websec-5** | Security architecture and operations for web mashup services |  |  | 17 | 7 | Jaehoon Nah, H.R. Oh |  | None | Re-vectored as as X.Suppl.21 |  |
| **X.websec-6** | Security framework and requirements for open capabilities of telecommunication services |  |  | 17 | 7 | Gao Feng, Jae Hoon Nah, Junjie Xia | COM 17 – TD 2948 | None | 2017-03 | I |
| **X.websec-7** | Reference monitor for online analytics services |  |  | 17 | 7 | Hyungjin Lim, Jongyoul Park, Junjie Xia | COM 17 – TD 2918 | None | 2017-10 | I |
| **X.websec-8** | Security protection guidelines for value-added services for telecommunication operator |  |  | 17 | 7 | Zhaoji Lin, Lijun Liu, Jae Hoon Nah | COM 17 – TD 2940 | None | 2017-10 | I |

**Security protocols  
(X.1150 – X.1159)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1151** | Guideline on secure password-based authentication protocol with key exchange | 2007 | I | 17 | 7 | Heung Youl Youm |  | None |  |  |
| **X.1152** | Secure end-to-end data communication techniques using trusted third party services | 2008 | I | 17 | 7 | Tadashi Kaji |  | None |  |  |
| **X.1153** | Management framework of a one time password-based authentication service | 2011 | I | 17 | 7 | Keun-ok Kim, Hyung-jin Lim, Heewoon Shim |  | None |  |  |
| **X.1154** | General framework of combined authentication on multiple identity service provider environments | 2013 | I | 17 | 7 | Tadashi Kaji, Hyung-jin Lim |  | None |  |  |
| **X.1155** | Guideline on local linkable anonymous authentication for electronic services | 2015 | I | 17 | 7 | Sokjoon Lee |  | None |  |  |
| **X.1156** | Non-repudiation framework based on a one time password | 2013 | I | 17 | 7 | Keun-ok Kim, Hee-won Shim |  | None |  |  |
| **X.1157** | Technical capabilities of fraud detection and response for services with high assurance level requirements | 2015 | I | 17 | 7 | Tae Kyun Kim, Hyung-Jin Lim |  | None |  |  |
| **X.1158** | Multi-factor authentication mechanisms using a mobile device | 2014 | I | 17 | 7 | Keun Ok Kim, Seong-Hyeon Song, Heung-Youl Youm |  | None |  |  |
| **X.1159** | Delegated non-repudiation architecture based on ITU-T X.813 | 2014 |  | 17 | 7 | Keun-ok Kim, Hee-won Shim, Seong-Hyeon Song |  | None |  |  |

**Peer-to-peer security  
(X.1160 – X.1169)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| X.1161 | Framework for secure peer-to-peer communications | 2008 | I | 17 | 7 | Yutaka Miyake |  | None |  |  |
| X.1162 | Security architecture and operations for peer-to-peer networks | 2008 | I | 17 | 7 | Jae Hoon Nah |  | None |  |  |
| X.1164 | Use of service providers’ user authentication infrastructure to implement public key infrastructure for peer-to-peer networks | 2012 | I | 17 | 7 | Ayumu Kubota, Yutaka Miyake |  | None |  |  |
| X.1163 | Security requirements and mechanisms of peer-to-peer-based telecommunication networks | 2015 | I | 17 | 7 | Lijun Liu, Jae Hoon Nah |  | None |  |  |

**Networked ID security  
(X.1170 – X.1179)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1171** | Threats and requirements for protection of personally identifiable information in applications using tag-based identification | 2009 | I | 17 | 6 | Dooho Choi |  | None |  |  |

**IPTV security  
(X.1180 – X.1199)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1191** | Functional requirements and architecture for IPTV security aspects | 2009 | I | 17 | 6 | Shinji Ishii, hut Nguyen, Xie Wei, Heung Youl Youm |  | None |  |  |
| **X.1192** | Functional requirements and mechanisms for the secure transcoding of IPTV | 2011 | I | 17 | 6 | Jae Hoon Nah |  | None |  |  |
| **X.1193** | Key management framework for secure internet protocol television (IPTV) services | 2011 | I | 17 | 6 | Heung Youl Youm |  | None |  |  |
| **X.1194** | Algorithm selection scheme for service and content protection descrambling | 2012 | I | 17 | 6 | Jongyoul Park |  | None |  |  |
| **X.1195** | Service and content protection interoperability scheme | 2011 | I | 17 | 6 | Dong Wang, Kisong Yoon |  | None |  |  |
| **X.1196** | Framework for the downloadable service and content protection system in the mobile Internet Protocol Television (IPTV) environment | 2012 | I | 17 | 6 | Heung Youl Youm |  | None |  |  |
| **X.1197** | Guidelines on criteria for selecting cryptographic algorithms for IPTV service and content protection | 2012 | I | 17 | 6 | Seokung Yoon, Heung Youl Youm |  | None |  |  |
| **X.1198** | Virtual machine-based security platform for renewable IPTV service and content protection) | 2013 | I | 17 | 6 | Yong Ho Hwang, Jongyoul Park |  | None |  |  |

**CYBERSPACE SECURITY  
(X.1200 – X.1299)**

**Cybersecurity  
(X.1200 – X.1229)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1205** | Overview of cybersecurity | 2008 | I | 17 | 4 | Abbie Barbir |  | None |  |  |
| **X.1206** | A vendor-neutral framework for automatic notification of security related information and dissemination of updates | 2008 | I | 17 | 4 | Hiroshi Takechi, Craig Schultz |  | None |  |  |
| **X.1207** | Guidelines for telecommunication service providers for addressing the risk of spyware and potentially unwanted software | 2008 | I | 17 | 4 | Meng Chow Kang |  | None |  |  |
| **X.1208** | A cybersecurity indicator of risk to enhance confidence and security in the use of telecommunication/information and communication technologies | 2014 | I | 17 | 4 | Heung Youl Youm |  | None |  |  |
| **X.1209** | Capabilities and their context scenarios for cybersecurity information sharing and exchange | 2010 | I | 17 | 4 | Il-Ahn Cheong, Tetsuya Kageyama, Miho Naganuma |  | None |  |  |
| **X.1210** | Overview of source-based security troubleshooting mechanisms for Internet protocol-based networks | 2014 | I | 17 | 4 | Youki Kadobayashi, Huirong Tian, Heung Youl Youm |  | None |  |  |
| **X.1211** | Techniques for preventing web-based attacks | 2014 | I | 17 | 4 | Wei Xie, Heung Youl Youm |  | None |  |  |
| **X.bots** | Centralized framework for botnet detection and response |  |  | 17 | 4 | Chaetae Im, Hyun Cheol Jeong, Mi Joo Kim, Joo Hyung Oh, Yoo Jae Won |  | None | Work discontinued |  |
| **X.1212 (X.cogent)** | Design considerations for improved end-user perception of trustworthiness indicators |  |  | 17 | 4 | Youki Kadobayashi, Daisuke Miyamoto | COM 17 – TD 2917 | None | 2016-09 In TAP | I |
| **X.metric** | Metrics for evaluating threat and resilience in cyberspace |  |  | 17 | 4 | Youki Kadobayashi, Daisuke Miyamoto | COM 17 – C 475 | None | 2017-10 | I |
| **X.samtn** | Security assessment techniques in telecommunication/ICT networks |  |  | 17 | 4 | Byoung-Moon Chin, Vibha Tomar | COM 17 – TD 2914 Rev.1 | None | 2017-10 | I |
| **X.sbb** | Security capability requirements for countering smartphone-based botnets |  |  | 17 | 4 | Jae Hoon Nah, Junjie Xia, Heung-Youl Youm, Bo Yu | COM 17 – TD 2952 Rev.2 | None | 2017-03 | I |
| **X.sip-cyber** | Security guidelines for countering cyber attacks in SIP-based services |  |  | 17 | 4 | Hyun Cheol Jeong, Hyung-Woo Lee, Anthony Rutkowski |  | None | Work discontinued |  |

**Countering spam  
(X.1230 – X.1249)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1231** | Technical strategies for countering spam | 2008 | I | 17 | 5 | Hongwei Luo, Jianyong Chen |  | None |  |  |
| **X.1240** | Technologies involved in countering email spam | 2008 | I | 17 | 5 | So-Young Park, Yuxiao. Li |  | None |  |  |
| **X.1241** | Technical framework for countering email spam | 2008 | I | 17 | 5 | Kun Yang, Jianyong Chen |  | None |  |  |
| **X.1242** | Short message service (SMS) spam filtering system based on user-specified rules | 2009 | I | 17 | 5 | Hongwei Luo, Lijun Liu |  | None |  |  |
| **X.1243** | Interactive gateway system for countering spam | 2010  Cor.1 (2014) | I I | 17 | 5 | Xu Chen, Hua Jiang, Zhimeng Teng  Min Huang |  | None |  |  |
| **X.1244** | Overall aspects of countering spam in IP-based multimedia applications | 2008 | I | 17 | 5 | Shin Gak Kang, Mi Joo Kim |  | None |  |  |
| **X.1245** | Framework for countering spam in IP-based multimedia applications | 2010 | I | 17 | 5 | So-Young Park, Seokung Yoon |  | None |  |  |
| **X.1246** | Technologies involved in countering voice spam in telecommunication organizations | 2015 | I | 17 | 5 | Xuetao Du, Tao Lou |  | None |  |  |
| **X.1247** | Technical framework for countering mobile messaging spam | 2016 | I | 17 | 5 | Feng Gao, Laifu Wang, Junjie Xia, Annan Zhu |  | None |  |  |
| **X.cspim** | Technical framework for countering mobile messaging spam (SPIM) |  |  | 17 | 5 | Huamin Jin, Zhaoji Lin, Shuai Wang, Junjie Xia | COM 17 – TD 2915 | None | 2017-03 | I |
| **X.tfcma** | Technical framework for countering mobile in-application advertising spam |  |  | 17 | 5 | Hongwei Luo, Laifu Wang | COM 17 – TD 2924 Rev.1 | None | 2017-10 | I |

**Identity management (IdM)  
(X.1250 – X.1279)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1250** | Baseline capabilities for enhanced global identity management and interoperability | 2009 | I | 17 | 10 | Tony Rutkowski, Jiwei Wei |  | None |  |  |
| **X.1251** | A framework for user control of digital identity | 2009 | I | 17 | 10 | Sangrae Cho, Seung-Hun Jin, Michael McIntosh |  | None |  |  |
| **X.1252** | Baseline identity management terms and definitions | 2010 | I | 17 | 10 | Mike Harrop, Michael Hird |  | None |  |  |
| **X.1253** | Security guidelines for identity management systems | 2011 | I | 17 | 10 | Sangrae Cho |  | None |  |  |
| **X.1254** | Entity authentication assurance framework | 2012 | I | 17 | 10 | Richard Brackney  new editors: Sylvan Tran, Heung-Youl Youm | COM 17 – TD 2950 | related to ISO/IEC 29115 | New revision: 2017-10 | I |
| **X.1255** | Framework for discovery of identity management information | 2013 | I | 17 | 10 | Robert Kahn |  | None |  |  |
| **X.1256** | Guidelines and framework for sharing network authentication results with service applications | 2016 | I | 17 | 10 | Lijun Liu, Min Zuo |  | None |  |  |
| **X.1257** | Identity and access management taxonomy | 2016 | I | 17 | 10 | Radu Marian |  | None |  |  |
| **X.1258** | Enhanced entity authentication based on aggregated attributes | 2016 | I | 17 | 10 | Tae Kyung Kim, Jae Hoon Nah, Junjie Xia |  | None |  |  |
| **X.1275** | Guidelines on protection of personally identifiable information in the application of RFID technology | 2010 | I | 17 | 10 | Hyangjin Lee, Seokung Yoon |  | None |  |  |
| **X.atag** | Attribute aggregation framework |  |  | 17 | 10 | Abbie Barbir, David W Chadwick |  | None | Work discontinued |  |
| **X.eaasd** | Framework of enhanced authentication in telebiometric environments using anti-spoofing detection mechanisms |  |  | 17 | 10 | Kepeng Li, Hongwei Luo | COM 17 – TD 2955 Rev.1 | None | 2018-09 | I |
| **X.giim** | Mechanisms to support interoperability across different IdM services |  |  | 17 | 10 | Xia Junjie |  | None | Work discontinued |  |
| **X.idmcc** | Requirements of IdM in cloud computing |  |  | 17 | 10 | Gao Feng, Xia Junjie, Jing Wu |  | None | Work discontinued |  |
| **X.idmts** | Framework for the interoperable exchange of trusted services |  |  | 17 | 10 | Alexey Domrachev, Viktor Kutukov, Patrick Mwesigwa, Elena Petina, Maurizio Talamo |  | None | Work discontinued |  |
| **X.mob-id** | Baseline capabilities and mechanisms of identity management for mobile applications and environment |  |  | 17 | 10 | Sangrae Cho |  | None | Work discontinued |  |
| **X.oitf** | Open identity trust framework |  |  | 17 | 10 | David Turner |  | None | Work discontinued |  |
| **X.scim-use** | Application of system for cross identity management (SCIM) in telecommunication environments |  |  | 17 | 10 | Radu Marian |  | None | Work discontinued |  |
| **X.te** | Trust elevation protocol |  |  | 17 | 10 | Abbie Barbir, Heung-Youl Youm | COM 17 – TD 2498 | OASIS authentication step-up protocol and metadata framework | 2017-10 | T |

**SECURE APPLICATIONS AND SERVICES  
(X.1300 – X.1399)**

**Emergency communications**

**(X.1300 – X.1309)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1303** | Common alerting protocol (CAP 1.1) | 2007 | T | 17 | 4 | Abbie Barbir |  | OASIS CAP v1.1 |  |  |
| **X.1303 bis** | Common alerting protocol (CAP 1.2) | 2014 | T | 17 | 4 | Youki Kadobayashi, Jean-Paul Lemaire |  | OASIS CAP v1.2 |  |  |

Ubiquitous sensor network security  
(X.1310 – X.1339)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1311** | Information technology – Security framework for ubiquitous sensor networks | 2011 Cor 1 (2014) | C C | 17 | 6 | Eunyoung Choi, Heung Youl Youm |  | ISO/IEC 29180 Cor.1 |  |  |
| **X.1312** | Ubiquitous sensor network middleware security guidelines | 2011 | I | 17 | 6 | Mi Joo Kim, Miyeon Yoon |  | None |  |  |
| **X.1313** | Security requirements for wireless sensor network routing | 2012 | I | 17 | 6 | Mijoo Kim |  | None |  |  |
| **X.1314** | Security requirements and framework of ubiquitous networking | 2014  Cor.1 (2015) | I  I | 17 | 6 | Junjie Xia, Shilin You Zhaoji Lin |  | None |  |  |

**PKI related Recommendations  
(X.1340 – X.1349)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1341** | Certified mail transport and certified post office protocols | 2015 | I | 17 | 11 | David Keller, Laura Prin |  | None |  |  |

IoT security  
(X.1360 – X.1369)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1362 (X.iotsec-1)** | Simple encryption procedure for Internet of things (IoT) environments |  |  | 17 | 6 | Shugo Mikami | COM 17 – TD 2964 Rev.1 | None | 2017-03 In TAP | I |
| **X.iotsec-2** | Security framework for Internet of things |  |  | 17 | 6 | Xia Junjie, Heung-Youl Youm | COM 17 – TD 2932 Rev.1 | None | 2018-02 | I |

Intelligent transportation system (ITS) security  
(X.1370 – X.1379)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **1373 (X.itssec-1)** | Secure software update capability for intelligent transportation system communication devices |  |  | 17 | 6 | Masashi Eto, Koji Nakao | COM 17 – TD 2988 Rev.1 | None | 2017-03 In TAP | I |
| **X.itssec-2** | Security guidelines for V2X communication systems |  |  | 17 | 6 | Sang-Woo Lee, Jae-Hoon Nah | COM 17 – TD 2977 | None | 2017-10 | I |

**Web security  
(X.1380 – X.1389)**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.hakm** | Guidelines on hybrid authentication and key management mechanisms in client-server model |  |  | 17 | 7 | Jihoon Cho, Kyu Young Choi, Jung Yeon Hwang | COM 17 – TD 3000 | None | 2018-10 | I |

OTHER

Software-defined networking (SDN) security

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.sdnsec-1** | Security services using the Software-defined networking |  |  | 17 | 6 | Hyoungshick Kim, JungSoo Park | COM 17 – TD 2971 | None | 2017-10 | I |

**Smart grid security**

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.sgsec-1** | Security functional architecture for smart grid services using telecommunication networks |  |  | 17 | 6 | Mijoo Kim, Jeong-Jun Suh, Mi Yeon Yoon |  | None | Re-vectored as X.Suppl.26 |  |
| **X.sgsec-2** | Security guidelines for home area network (HAN) devices in smart grid systems |  |  | 17 | 6 | Soyoung Jung, Gunhee Lee, Haeryong Park | COM 17 – TD 2966 | None | 2017-10 | I |
| **X.sgsec-3** | Security guidelines for smart metering service in smart grids |  |  | 17 | 6 | Gunhee Lee | COM 17 – TD 2984 Rev.1 | None | 2018-08 | I |

PKI

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | | |
| **X.pki-em** | Information Technology - Public-Key Infrastructure: Establishment and maintenance |  |  | 17 | 11 | Erik Andersen | COM 17 – TD 2198 | tbd | 2017-10 | I |
| **X.pki-prof** | Information Technology - Public-Key Infrastructure: Profile |  |  | 17 | 11 | Erik Andersen | COM 17 – TD 2199 | tbd | 2017-10 | I |

**CYBERSECURITY INFORMATION EXCHANGE  
(X.1500 – X.1599)**

Overview of Cybersecurity  
(X.1500 – X.1519)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | | |
| **X.1500** | Overview of cybersecurity information exchange | 2011 | I | 17 | 4 | Inette Furey, Youki Kadobayashi, Robert Martin, Angela McKay, Damir Rajnovic, Gavin Reid, Anthony Rutkowski, Gregg Schudel |  | None |  |  |
| **X.1500 Amd.10** | Overview of cybersecurity information exchange – Amendment 10 – Revised structured cybersecurity information exchange techniques | 2016 | I | 17 | 4 | Youki Kadobayashi |  | None |  |  |
| **X.1500 Amd.11** | Overview of cybersecurity information exchange – Amendment 11 – Revised structured cybersecurity information exchange techniques |  |  | 17 | 4 | Youki Kadobayashi |  | None | 2017-03 | I |
| **X.1500.1** | Procedures for the registration of arcs under the object identifier arc for cybersecurity information exchange | 2012 | I | 17 | 4 | Olivier Dubuisson, Anthony Rutkowski |  | None |  |  |
| **X.csmc** | An iterative model for cybersecurity operation using CYBEX techniques |  |  | 17 | 4 | Inette Furey, Youki Kadobayashi, Robert Martin, Kathleen M. Moriarty, Takeshi Takahashi |  | None | Work discontinued |  |

Vulnerability/state exchange  
(X.1520 – X.1539)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT\* | e.g., ISO/IEC | DATE | |
| **X.1520** | Common vulnerabilities and exposures | 2014 | I | 17 | 4 | Robert Martin |  | None |  |  |
| **X.1521** | Common vulnerability scoring system 3.0 | 2016 | I | 17 | 4 | Damir Rajnovic |  | None |  |  |
| **X.1524** | Common weakness enumeration | 2012 | I | 17 | 4 | Robert Martin |  | None |  |  |
| **X.1525** | Common weakness scoring system | 2015 | I | 17 | 4 | Robert Martin |  | None |  |  |
| **X.1526** | Language for the open definition of vulnerabilities and for the assessment of a system state | 2014 | I | 17 | 4 | Robert Martin |  | None |  |  |
| **X.1528** | Common platform enumeration | 2012 | I | 17 | 4 | Robert Martin |  | None |  |  |
| **X.1528.1** | Common platform enumeration naming | 2012 | I | 17 | 4 | Robert Martin |  | None |  |  |
| **X.1528.2** | Common platform enumeration name matching | 2012 | I | 17 | 4 | Robert Martin |  | None |  |  |
| **X.1528.3** | Common platform enumeration dictionary | 2012 | I | 17 | 4 | Robert Martin |  | None |  |  |
| **X.1528.4** | Common platform enumeration applicability language | 2012 | I | 17 | 4 | Robert Martin |  | None |  |  |
| **X.cce** | Common configuration enumeration |  |  | 17 | 4 | Robert Martin |  | None | Work discontinued |  |
| **X.cvrf** | Common vulnerability reporting format |  |  | 17 | 4 | Mike Schiffman, Gregg Schudel |  | None | Work discontinued |  |

Event/incident/heuristics exchange  
(X.1540 – X.1549)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1541** | Incident object description exchange format | 2012 | I | 17 | 4 | Kathleen Moriarty |  | None |  |  |
| **X.1542** | Session information message exchange format | 2016 | I | 17 | 4 | Ik-Kyun Kim, Jong-Hyun Kim |  | None |  |  |
| **X.1544** | Common attack pattern enumeration and classification | 2013 | I | 17 | 4 | Robert Martin |  | None |  |  |
| **X.1546** | Malware attribute enumeration and classification | 2014 | I | 17 | 4 | Robert Martin |  | None |  |  |
| **X.cee** | Common event expression |  |  | 17 | 4 | Robert Martin |  | None | Work discontinued |  |
| **X.cee.1** | CEE overview |  |  | 17 | 4 | Robert Martin |  | None | Work discontinued |  |
| **X.cee.2** | CEE profile |  |  | 17 | 4 | Robert Martin |  | None | Work discontinued |  |
| **X.cee.3** | CEE common log syntax (CLS) |  |  | 17 | 4 | Robert Martin |  | None | Work discontinued |  |
| **X.cee.4** | CEE common log transport (CLT) requirements |  |  | 17 | 4 | Robert Martin |  | None | Work discontinued |  |
| **X.cee.5** | CEE log transport (CLT) requirements |  |  | 17 | 4 | Robert Martin |  | None | Work discontinued |  |

Exchange of policies  
(X.1550 – X.1559)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1550 (X.nessa)** | Access control models for incidents exchange networks |  |  | 17 | 4 | Alexey Koshka | COM 17 – TD 2916 | None | 2017-03 In TAP | I |

Heuristics and information request  
(X.1560 – X.1569)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g, ISO/IEC | DATE | |
|  |  |  |  |  |  |  |  |  |  |  |

Identification and discovery  
(X.1570 – X.1579)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1570** | Discovery mechanisms in the exchange of cybersecurity information | 2011 | I | 17 | 4 | Youki Kadobayashi, Takeshi Takahashi |  | None |  |  |

Assured exchange  
(X.1580 – X.1589)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1580** | Real-time inter-network defence | 2012 | I | 17 | 4 | Kathleen Moriarty |  | None |  |  |
| **X.1581** | Transport of real-time inter-network defence messages | 2012 | I | 17 | 4 | Kathleen Moriarty |  | None |  |  |
| **X.1582** | Transport protocols supporting cybersecurity information exchange | 2014 | I | 17 | 4 | Youki Kadobayashi, Damir Rajnovic |  | None |  |  |
| **X.cybex-beep** | Use of BEEP for cybersecurity information exchange |  |  | 17 | 4 | Youki Kadobayashi | COM 17-TD 0280 | None | Work discontinued |  |

**CLOUD COMPUTING SECURITY  
(X.1600 – X.1699)**

Overview of cloud computing security  
(X.1600-X.1601)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1601** | Security framework for cloud computing | 2015 | I | 17 | 8 | Nan Meng |  | None |  |  |

Cloud computing security requirements, security capabilities  
(X.1602-X.1619)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1602** | Security requirements for software as a service application environments | 2016 | I | 17 | 8 | Zhaoji Lin, Ruoni Wang, Peng Zhao |  | None |  |  |

Cloud computing security trust models, security architectures/functions  
(X.1620-X.1629)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
|  |  |  |  |  |  |  |  |  |  |  |

Cloud computing security controls  
(X.1630-X.1639)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1631** | Information technology – Security techniques – Code of practice for information security controls based on ISO/IEC 27002 for cloud services | 2015 | C | 17 | 8 | Koji Nakao, Huirong Tian |  | ISO/IEC 27017 |  |  |

Cloud computing security best practices and guidelines  
(X.1640-X.1659)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.1641** | Guidelines for cloud service customer data security | 2016 | I | 17 | 8 | Wei Liang, Nan Meng |  | None |  |  |
| **X.1642** | Guidelines for the operational security of cloud computing | 2016 | I | 17 | 8 | Ming Feng, Zhaoji Lin, Jun Shen, Huirong Tian, Laifu Wang |  | None |  |  |
| **X.dsms** | Data security requirements for the monitoring service of cloud computing |  |  | 17 | 8 | Zhiyuan Hu, Min Shu, Ye Tao, Ni Zhang | COM 17 – TD 2920 Rev.1 | None | 2017-10 | I |
| **X.GSBDaaS** | Guidelines on security of Big Data as a Service |  |  | 17 | 8 | Mark McFadden, Nan Meng, Chen Zhang | COM 17 – TD 2974 Rev.1 | None | Q4-2018 | I |
| **X.SRCaaS** | Security requirements for Communication as a Service application environments |  |  | 17 | 8 | Xuetao Du, Nan Meng, Ye Tao, Chen Zhang | COM 17 – TD 2976 Rev.1 | None | 2018-11 | I |
| **X.SRIaaS** | Security requirements of public infrastructure as a service (IaaS) in cloud computing |  |  | 17 | 8 | Huamin Jin, Laifu Wang, Mengxi Wang, Shuai Wang | COM 17 – TD 2956 | None | 2018-09 | I |
| **X.SRNaaS** | Security requirements of Network as a Service (NaaS) in cloud computing |  |  | 17 | 8 | Zhiyuan Hu, Ye Tao, Chen Zhang, Ni Zhang |  | None | Q4-2018 | I |

Cloud computing security implementation  
(X.1660-X.1669)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
|  |  |  |  |  |  |  |  |  |  |  |

Cloud computing incident management, disaster recovery, security assessment and audit  
(X.1670-X.1679)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
|  |  |  |  |  |  |  |  |  |  |  |

Other cloud computing security  
(X.1680-X.1699)

| RECOMMENDATION | | CURRENT | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | TEXT | e.g., ISO/IEC | DATE | |
| **X.fsspvn** | Framework of the secure service platform for virtual network |  |  | 17 | 8 | Min Huang, Jun Shen, Huirong Tian, Yuchen Wang |  | None | Work discontinued |  |

**SUPPLEMENTS TO X-SERIES RECOMMENDATIONS**

| RECOMMENDATION | | CURRENT | | | SG | Q | EDITOR | LATEST | EQUIVALENT | TARGET | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | TITLE | PUBLICATION | | | TEXT | e.g., ISO/IEC | DATE | |
| **X Suppl.1** | ITU-T X.135: Supplement related to some test results from specific national and international portions | 1997 | I | 13 | | 20? | Garry Couch |  | None |  |  |
| **X Suppl.2** | ITU-T X.800-X.849 series: Supplement on security baseline for network operators | 2007 | I | 17 | | 2 | Arkadiy Kremer |  | None |  |  |
| **X Suppl.3** | ITU-T X.800-X.849 series: Supplement on guidelines for implementing system and network security | 2008 | I | 17 | | 2 | Uma Chandrashekhar |  | None |  |  |
| **X Suppl.4** | ITU-T X.290 series: Supplement on generic approach to interoperability testing | 2008 | I | 11 | | 11 | Dieter Hogrefe |  | None |  |  |
| **X Suppl.5** | ITU-T X.290 series: Supplement on interoperability testing framework and methodology | 2008 | I | 11 | | 11 | Sunwong Kang |  | None |  |  |
| **X Suppl.6** | ITU-T X.1240 series: Supplement on countering spam and associated threats | 2009 | I | 17 | | 5 | James G. Ennis |  | None |  |  |
| **X Suppl.7** | ITU-T X.1250 series: Supplement on overview of identity management in the context of cybersecurity | 2009 | I | 17 | | 10 | James G. Ennis |  | None |  |  |
| **X Suppl.8** | ITU-T X.1205: Supplement on best practices against botnet threats | 2010 | I | 17 | | 4 | Koji Nakao, Heung Youl Youm |  | None |  |  |
| **X Suppl.9** | ITU-T X.1205: Guidelines for reducing malware in ICT networks | 2011 | I | 17 | | 4 | Mijoo Kim, Heung Youl Youm |  | None |  |  |
| **X Suppl.10** | ITU-T X.1205: Supplement on usability of network traceback | 2014 | I | 17 | | 4 | Youki Kadobayashi, Huirong Tian, Heung Youl Youm |  | None |  |  |
| **X Suppl.11** | ITU-T X.1245: Supplement on framework based on real-time blocking lists for countering VoIP spam | 2011 | I | 17 | | 5 | Seokung Yoon |  | None |  |  |
| **X Suppl.12** | ITU-T X.1240: Overall aspects of countering mobile messaging spam | 2012 | I | 17 | | 5 | Min Huang, Junjie Xia, Linlin Zhang |  | None |  |  |
| **X Suppl.13** | ITU-T X.1051: Supplement on information security management users' guide for Recommendation ITU-T X.1051 | 2012 | I | 17 | | 3 | Wataru Senga |  | None |  |  |
| **X.sup13-rev** | ITU-T X.1051: Supplement on information security management users' guide for Recommendation ITU-T X.1051 |  |  | 17 | | 3 | Kyeong Hee Oh, Wataru Senga | COM 17 – C 614 | None | 2017-10 | I |
| **X Suppl.14** | ITU-T X.1243: Supplement on a practical reference model for countering email spam using botnet information | 2012 | I | 17 | | 5 | Yoo Jae Won, Hongbin Zhang, Bei Zhao |  | None |  |  |
| **X Suppl.15** | ITU-T X.800-X.849 series – Supplement on guidance for creating national IP-based public network security centre for developing countries | 2012 | I | 17 | | 2 | Dmitry Kostrov |  | None |  |  |
| **X Suppl.16** | ITU-T X.800-X.849 series – Supplement on architectural systems for security controls for preventing fraudulent activities in public carrier networks | 2012 | I | 17 | | 2 | Roman Khokhlov |  | None |  |  |
| **X Suppl.17** | ITU-T X.1143 – Supplement on threats and security objectives for enhanced web-based telecommunication service | 2012 | I | 17 | | 7 | Jaehoon Nah, DaeHee Seo |  | None |  |  |
| **X Suppl.18** | ITU-T X.1205 – Supplement on guidelines for abnormal traffic detection and control on IP-based telecommunication networks | 2013 | I | 17 | | 4 | Xu Chen, Shen He, Lijun Liu, Lanfang Ren, Zhiguo Zhan, Min Zuo |  | None |  |  |
| **X Suppl.19** | ITU-T X.1120 series – Supplement on security aspects of smartphones | 2013 | I | 17 | | 6 | Hongwei Luo, Yutaka Miyake |  | None |  |  |
| **X Suppl.20** | ITU-T X.1205 – Supplement on framework of security information sharing negotiation | 2013 | I | 17 | | 4 | Gae-il An, Jong Hyun Kim, Kathleen Moriarty |  | None |  |  |
| **X Suppl.21** | ITU-T X.1143 – Supplement on security framework for web mashup services | 2014 | I | 17 | | 7 | Jae Hoon Nah, Heung-Ryong Oh |  | None |  |  |
| **X Suppl.22** | ITU-T X.1144 – Supplement on enhancements and new features in XACML 3.0 | 2014 | I | 17 | | 7 | Abbie Barbir, Jae Hoon Nah |  | None |  |  |
| **X Suppl.23** | ITU-T X.1037 – Supplement on security management guideline for implementation of IPv6 environment in telecommunications organizations | 2014 | I | 17 | | 2 | Masashi Eto, Koji Nakao |  | None |  |  |
| **X Suppl.24** | ITU-T X.1120-X.1139 series – Supplement on a secure application distribution framework for communication devices | 2014 | I | 17 | | 6 | Mijoo Kim, Yutaka Miyake, Heung Youl Youm |  | None |  |  |
| **X.Suppl.25** | ITU-T X.1231 – Supplement on guidance of countering spam for mobile phone developers | 2016 | I | 17 | | 5 | Tae-Jin Lee, Jeong-Jun Suh |  | None |  |  |
| **X.Suppl.26** | ITU-T X.1111 – Supplement on security functional architecture for smart grid services using telecommunication networks | 2016 | I | 17 | | 6 | Mijoo Kim, Jeong-Jun Suh, Mi Yeon Yoon |  | None |  |  |
| **X.Suppl.27** | ITU-T X.1054 – Supplement on Best practice for implementation of Rec. ITU-T X.1054 | ISO /IEC 27014 on governance of information security – Case of Burkina Faso | 2016 | I | 17 | | 3 | Richard Anago, Anfana Traore |  | None |  |  |
| **X.Suppl.28** | ITU-T X.1245 – Supplement on Technical measures and mechanisms on countering spoofed calls in the terminating network of voice over long term evolution | 2016 | I | 17 | | 5 | Bo Yu, Jie Yuan, Chen Zhang |  | None |  |  |
| **X.ctss** | ITU-T X.1231 – Supplement to Technical framework for countering telephone service scam |  |  | 17 | | 5 | Feng Gao, Nan Jiang, Junjie Xia, Chen Zhang, Yanbin Zhang | COM 17 – TD TD 2926 Rev.1 | None | 2018-09 | I |
| **X.gcspi** | ITU-T X.1242 – Supplement on guideline for countermeasures against short message service (SMS) smishing attack |  |  | 17 | | 5 | Changjin Lee, Lijun Liu, Jae Hoon Nah, Deawoo Park, Heung-Youl Youm | COM 17 – TD 2930 Rev.1 | None | 2017-03 | I |
| **X.sgmvno** | ITU-T X.805 – Supplement on security guideline for mobile virtual network operator (MVNO) |  |  | 17 | | 2 | Dongxin Liu, Hongwei Luo, Laifu Wang | COM 17 – TD 2983 | None | 2017-10 | I |
| **X.oid-iot** | ITU-T X.660 – Supplement on guidelines for using object identifiers for the Internet of things |  |  | 17 | | 11 | Zhaoji Lin, Dongya Wu | COM 17 – TD 2986 Rev.1 | None | 2017-03 | I |
| **X.sup1056** | ITU-T X.1056 – Supplement on related Recommendations, International Standards and documents for security incident management |  |  | 17 | | 3 | Junduk Kim, Miho Naganuma, Damir Rajnovic |  | None | Work discontinued |  |
| **X.sup-gpim** | ITU-T X.gpim – Supplement on code of practice for personally identifiable information protection for telecommunications organizations |  |  | 17 | | 3 | Lijun Liu, Jae-Nam Ko, Heung Youl Youm, Seung-Woo Yu | COM 17 – TD 2936 Rev.1 | None | 2018 | I |
| **X.sup-grm** | ITU-T X.1055 – Supplement on Risk management implementation guidance on the assets of telecommunication organizations accessible by global IP-based networks |  |  | 17 | | 3 | Yunbo Feng, Bo Yu, Chen Zhang | COM 17 – TD 2949 Rev.1 | None | 2018-03 | I |
| **X.1255sup** | ITU-T X.1255 – Supplement on proposed conceptual models based on ITU-T X.1255 frameworks |  |  | 17 | | 10 | Abbie Barbir |  | None | Work discontinued |  |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_