
**Information technology — Data
communications — X.25 Packet Layer
Protocol for Data Terminal Equipment**

*Technologies de l'information — Communication de données —
Protocole X.25 de couche paquet pour terminal de données*

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CONTENTS

	Page
Foreword	vi
1 Scope	1
2 Normative references	1
2.1 Identical Recommendations International Standards	1
2.2 Paired Recommendations International Standards equivalent in technical content.....	2
2.3 Additional references	2
3 General considerations	2
3.1 Compatibility with versions of Recommendation X.25	3
3.2 Environments.....	5
3.3 Differences in DTE/DTE and DTE/DCE operation	5
3.4 Operation over circuit-switched connections	6
3.5 Provision of the OSI Network Service.....	7
3.6 External Packet Layer interactions.....	7
3.7 Logical channels	7
3.8 Packet Layer entity.....	8
3.9 Packet types	9
3.10 Procedures for initialization.....	9
4 Procedures for restart.....	9
4.1 Originating a restart request	10
4.2 Receiving a restart indication.....	12
4.3 Restart collision	12
4.4 Restart confirmation.....	12
4.5 Determining “DTE” or “DCE” characteristics.....	12
5 Procedures for Virtual Call setup and clearing	13
5.1 Ready state	13
5.2 Procedures for Virtual Call setup.....	13
5.3 Rejecting a call.....	15
5.4 Aborting a call request	15
5.5 Procedures for Virtual Call clearing	15
6 Procedures for data and interrupt transfer.....	16
6.1 States for data and interrupt transfer	17
6.2 Maximum User Data Field length of DATA packets	17
6.3 Delivery Confirmation bit.....	17
6.4 More Data mark	18
6.5 Complete packet sequence	18
6.6 Qualifier bit.....	18
6.7 Fragmentation and reassembly of messages.....	19
6.8 Procedures for interrupt	20
6.9 Transit delay of DATA packets.....	21
7 Procedures for flow control	21
7.1 Flow control.....	22
7.2 Throughput characteristics and throughput classes.....	25

8 Procedures for reset	25
8.1 Originating a reset request	27
8.2 Receiving a reset indication	27
8.3 Reset collision.....	27
8.4 Reset confirmation	27
9 Effects of clear, reset, and restart procedures on the transfer of packets	27
10 Effects of Layers 1 and 2 on the Packet Layer.....	28
11 Error handling	28
11.1 The DIAGNOSTIC packet.....	29
11.2 Nonreceipt of window-rotation information	29
11.3 Receipt of erroneous DATA packets	30
12 Packet formats.....	31
12.1 General.....	31
12.2 Call setup and call clearing packets	33
12.3 DATA and interrupt packets	42
12.4 Flow control packets.....	44
12.5 Reset packets	45
12.6 Restart packets	47
12.7 DIAGNOSTIC packet.....	48
12.8 REJECT packet.....	49
12.9 Registration packets	50
13 Procedures for optional user facilities	52
13.1 On-line Facility Registration.....	52
13.2 Extended and Super Extended Packet Sequence Numbering	59
13.3 D-bit Modification	60
13.4 Packet Retransmission	60
13.5 Incoming Calls Barred	61
13.6 Outgoing Calls Barred	61
13.7 One-way Logical Channel Outgoing.....	61
13.8 One-way Logical Channel Incoming	61
13.9 Nonstandard Default Packet Sizes	61
13.10 Nonstandard Default Window Sizes	61
13.11 Default Throughput Classes Assignment.....	62
13.12 Flow Control Parameter Negotiation	62
13.13 Throughput Class Negotiation Facilities.....	63
13.14 Closed User Group related facilities	64
13.15 Bilateral Closed User Group related facilities.....	68
13.16 Fast Select.....	69
13.17 Fast Select Acceptance	70
13.18 Reverse Charging.....	70
13.19 Reverse Charging Acceptance	70
13.20 Local Charging Prevention	70
13.21 Network User Identification (NUI) related facilities.....	71
13.22 Charging Information.....	71
13.23 ROA related facilities	73
13.24 Hunt Group.....	73
13.25 Call Redirection and Call Deflection related facilities.....	73
13.26 Called Line Address Modified Notification.....	76
13.27 Transit Delay Selection and Indication.....	76
13.28 Alternative Addressing Related Facilities.....	76
13.29 TOA/NPI address subscription	78
13.30 Reference Number	78
14 Procedures for optional ITU-T specified DTE facilities.....	80
14.1 Calling Address Extension.....	80
14.2 Called Address Extension	80
14.3 Minimum Throughput Class Negotiation	80
14.4 End-to-End Transit Delay Negotiation	81

14.5 Priority	81
14.6 Protection.....	81
14.7 Expedited Data Negotiation.....	81
15 Format for Facility Field in call setup/clearing packets	82
15.1 General.....	82
15.2 Coding of the Facility Field for optional user facilities	83
15.3 Coding of the Facility Field for ITU-T specified DTE facilities	89
16 Format for Registration Field in registration packets	92
16.1 General.....	92
16.2 Coding of the Registration Field for registration-facilities	93
17 Diagnostic codes	95
18 Timers and retransmission counts	101
19 State diagrams.....	105
20 State tables.....	111
21 Conformance	120
21.1 Static conformance.....	120
21.2 Protocol Implementation Conformance Statement	120
21.3 Dynamic conformance	120
 Annexes	
A Private networks.....	123
B PICS Proforma	131
C Differences between various editions of ISO/IEC 8208	159
D Abbreviations.....	169

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 8208 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

This fourth edition cancels and replaces the third edition (ISO/IEC 8208:1995), which has been technically revised.

Annexes A and B form a normative part of this International Standard. Annexes C and D are for information only.

Information technology — Data communications — X.25 Packet Layer Protocol for Data Terminal Equipment

1 Scope

This International Standard specifies the procedures, formats and facilities at the Packet Layer for Data Terminal Equipment (DTE) operating in conformance with ITU-T Recommendation X.25. Both Virtual Call and Permanent Virtual Circuit modes of operation are covered.

The Packet Layer protocol specified herein can be used in both Open Systems Interconnection (OSI) and non-OSI environments. When used within the context of OSI, the Packet Layer protocol is encompassed in the Network Layer of the OSI Reference Model, ITU-T Rec. X.200 | ISO/IEC 7498-1.

This International Standard covers DTE operation at the Packet Layer when accessing a public or private packet-switched network conforming to ITU-T Recommendation X.25 by means of a dedicated path or a circuit-switched connection. It also covers the additional Packet Layer procedures necessary for two DTEs conforming to this International Standard to communicate directly (i.e., without an intervening packet-switched network) over a dedicated path, a circuit-switched connection, or a local area network (LAN).

This International Standard also covers private networks that use ITU-T Recommendation X.25 to connect to packet-switched public data networks and that may also offer an X.25 interface to a DTE (see annex A).

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented. Such a statement is called a Protocol Implementation Conformance Statement (PICS), as defined in ITU-T Rec. X.290 | ISO/IEC 9646-1. Annex B provides the PICS proforma in accordance with the relevant guidance given in ITU-T Rec. X.296 | ISO/IEC 9646-7.

The first edition of this International Standard was based on the 1984 CCITT Red Book text of Recommendation X.25. It also contained the necessary provisions for compatibility with the earlier 1980 CCITT Yellow Book text of Recommendation X.25. The second edition was based on the 1988 CCITT Blue Book text of Recommendation X.25. The third edition is based upon the 1993 version of X.25. This fourth edition is based on the 1996 version of X.25. Retained within this fourth edition are the necessary provisions for compatibility with the 1993, 1988, 1984 and 1980 versions of X.25. The differences between various editions of this International Standard are summarized in annex C.

It should be noted that this International Standard and ITU-T Recommendation X.25 as it applies to DTEs are different in scope. This International Standard contains the specifications that ITU-T Recommendation X.25 places on DTEs. In addition, this International Standard contains added specifications to facilitate interworking between DTEs and to cover direct DTE-to-DTE operation. This broader scope has to be recognized in the application of this International Standard.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a register of currently valid ITU-T Recommendations.

2.1 Identical Recommendations | International Standards

ITU-T Recommendation X.200 (1994) | ISO/IEC 7498-1 : 1994, *Information technology — Open Systems Interconnection — Basic Reference Model: The Basic Model*

ITU-T Recommendation X.212 (1995) | ISO/IEC 8886 : 1996, *Information technology — Open Systems Interconnection — Data link service definition*

ITU-T Recommendation X.213 (1995) | ISO/IEC 8348 : 1996, *Information technology — Open Systems Interconnection — Network service definition*

ITU-T Recommendation X.263 (1998) | ISO/IEC TR 9577:1999, *Information technology — Protocol identification in the network layer*

ITU-T Recommendation X.273 (1994) | ISO/IEC 11577 : 1995, *Information technology — Open Systems Interconnection — Network layer security protocol*

CCITT Recommendation X.612 (1992) | ISO/IEC 9574 : 1992, *Information technology — Provision of the OSI connection-mode network service by packet-mode terminal equipment connected to an integrated services digital network (ISDN)*

CCITT Recommendation X.613 (1992) | ISO/IEC 10588 : 1993, *Information technology — Use of X.25 Packet Layer Protocol in conjunction with X.21/X.21bis to provide the OSI connection-mode Network Service*

CCITT Recommendation X.614 (1992) | ISO/IEC 10732 : 1993, *Information technology — Use of X.25 Packet Layer Protocol to provide the OSI connection-mode Network Service over the telephone network*

2.2 Paired Recommendations | International Standards equivalent in technical content

- CCITT Recommendation T.50 (1992), *International Reference Alphabet (IRA)*

ISO/IEC 646 : 1991, *Information technology — ISO 7-bit coded character set for information interchange*

- ITU-T Recommendation X.223 (1993), *Use of X.25 to provide the OSI connection-mode network service for ITU-T applications*

ISO/IEC 8878 : 1992, *Information technology — Telecommunications and information exchange between systems — Use of X.25 to provide the OSI Connection-mode Network Service*

- ITU-T Recommendation X.290 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications — General concepts*

ISO/IEC 9646-1 : 1994, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts*

- ITU-T Recommendation X.296 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications — Implementation Conformance Statements*

ISO/IEC 9646-7 : 1995, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 7: Implementation Conformance Statements*

2.3 Additional references

CCITT Recommendation D.12 (1988), *Measurement unit for charging by volume in the international packet-switched data communication service*

ITU-T Recommendation X.2 (1996), *International data transmission services and optional user facilities in public data networks and ISDNs*

ITU-T Recommendation X.25 (1996), *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*

ITU-T Recommendation X.29 (1997), *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*

ITU-T Recommendation X.31 (1995), *Support of packet mode terminal equipment by an ISDN*

ITU-T Recommendation X.32 (1996), *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*

ITU-T Recommendation X.75 (1996), *Packet-switched signalling system between public networks providing data transmission services*

ITU-T Recommendation X.96 (1993), *Call progress signals in public data networks*

ITU-T Recommendation X.121 (1996), *International numbering plan for public data networks*

ITU-T Recommendation X.301 (1996), *Description of the general arrangements for call control within a subnetwork and between subnetworks for the provision of data transmission services*

CCITT Recommendation X.610 (1992), *Provision and support of the OSI connection-mode network service*

ISO/IEC 7776 : 1995, *Information technology — Telecommunications and information exchange between systems — High-level data link control procedures — Description of the X.25 LAPB-compatible DTE data link procedures*

ISO/IEC 8881 : 1989, *Information processing systems — Data communications — Use of the X.25 packet level protocol in local area networks*

ISO/IEC TR 10029 : 1989, *Information technology — Telecommunications and information exchange between systems — Operation of an X.25 interworking unit*

ISO/IEC 10039 : 1991, *Information technology — Open Systems Interconnection — Local area networks — Medium Access Control (MAC) service definition*

ISO/IEC TR 13532 : 1995, *Information technology — Telecommunications and information exchange between systems — Protocol combinations to provide and support the OSI network service*

RFC 1166, *Internet numbers*, July 1990.