INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.223

Amendment 1
(10/96)

SERIES X: DATA NETWORKS AND OPEN SYSTEM COMMUNICATION

Open System Interconnection – Connection-mode protocol specifications

---

Use of X.25 to provide the OSI connection-mode network service for ITU-T applications

Amendment 1: Transit delay and other refinements

ITU-T Recommendation X.223 – Amendment 1

(Previously CCITT Recommendation)

ITU-T X-SERIES RECOMMENDATIONS

DATA NETWORKS AND OPEN SYSTEM COMMUNICATION

PUBLIC DATA NETWORKS	X.1–X.199
Services and facilities	X.1–X.19
Interfaces	X.20–X.49
Transmission, signalling and switching	X.50–X.89
Network aspects	X.90–X.149
Maintenance	X.150–X.179
Administrative arrangements	X.180–X.199
OPEN SYSTEM INTERCONNECTION	X.200–X.299
Model and notation	X.200–X.209
Service definitions	X.210–X.219
Connection-mode protocol specifications	**X.220–X.229**
Connectionless-mode protocol specifications	X.230–X.239
PICS proformas	X.240–X.259
Protocol Identification	X.260–X.269
Security Protocols	X.270–X.279
Layer Managed Objects	X.280–X.289
Conformance testing	X.290–X.299
INTERWORKING BETWEEN NETWORKS	X.300–X.399
General	X.300–X.349
Satellite data transmission systems	X.350–X.399
MESSAGE HANDLING SYSTEMS	X.400–X.499
DIRECTORY	X.500–X.599
OSI NETWORKING AND SYSTEM ASPECTS	X.600–X.699
Networking	X.600–X.629
Efficiency	X.630–X.649
Naming, Addressing and Registration	X.650–X.679
Abstract Syntax Notation One (ASN.1)	X.680–X.699
OSI MANAGEMENT	X.700–X.799
Systems Management framework and architecture	X.700–X.709
Management Communication Service and Protocol	X.710–X.719
Structure of Management Information	X.720–X.729
Management functions	X.730–X.799
SECURITY	X.800–X.849
OSI APPLICATIONS	X.850–X.899
Commitment, Concurrency and Recovery	X.850–X.859
Transaction processing	X.860–X.879
Remote operations	X.880–X.899
OPEN DISTRIBUTED PROCESSING	X.900–X.999

For further details, please refer to ITU-T List of Recommendations.

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (ITU). The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

Amendment 1 to ITU-T Recommendation X.223 was prepared by ITU-T Study Group 7 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 5th of October 1996.

NOTE

In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

CONTENTS

SUMMARY

Recommendation X.223 shows how to map the X.25 packet layer protocol to the network service defined in Recommendation X.213. This amendment provides enhanced processing requirements for transit delay while also editorially revising the text to bring it up to date.

USE OF X.25 TO PROVIDE THE OSI CONNECTION-MODE NETWORK SERVICE FOR ITU-T APPLICATIONS

AMENDMENT 1
Transit delay and other refinements

(Geneva, 1996)

1) Changes to References

On page 3 make the following changes to the Normative references clause.

Subclause 2.1

- *Add the following reference to appear first in this subclause:*

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

- *Change the year of publication for X.213 from* "1992" *to* "1995".

- *Change the year of publication for ISO/IEC 8348 from* "1993" *to* "1996".

- The reference to ISO/IEC 8348 can be left blank. The TSB should complete this information by the time of publication of X.223 or put a footnote to indicate it will be published shortly.

Subclause 2.2

- *Delete this subclause (since the one reference has been moved to 2.1)*.

Subclause 2.3

- *Renumber this subclause to be 2.2*.

- *Change the year of publication for X.25 from* "1993" *to* "1996".

- *Change the year of publication for ISO/IEC 8208 from* "1990" *to* "1995".

2) Changes to Abbreviations

No changes are needed.

3) Change to Overview

- *On page 7, subclause 5.1, second item a) on* "optional user facilities": *Change item 4 to read as follows:*

  Transit Delay Selection and Indication (facility used if operating in a packet-switched network environment).

4) Change to Table 2

- *Page 9, item in X.25/PLP column on* "Transit Delay Selection and Indication Facility": *Add a superscript* c) *at the end of this item (for a new footnote)*.
- *Page 9, item in X.25/PLP column on* "Fast Select Facility": *Change the superscript* c) *to* d).
- *Page 9, add a new note c) under the table to read as follows*:

  c) The Transit Delay Selection and Indication Facility shall be used only in a packet-switched network environment.
- *Page 9, change the existing identifier for the third Note from* c) *to* d).
- (The change approved to add "Basic" before the Throughput Class Negotiation Facility and the Minimum Throughput Negotiation Facility is no longer needed since it was included in the published text.)

5) Editorial Change to Use of the Address Field

- *Page 9, 6.2.2.1.1, item c): Add parenthesis around* "IDI" *to read* "(IDI)".

6) Change to Transit Delay Processing

- *Page 14, 6.2.5.2.1, item d), line 1: Change* "When the operational mode is DTE-to-DCE," *to* "When operating in a DTE/DCE environment".
- *Page 14, 6.2.5.2.1, item d), lines 4-5: Change this to read as follows*: "not constrained by this Recommendation); when operating in a DTE/DTE environment, the TDSAI Facility shall not be used."
- *Page 15, 6.2.5.2.2, paragraph 1, line 2: Change* "NIL" *to* "NL".

7) Editorial Change to Reset Service/Originator-Reason Codes Processing

No change is needed here since the item approved was included in the published text. (This was to delete a comma that resulted in an incorrect parsing of the combination of cause and diagnostic codes.)

8) Change to ISO/IEC 8878 and X.223 Differences

- *Page 35, Appendix V, item d), paragraph 2: Delete this paragraph*. (The difference identified here on the handling of transit delay in a DTE/DTE environment was resolved with the changes identified above.)

ITU-T RECOMMENDATIONS SERIES

Series A	Organization of the work of the ITU-T
Series B	Means of expression
Series C	General telecommunication statistics
Series D	General tariff principles
Series E	Telephone network and ISDN
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media
Series H	Transmission of non-telephone signals
Series I	Integrated services digital network
Series J	Transmission of sound-programme and television signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	Maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
Series N	Maintenance: international sound-programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminal equipments and protocols for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	**Data networks and open system communication**
Series Z	Programming languages