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ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.234

(07/94)

**DATA NETWORKS AND OPEN SYSTEM
COMMUNICATIONS**

**OPEN SYSTEMS INTERCONNECTION –
CONNECTIONLESS-MODE PROTOCOL
SPECIFICATIONS**

**INFORMATION TECHNOLOGY –
PROTOCOL FOR PROVIDING THE OSI
CONNECTIONLESS-MODE TRANSPORT
SERVICE**

ITU-T Recommendation X.234

(Previously "CCITT Recommendation")

Foreword

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. Some 179 member countries, 84 telecom operating entities, 145 scientific and industrial organizations and 38 international organizations participate in ITU-T which is the body which sets world telecommunications standards (Recommendations).

The approval of Recommendations by the Members of ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, 1993). In addition, the World Telecommunication Standardization Conference (WTSC), which meets every four years, approves Recommendations submitted to it and establishes the study programme for the following period.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC. The text of ITU-T Recommendation X.234 was approved on 1st July 1994. The identical text is also published as ISO/IEC International Standard 8602.

NOTE

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

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ITU-T X-SERIES RECOMMENDATIONS
DATA NETWORKS AND OPEN SYSTEM COMMUNICATIONS
(FEBRUARY 1994)

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Summary

This Recommendation | International Standard specifies:

- a) the procedures for the connectionless-mode transmission of data and protocol control information from one transport entity to one peer transport entity;
- b) the encoding of the transport protocol data units; and
- c) the functional requirements for implementations claiming conformance to this Recommendation.

Introduction

This Recommendation | International Standard is one of a set of Recommendations and International Standards produced to facilitate the interconnection of computer systems. The set of Recommendations and International Standards covers the services and protocols required to achieve such interconnection.

This Recommendation | International Standard is positioned with respect to other related Recommendations and International Standards by the layers defined in the Reference Model for Open Systems Interconnection (see ITU-T Rec. X.200 | ISO/IEC 7498-1). In particular, it is a protocol of the Transport Layer. It is most closely related to the transport service definition (see ITU-T Rec. X.214 | ISO/IEC 8072) and the network service definition (see CCITT Rec. X.213 | ISO/IEC 8348). The interrelationship between these Recommendations and International Standards is illustrated in Figure 1.

The structure of this Recommendation | International Standard is similar to the structure of ITU-T Rec. X.224 | ISO/IEC 8073 in order to facilitate cross reference between the two transport protocols.

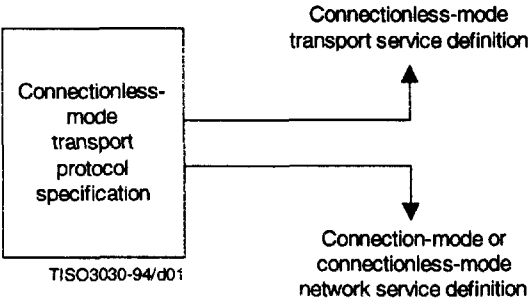


Figure 1 – Relationship between the connectionless-mode transport protocol and adjacent services

INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

**INFORMATION TECHNOLOGY –
PROTOCOL FOR PROVIDING THE OSI CONNECTIONLESS-MODE
TRANSPORT SERVICE****1 Scope**

This Recommendation | International Standard specifies

- a) procedures for the connectionless-mode transmission of data and protocol control information from one transport entity to one peer transport entity;
- b) the encoding of the transport-protocol-data-units used for the transmission of data and control information;
- c) procedures for the correct interpretation of transport protocol control information; and
- d) the functional requirements for implementations claiming conformance to this Recommendation | International Standard.

The procedures are defined in terms of

- a) the interactions among peer transport entities through the exchange of transport-protocol-data-units;
- b) the interactions between a transport entity and a transport service user through the exchange of transport service primitives; and
- c) the interaction between a transport entity and a network service provider through the exchange of network service primitives.

This Recommendation | International Standard specifies the connectionless-mode transport protocol and provides the PICS Proforma in compliance with the relevant requirements, and in accordance with the relevant guideline, given in CCITT Rec. X.291 | ISO/IEC 9646-2. The protocol for providing the connection-mode transport service is specified in ITU-T Rec. X.224 | ISO/IEC 8073.

2 Normative references

The following Recommendations and International Standards contain provisions, which through references in the text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list 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*.
- CCITT Recommendation X.213 (1992) | ISO/IEC 8348:1993, *Information technology – Network service definition for Open Systems Interconnection*
- ITU-T Recommendation X.214 (1993) | ISO/IEC 8072:1994, *Information technology – Open System Interconnection – Transport service definition*.

ISO/IEC 8602 : 1995 (E)**2.2 Paired Recommendations | International Standards equivalent in technical content**

- ITU-T Recommendation X.224 (1993), *Protocol for providing the OSI connection-mode transport service.*
ISO/IEC 8073:1992, Information technology – Telecommunications and information exchange between systems – Open Systems Interconnection – Protocol for providing the connection-mode transport service.
- ITU-T Recommendation X.264 (1993), *Transport protocol identification mechanism.*
ISO/IEC 11570:1992, Information technology – Telecommunications and information exchange between systems – Open Systems Interconnection – Transport protocol identification mechanism.
- CCITT Recommendation X.290 (1992), *OSI conformance testing methodology and framework for protocol Recommendations for CCITT applications – General Concepts.*
ISO/IEC 9646-1:1991, Information technology – Open Systems Interconnection – Conformance testing methodologies and framework – Part 1: General concepts.
- CCITT Recommendation X.291 (1992), *OSI conformance testing methodology and framework for protocol Recommendations for CCITT applications – Abstract test suite specification.*
ISO/IEC 9646-2:1991, Information technology – Open Systems Interconnection – Conformance testing methodologies and framework – Part 2: Abstract test suite specification.

SECTION 1 – GENERAL**3 Definitions**

For the purposes of this Recommendation | International Standard, the following definitions apply.

3.1 Reference Model definitions

This Recommendation | International Standard is based on the concepts developed in ITU-T Rec. X.200 | ISO/IEC 7498-1, and makes use of the following terms defined therein:

- a) Transport layer;
- b) transport service;
- c) transport-service-access-point;
- d) transport-service-access-point-address;
- e) transport-service-data-unit;
- f) network Layer;
- g) network service;
- h) network connection;
- i) network-service access-point;
- j) transport protocol;
- k) connectionless-mode transmission.

3.2 This Recommendation | International Standard uses the following terms defined in CCITT Rec. X.290 | ISO/IEC 9646-1:

- a) PICS Proforma;
- b) protocol implementation conformance statement (PICS).

3.3 Additional definitions

For the purposes of this Recommendation | International standard, the following definitions apply.