



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.637

(10/96)

SERIES X: DATA NETWORKS AND OPEN SYSTEM
COMMUNICATION

OSI networking and system aspects – Efficiency

**Basic connection-oriented common upper layer
requirements**

ITU-T Recommendation X.637

(Previously CCITT Recommendation)



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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).

ITU-T Recommendation X.637 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.

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SUMMARY

This Recommendation provides the profiles of the common upper layer facilities necessary to support basic connection-oriented communications applications. These common elements are specified by reference to the OSI connection-mode Recommendations for the ACSE protocol, the Presentation layer protocol and the Session layer protocol.

This is one of a series of Recommendations to support the minimal OSI functions in the upper layers. It is technically aligned with ISO/IEC ISP 11188-1.

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Recommendation X.637

BASIC CONNECTION-ORIENTED COMMON UPPER LAYER REQUIREMENTS

(Geneva, 1996)

1 Scope

1.1 General

This Recommendation specifies the common upper layer elements of A-profiles. The common elements are specified by reference to OSI connection-mode standards for the ACSE protocol, the presentation layer protocol, and the session layer protocol.

A specification defining an A-profile may reference this Recommendation as a common basis for the selection of elements of the upper layer protocols (ACSE, presentation and session) that it uses.

The use of this Recommendation is supplemented by a statement of the referencing specification's specific upper layer requirements for the use of ACSE, presentation and session protocol standards.

The rest of an A-profile definition, including, for instance, its use of standards for Application Service Elements (ASE, see also Figure 1), follows the general rules of ISO/IEC TR 10000-1.

1.2 Scenario

The model used is one of two end systems running an end-to-end association using the ACSE, presentation and session services and protocols (see Figure 1).

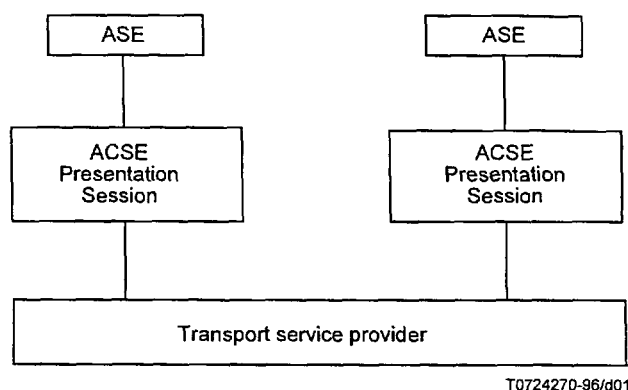


FIGURE 1/X.637

Model of the supportive layers

2 Normative references

The following Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision: all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

2.1 Identical ITU-T 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.225 (1995) | ISO/IEC 8327-1:1996, *Information technology – Open Systems Interconnection – Connection-oriented session protocol: Protocol specification*.
- ITU-T Recommendation X.226 (1994) | ISO/IEC 8823-1:1994, *Information technology – Open Systems Interconnection – Connection-oriented presentation protocol: Protocol specification*.
- ITU-T Recommendation X.227 (1995) | ISO/IEC 8650-1:1996, *Information technology – Open Systems Interconnection – Connection-oriented protocol for the association control service element : Protocol specification*.
- ITU-T Recommendation X.245 (1995) | ISO/IEC 8327-2:1996, *Information technology – Open Systems Interconnection – Connection-oriented session protocol: Protocol Implementation Conformance Statement (PICS) proforma*.
- ITU-T Recommendation X.246 (1996) | ISO/IEC 8823-2:1997, *Information technology – Open Systems Interconnection – Connection-oriented presentation protocol: Protocol Implementation Conformance Statement (PICS) proforma*.
- ITU-T Recommendation X.247 (1996) | ISO/IEC 8650-2:1997, *Information technology – Open Systems Interconnection – Protocol specification for the association control service element: Protocol Implementation Conformance Statement (PICS) proforma*.
- ITU-T Recommendation X.680 (1994) | ISO/IEC 8824-1:1995, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation*.
- ITU-T Recommendation X.680/Amd.1 (1995) | ISO/IEC 8824-1/Amd.1:1995, *Information technology – Abstract Syntax Notation One (ASN.1) – Specification of basic notation – Amendment 1: Rules of Extensibility*.
- ITU-T Recommendation X.690 (1994) | ISO/IEC 8825-1:1995, *Information technology – ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)*.

2.2 Additional references

- CCITT Recommendation X.650 (1992), *Open Systems Interconnection (OSI) – Reference Model for naming and addressing*.
- ISO 7498-3:1989, *Information processing systems – Open System Interconnection – Basic Reference Model – Part 3: Naming and addressing*.
- ISO/IEC TR 10000-1:1995, *Information technology – Framework and taxonomy of International Standardized Profiles – Part 1: Framework*.
- ISO/IEC TR 10000-2:1995, *Information technology – Framework and taxonomy of International Standardized Profiles – Part 2: Principles and Taxonomy for OSI Profiles*.

NOTE – This Recommendation makes detailed references to subclauses of the specified editions of some of the above references.

3 Definitions

For the purposes of this Recommendation, the following definitions apply.

Terms used in this Recommendation are defined in the referenced base standards.

In addition, the following term is defined.

3.1 General

3.1.1 referencing specification: A specification of an A-profile which includes by reference or by replication, the requirements in this Recommendation.

3.2 Support level

To specify the support level of protocol features for this Recommendation, the following terminology is defined:

- a) column 1 of Table 1 lists the support level identifiers for a profile used in this Recommendation;
- b) column 2 of Table 1 defines the use of these requirements classifications of column 1 by a referencing specification;
- c) column 3 of Table 1 defines the use of the requirements classifications by an implementation.

4 Abbreviations

AARQ	A-Associate Request (APDU)
AC	Accept (SPDU)
ACSE	Association Control Service Element
AE	Application Entity
AP	Application Process
APDU	Application Protocol Data Unit
ARP	Abnormal Release Provider (PPDU)
ARU	Abnormal Release User (PPDU)
ASE	Application Service Element
ASN.1	Abstract Syntax Notation One
BER	Basic Encoding Rules of a single ASN.1 type
CD	Capability Data (SPDU)
CDO	Connect Data Overflow (SPDU)
CN	Connect (SPDU)
CP	Connect Presentation (PPDU)
CPA	Connect Presentation Accept (PPDU)
CPR	Connect Presentation Reject (PPDU)
DT	Data Transfer (SPDU)
ER	Exception Report (SPDU)
FTAM	File Transfer, Access and Management
ICS	Implementation Conformance Statement
ISP	International Standardized Profile
MIA	Minor Sync Ack (SPDU)
OA	Overflow Accept (SPDU)
OSI	Open Systems Interconnection
PCI	Protocol Control Information
PDU	Protocol Data Unit
PDV	Presentation Data Value
PGI	Parameter Group Identifier
PI	Parameter Identifier
PICS	Protocol Implementation Conformance Statement
PPDU	Presentation Protocol Data Unit
PRL	Profile Requirements List