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Information technology — Open Systems Interconnection — Application Layer structure

*Technologies de l'information — Interconnexion de systèmes ouverts
(OSI) — Structure de la couche Application*



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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.

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.

International Standard ISO/IEC 9545 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in collaboration with ITU-T. The identical text is published as ITU-T X.207.

This second edition cancels and replaces the first edition (ISO/IEC 9545:1989), which has been technically revised.

Annexes A, B and C of this International Standard are for information only.

Introduction

This Recommendation | International Standard is a refinement of the description of the OSI Application Layer contained in ITU-T Rec. X.200 | ISO/IEC 7498-1.

The purpose of this Recommendation | International Standard is to facilitate a coherent and modular approach to Application Layer standardization. It defines a set of architectural principles and concepts that provide a basis for structuring and relating the specifications contained in Application Layer Recommendations and Standards. It defines the internal structure of the Application Layer, providing a framework for the development of Application Layer Recommendations and Standards. It also describes the general principles underlying the operation of application-protocols.

The following subjects are covered by this Recommendation | International Standard:

- a) the relationship between distributed information processing and OSI communication services;
- b) the structure of application-entities;
- c) the OSI-service and protocol structure in the Application Layer; and
- d) ASO-context and application-context.

This Recommendation | International Standard only considers those aspects of distributed information processing for an application which are relevant for the derivation of generic requirements for the structuring of Application Layer communications.

The architectural framework specified in this Recommendation | International Standard embodies concepts that may not be fully supported by existing Application Layer Recommendations and Standards. However, these concepts have been specified so as to provide a basis for the development of future Application Layer Recommendations and Standards which, it is anticipated, will require their use.

This Recommendation | International Standard may be subject to future expansion, particularly with regard to multi-peer communication, security, application-context management, recovery, and Open Distributed Processing.

A companion Technical Report, which is currently under development, will provide guidance on applying this Application Layer Structure during the creation of Application Layer service and protocol Recommendations and Standards.

INTERNATIONAL STANDARD**ITU-T RECOMMENDATION****INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION –
APPLICATION LAYER STRUCTURE****1 Scope**

This Recommendation | International Standard refines the description of the Application Layer contained in the Basic Reference Model for OSI (ITU-T Rec. X.200 | ISO/IEC 7498-1). It provides a framework for coordinating the development of existing and future Application Layer Recommendations and Standards. It is provided for reference by Application Layer Recommendations and Standards.

In particular this Recommendation | International Standard:

- a) defines the nature of Recommendations and Standards in the Application Layer and the relationships among them;
- b) defines the architectural framework in which individual OSI Application Layer protocols are developed.
- c) defines concepts which provide a flexible approach to structuring in the Application Layer;
- d) defines the categories of identifiable objects which are necessary for the specification and operation of protocols;
- e) relates distributed information processing activities to the Recommendations and Standards in the Application Layer;
- f) structures, and relates, specifications in Application Layer Recommendations and Standards;
- g) identifies the various kinds of specification necessary in Application Layer Recommendations and Standards.

This Recommendation | International Standard is provided for reference by Application Layer Recommendations and Standards. Its purpose is to facilitate a coherent and modular approach to the structuring of specifications for Application Layer behaviour. It neither specifies services nor protocols for OSI; nor is it an implementation specification for systems, nor a basis for appraising the conformance of implementations.

2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this 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 editions 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)¹⁾ | ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model*.
- ITU-T Recommendation X.210 (1993) | ISO/IEC 10731:1993, *Information technology – Open Systems Interconnection – Conventions for the Definition of OSI services*.
- CCITT Recommendation X.660 (1992) | ISO/IEC 9834-1:1993, *Information technology – Open Systems Interconnection – Procedures for the operation of OSI Registration Authorities: General Procedures*.

¹⁾ Presently at the stage of draft.

2.2 Paired Recommendations | International Standards equivalent in technical content

- CCITT Recommendation X.217 (1992), *Service definition for the Association Control Service Element*.
ISO 8649:1989, *Information technology – Open Systems Interconnection – Service Definition for the Association Control Service Element*.
- CCITT Recommendation X.216 (1988), *Presentation service definition for Open Systems Interconnection for CCITT applications*.
ISO 8822:1988, *Information processing systems – Open Systems Interconnection – Connection oriented presentation service definition*.
- CCITT Recommendation X.650 (1992), *Open Systems Interconnection (OSI) Reference Model for naming and addressing*.
ISO 7498-3:1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model: Naming and Addressing*.