

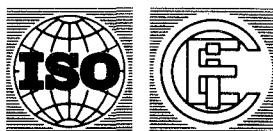
INTERNATIONAL STANDARD

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Information technology — Open Systems Interconnection — Application Layer structure

*Systèmes de traitement de l'information — Interconnexion de systèmes ouverts —
Structure de la couche application*



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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) together form a system for worldwide standardization as a whole. 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 approval before their acceptance as International Standards. They are approved in accordance with procedures requiring at least 75 % approval by the national bodies voting.

International Standard ISO/IEC 9545 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

Annex A of this International Standard is for information only.

Introduction

This International Standard is a refinement of the description of the OSI Application Layer contained in ISO 7498.

The purpose of this International Standard is to provide a basis for co-ordinating the development of Application Layer standards and to enable existing International Standards to be placed in perspective within the OSI reference model. It defines the internal structure of the Application Layer, providing a framework for the development of Application Layer standards. It also describes the general principles underlying the operation of application-protocols.

The following subjects are covered by this 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) application-context.

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

NOTE — This framework may be extended to support more generalized application-entity structures including recursive use of structures defined in this International Standard.

This International Standard may be subject to future expansion, particularly with regard to connectionless mode communication, multi-peer communication, multi-party communication, security, application-context management, Application Layer relationships, recovery, and Open Distributed Processing.

Information technology – Open Systems Interconnection – Application Layer structure

1 Scope

This International Standard refines the Basic Reference Model for OSI to provide a framework for co-ordinating the development of existing and future Application Layer standards. It is provided for reference by Application Layer standards.

In particular this International Standard:

- a) defines the nature of standards in the Application Layer and the relationships among them;
- b) defines the architectural framework in which individual OSI Application Layer protocols shall be developed.
- c) defines the categories of identifiable objects which are necessary for the specification and operation of protocols;
- d) relates distributed information processing activities to the standards in the Application Layer.

This International Standard does not specify services and protocols for OSI. It is neither an implementation specification for systems, nor a basis for appraising the conformance of implementations. Further, it addresses neither the requirements for, nor the form of, documentation of such services and protocols.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7498 : 1984, *Information processing systems - Open Systems Interconnection - Basic Reference Model*.

ISO 7498-3: 1989, *Information processing systems - Open Systems Interconnection - Part 3: Naming and Addressing*.

ISO 8649: 1988, *Information processing systems - Open Systems Interconnection - Service Definition for the Association Control Service Element*.

ISO 8822: 1988, *Information processing systems - Open Systems Interconnection - Connection - oriented presentation service definition*.

ISO/TR 9007: 1987, *Information processing systems - Concepts and terminologies for the conceptual schema and the information base*.

3 Definitions

3.1 For the purposes of this International Standard, the following terms as defined in ISO 7498 apply:

- a) application-process;
- b) application-entity;
- c) (N)-function;
- d) (N)-layer;
- e) (N)-protocol;
- f) (N)-protocol-control-information;
- g) (N)-protocol-data-unit;
- h) real open system; and
- i) transfer syntax.

3.2 For the purposes of this International Standard, the following terms as defined in ISO 7498-3 apply:

- a) (N)-association;
- b) (N)-directory-function;
- c) (N)-protocol-addressing-information; and
- d) (N)-service-access-point-address.

3.3 For the purposes of this International Standard, the following terms as defined in ISO/TR 9007 apply:

- a) Conceptual Schema;
- b) Information Base; and
- c) Universe of Discourse.

3.4 For the purposes of this International Standard, the following terms as defined in ISO 8822 apply:

- a) abstract syntax; and
- b) presentation context.

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

3.5.1 application-association, association: A co-operative relationship between two application-entity-invocations for the purpose of communication of information and co-ordination of their joint operation. This relationship is formed by the exchange of application-protocol-control-information using the Presentation Service.

3.5.2 application-context: A set of rules shared in common by two application-entity-invocations in order to enable their co-operative operation (see 5.7).

NOTE 1 — An application-context is a shared conceptual schema for the universe of discourse for communication.

3.5.3 application-context-definition: The description of an application-context.

3.5.4 application context name: A name that unambiguously identifies an application-context-definition.

3.5.5 application-entity-invocation: A specific utilization of part or all of the capabilities of a given application-entity in support of the communications requirements of an application-process-invocation.

3.5.6 application-entity-type: A description of a class of application-entities in terms of a set of capabilities defined for the Application Layer.

3.5.7 application-process-invocation: A specific utilization of part or all of the capabilities of a given application-process in support of a specific occasion of information processing.

3.5.8 application-process-type: A description of a class of application-processes in terms of a set of interworking capabilities.

3.5.9 application-service-element: A set of application-functions that provides a capability for the interworking of application-entity-invocations for a specific purpose.

NOTE 2 — This definition refines the original definition of application-service-elements in ISO 7498.