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Information technology — Open Systems Interconnection — Basic Reference Model: The Basic Model

*Technologies de l'information — Modèle de référence de base pour
l'interconnexion de systèmes ouverts (OSI): Le modèle de base*



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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 7498-1 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 Recommendation X.200.

This second edition, along with parts 2, 3 and 4, cancels and replaces the first edition (ISO 7498:1984), which has been technically revised.

ISO/IEC 7498 consists of the following parts, under the general title *Information technology — Open Systems Interconnection — Basic Reference Model*:

- *Part 1: The Basic Model*
- *Part 2: Security Architecture*
- *Part 3: Naming and addressing*
- *Part 4: Management framework*

Annex B forms an integral part of this part of ISO/IEC 7498. Annex A is for information only.

Introduction

This reference model provides a common basis for the coordination of standards development for the purpose of systems interconnection, while allowing existing standards to be placed into perspective within the overall reference model. It also identifies areas for developing and improving standards and provides a common reference for maintaining consistency among all related standards. The text was developed jointly with ITU-T and the main intent of this revision is to introduce the joint text, which incorporates inclusion of the concept of connectionless transmission, in addition to a number of technical and editorial refinements.

INTERNATIONAL STANDARD**CCITT RECOMMENDATION****INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION –
BASIC REFERENCE MODEL: THE BASIC MODEL****1 Scope**

1.1 The purpose of this Reference Model of Open Systems Interconnection is to provide a common basis for the coordination of standards development for the purpose of systems interconnection, while allowing existing standards to be placed into perspective within the overall Reference Model.

1.2 The term Open Systems Interconnection (OSI) qualifies standards for the exchange of information among systems that are “open” to one another for this purpose by virtue of their mutual use of the applicable standards.

1.3 The fact that a system is open does not imply any particular systems implementation, technology or means of interconnection, but refers to the mutual recognition and support of the applicable standards.

1.4 It is also the purpose of this Reference Model to identify areas for developing or improving standards, and to provide a common reference for maintaining consistency of all related standards. It is not the intent of this Reference Model either to serve as an implementation specification, or to be a basis for appraising the conformance of actual implementations, or to provide a sufficient level of detail to define precisely the services and protocols of the interconnection architecture. Rather, this Reference Model provides a conceptual and functional framework which allows international teams of experts to work productively and independently on the development of standards for each layer of the Reference Model for OSI.

1.5 The Reference Model has sufficient flexibility to accommodate advances in technology and expansion in user demands. This flexibility is also intended to allow the phased transition from existing implementations to OSI standards.

1.6 While the scope of the general architectural principles required for OSI is very broad, this Reference Model is primarily concerned with systems comprising terminals, computers, and associated devices and the means for transferring information between such systems. Other aspects of OSI requiring attention are described briefly (see 4.2).

1.7 The description of the Basic Reference Model of OSI is developed in stages:

1.8 Clause 4 establishes the reasons for Open Systems Interconnection, defines what is being connected, the scope of the interconnection, and describes the modelling principles used in OSI.

1.9 Clause 5 describes the general nature of the architecture of the Reference Model; namely that it is layered, what layering means, and the principles used to describe layers.

1.10 Clause 6 names, and introduces the specific layers of the architecture.

1.11 Clause 7 provides the description of the specific layers.

1.12 Clause 8 provides the description of Management Aspects of OSI.

1.13 Clause 9 specifies compliance and consistency with the OSI Reference Model.

1.14 An indication of how the layers were chosen is given in Annex A to this Basic Reference Model.

1.15 Additional aspects of this Reference Model beyond the basic aspects are described in several parts. The first part describes the Basic Reference Model. The second part describes the architecture for OSI Security. The third part describes OSI Naming and Addressing. The fourth describes OSI System Management.

1.16 The Basic Reference Model serves as a framework for the definition of services and protocols which fit within the boundaries established by the Reference Model.

1.17 In those few cases where a feature is explicitly marked (optional) in the Basic Reference Model it should remain optional in the corresponding service or protocol (even if at a given instant the two cases of the option are not yet documented).

1.18 This Reference Model 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.

1.19 For standards which meet the OSI requirements, a small number of practical subsets are defined from optional functions, to facilitate implementation and compatibility.