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STANDARD

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**Information technology — Open Systems  
Interconnection — Structure of  
management information: Management  
Information Model**

*Technologies de l'information — Interconnexion de systèmes ouverts —  
Structure des informations de gestion: Modèle d'informations de gestion*



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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 10165-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in collaboration with CCITT. The identical text is published as CCITT Recommendation X.720.

ISO/IEC 10165 consists of the following parts, under the general title *Information technology – Open Systems Interconnection – Structure of management information*:

- *Part 1: Management information model*
- *Part 2: Definition of management information*
- *Part 4: Guidelines for the definition of managed objects*
- *Part 5: Generic management information*
- *Part 6: Requirements and guidelines for implementation conformance statement proformas associated with management information*

## Introduction

ISO/IEC 10165 is a multipart standard developed according to ISO 7498 and ISO/IEC 7498-4. ISO/IEC 10165 is related to the following International Standards:

- ISO/IEC 9595:1990, *Information technology – Open Systems Interconnection – Common management information service definition*;
- ISO/IEC 9596:1990, *Information technology – Open Systems Interconnection – Common management information protocol*;
- ISO/IEC 10040:1992, *Information technology – Open Systems Interconnection – Systems management overview*;
- ISO/IEC 10165:1992, *Information technology – Open Systems Interconnection – Structure of management information*.

## INTERNATIONAL STANDARD

## CCITT RECOMMENDATION

**INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION –  
STRUCTURE OF MANAGEMENT INFORMATION:  
MANAGEMENT INFORMATION MODEL**

## 1 Scope

This Recommendation | International Standard is one of the set of Recommendations | International Standards for the OSI Management Information Service (MIS). It defines the Information Model of managed objects and their attributes that corresponds to the Information aspects of the systems management model introduced in the Systems Management Overview CCITT Rec. X.701 | ISO/IEC 10040, thus providing the modelling concepts necessary for the development of the other systems management Recommendations | International Standards. It also defines the principles of naming managed objects and attributes.

This Recommendation | International Standard defines the logical structure of systems management information. In accordance with CCITT Rec. X.700 | ISO 7498-4 and X.701 | ISO/IEC 10040 management information is structured in terms of **managed objects**, **their attributes**, the **management operations** that can be performed upon them, and the **notifications** that they can emit. The set of managed objects in an open system, together with their attributes, constitutes that open system's **management information base (MIB)**.

This Recommendation | International Standard defines the concepts of managed objects in the Information Model, and prescribes the principles for **naming** the managed objects and their attributes so that they may be identified in and accessed by management protocols. This Recommendation | International Standard also describes the concept of managed object classes and the relationships into which managed objects and managed object classes can enter, including: inheritance, specialization, allomorphism and containment.

This Recommendation | International Standard applies to all definitions of managed objects and their attributes for the purposes of systems management.

NOTE – Although this Recommendation | International Standard applies to systems management, layer management, when defined, can also use this Recommendation | International Standard.

## 2 Normative references

The following CCITT 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 CCITT Secretariat maintains a list of currently valid CCITT Recommendations.

### 2.1 Identical Recommendations | International Standards

- CCITT Recommendation X.701 (1992) | ISO/IEC 10040:1992, *Information technology – Open Systems Interconnection – Systems management overview*.
- CCITT Recommendation X.722 (1992) | ISO/IEC 10165-4:1992, *Information technology – Open Systems Interconnection – Structure of management information: Guidelines for the definition of management objects*.
- CCITT Recommendation X.734 (1992) | ISO/IEC 10164-5:1993, *Information technology – Open Systems Interconnection – Systems Management – Event report management function*.

## 2.2 Paired Recommendations | International Standards equivalent in technical content

- CCITT Recommendation X.200 (1988), *Reference Model of Open Systems Interconnection for CCITT Applications*.  
ISO 7498:1984, *Information processing systems – Open Systems Interconnection – Basic Reference Model*.
- CCITT Recommendation X.208 (1988), *Specification of Abstract Syntax Notation One (ASN.1)*.  
ISO/IEC 8824:1990, *Information technology – Open Systems Interconnection – Specification of Abstract Syntax Notation One (ASN.1)*.
- CCITT Recommendation X.700 (1992), *Management Framework Definition for Open Systems Interconnection (OSI) for CCITT Applications*.  
ISO/IEC 7498-4:1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model – Part 4: Management framework*.
- CCITT Recommendation X.710 (1991), *Common Management Information Service Definition for CCITT Applications*.  
ISO/IEC 9595:1991, *Information technology – Open Systems Interconnection – Common management information service definition*.
- CCITT Recommendation X.711 (1991), *Common Management Information Protocol Specification for CCITT applications*.  
ISO/IEC 9596-1:1991, *Information technology – Open Systems Interconnection – Common management information protocol – Part 1: Specification*.
- CCITT Recommendation X.800 (1991), *Security Architecture for CCITT Applications*.  
ISO 7498-2:1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model – Part 2: Security architecture*.
- CCITT Recommendation X.501 (1988), *The Directory – Models*.  
ISO/IEC 9594-2:1990, *Information technology – Open Systems Interconnection – The Directory – Part 2: Models*.
- CCITT Recommendation X.511 (1988), *The Directory – Abstract Service Definition*.  
ISO/IEC 9594-3:1990, *Information technology – Open Systems Interconnection – The Directory – Part 3: Abstract service definition*.

## 2.3 Additional references

- ISO/IEC 7498-3:1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model – Part 3: Naming and addressing*.