

INTERNATIONAL STANDARD

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Information technology — Open Systems Interconnection — Structure of management information: Generic management information

*Technologies de l'information — Interconnexion de systèmes ouverts
(OSI) — Structure des informations de gestion: Informations de gestion
génériques*



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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 10165-5 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.723.

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 10164:1992, *Information technology – Open Systems Interconnection – Systems Management*.

INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION – STRUCTURE OF MANAGEMENT INFORMATION: GENERIC MANAGEMENT INFORMATION

1 Scope

This Recommendation | International Standard provides developers of OSI Recommendations | International Standards that contain managed object definitions with generic definitions of managed object classes that will

- provide common superclass definitions from which layer- or resource- specific object class definitions may be derived;
- assist with the development of common elements of object class definitions across multiple layers or components of layers;
- reduce duplication of effort in other working groups by identifying commonly useful definitions.

To this end, this Recommendation | International Standard defines managed object classes which may be used as superclasses, using the template notation defined in CCITT Rec. X.722 | ISO/IEC 10165-4, including the definition of any packages, attributes, attribute groups, behaviour, actions, notifications and parameters that may be associated with the superclasses. It also defines functional units required by layer- or resource-specific management standards which are not defined in the CCITT Rec. X.73X | ISO/IEC 10164 series of systems management function standards.

This Recommendation | International Standard is applicable to the development of any OSI Recommendation | International Standard which defines managed object classes that may be refined from the managed object classes defined in this Recommendation | International Standard.

This Recommendation | International Standard does not specify or imply any constraints on the development of managed object definitions in terms of their inheritance relationships. Developers of managed object class definitions are encouraged to use the definitions contained in this Recommendation | International Standard to promote consistency between similar managed object classes; however, use of these definitions is not mandated.

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 International 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 edition of the Recommendations and International Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The ITU-T maintains a list of the currently valid 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.720 (1992) | ISO/IEC 10165-1:1992, *Information technology – Open Systems Interconnection – Structure of Management Information: Management Information Model*.
- CCITT Recommendation X.721 (1992) | ISO/IEC 10165-2:1992, *Information technology – Open Systems Interconnection – Structure of Management Information: Definition of Management Information*.

- CCITT Recommendation X.722 (1992) | ISO/IEC 10165-4:1992, *Information technology – Open Systems Interconnection – Structure of Management Information: Guidelines for the Definition of Managed Objects*.
- CCITT Recommendation X.731 (1992) | ISO/IEC 10164-2:1992, *Information technology – Open Systems Interconnection – Systems Management: State Management Function*.

2.2 Paired Recommendations | International Standards equivalent in technical content

- CCITT Recommendation X.200 (1989), *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 (1989), *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 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*.

3 Definitions

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

3.1 Basic reference model definitions

This Recommendation | International Standard uses the following terms defined in CCITT Rec. X.200 | ISO 7498:

- a) (N)-SAP;
- b) open system;
- c) systems management;
- d) application process.

3.2 Management framework definitions

This Recommendation | International Standard uses the following terms defined in CCITT Rec. X.700 | ISO/IEC 7498-4: managed object.

3.3 Systems management overview definitions

This Recommendation | International Standard uses the following terms defined in CCITT Rec. X.701 | ISO/IEC 10040:

- a) generic definitions;
- b) managed object class;
- c) management information;
- d) notification.

3.4 Management information model definitions

This Recommendation | International Standard uses the following terms defined in CCITT Rec. X.720 | ISO/IEC 10165-1:

- a) allomorphism;
- b) attribute type;
- c) behaviour;
- d) containment;

- e) name binding;
- f) package;
- g) specialization;
- h) subordinate object;
- i) superclass;
- j) superior object.

3.5 CMIS definitions

This Recommendation | International Standard uses the following terms defined in CCITT Rec. X.710 | ISO/IEC 9595: attribute.

3.6 ASN.1 definitions

This Recommendation | International Standard uses the following terms defined in CCITT Rec. X.208 | ISO/IEC 8824:

- a) object identifier;
- b) sequence-of type;
- c) sequence type;
- d) set-of type;
- e) set type;
- f) type.

3.7 GDMO definitions

This Recommendation | International Standard uses the following terms defined in CCITT Rec. X.722 | ISO/IEC 10165-4:

- a) managed object class definition;
- b) template.

4 Abbreviations

ASN.1	Abstract Syntax Notation One
CL	Connectionless
CMIS	Common Management Information Service
CO	Connection Oriented
GDMO	Guidelines for the Definition of Managed Objects
GMI	Generic Management Information
OSI	Open Systems Interconnection
PDU	Protocol Data Unit
SAP	Service Access Point
SMI	Structure of Management Information

5 Conventions

This Recommendation | International Standard uses the template notation defined in CCITT Rec. X.722 | ISO/IEC 10165-4 as the notation for defining managed object classes and the abstract syntax notation defined in CCITT Rec. X.208 | ISO/IEC 8824 as the means of defining ASN.1 data types associated with the use of the template notation.

Text based on these notational conventions is printed in a distinctive typeface.

6 Overview

The purpose of this Recommendation | International Standard is to document structures for managed object classes and management information types that are common to more than one open system resource, by defining those common structures as generic definitions of management information. Other work items, such as those concerned with the