

Implementation of
ISO/IEC 10165-6:1994

**Information
technology —
Open Systems
Interconnection —
Structure of
management
information:
Requirements and
guidelines for
implementation
conformance statement
proformas associated
with OSI management**

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National foreword

This British Standard reproduces verbatim ISO/IEC 10165-6:1994 and implements it as the UK national standard.

This British Standard is published under the direction of the Information Systems Technology Assembly whose Technical Committee IST/21 has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international committee any enquiries on interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ISO/IEC title page, pages ii to iv, pages 1 to 31 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

INTERNATIONAL
STANDARD

ISO/IEC
10165-6

First edition
1994-11-01

**Information technology — Open Systems
Interconnection — Structure of
management information: Requirements
and guidelines for implementation
conformance statement proformas
associated with OSI management**

*Technologies de l'information — Interconnexion de systèmes ouverts
(OSI) — Structure des informations de gestion: Exigences et principes
directeurs pour la mise en œuvre des proformas d'avis de conformité
associée à la gestion OSI*



Reference number
ISO/IEC 10165-6:1994(E)

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Descriptors: Data processing, information interchange, network interconnection, open systems interconnection, management, information.

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 10165-6 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.724.

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 OSI management.*

Introduction

OSI management standardization inevitably involves coordinated work by a number of standards bodies. ITU-TS SG 7 and ISO/IEC JTC1/SC21/WG4 are jointly responsible for the development of Recommendations | International Standards that describe the architecture for OSI management, the services, protocols and functions that are used for systems management, and the structure of management information. Other working groups, in ITU-TS, ISO/IEC JTC1/SC21, ISO/IEC JTC1/SC6 and elsewhere, are responsible for the development of Recommendation | International Standards that describe the management aspects of particular layers of the OSI Basic Reference Model; these may describe (N)-layer management protocols, management aspects of (N)-layer operation, and managed objects that provide a “management view” of aspects of the layer operation and are visible to systems management.

This Recommendation | International Standard provides requirements and guidelines for Management Conformance Summary (MCS) proformas, Managed Object Conformance Statement (MOCS) proformas, Management Information Definition Statement (MIDS) proformas, and Managed Relationship Conformance Statement (MRCS) proformas and for the specification of these proformas. These proformas are applicable to standards for OSI management including definitions of managed objects. The MCS proforma provides a summary of PICS proforma, MOCS proforma and MRCS proforma. The PICS is a statement made by an implementor to claim conformance to a protocol specification. The MOCS is a statement made by an implementor to claim conformance to a managed object class definition. The MRCS is a statement made by an implementor to claim conformance to a managed relationship definition, such as a name binding definition.

CCITT Rec. X.700 | ISO/IEC 7498-4 and CCITT Rec. X.701 | ISO/IEC 10040 define the architecture for OSI management, and describe the content of and relationships between OSI management standards.

CCITT Rec. X.720 | ISO/IEC 10165-1 describes the model of management information in terms of managed objects.

CCITT Rec. X.721 | ISO/IEC 10165-2 (DMI) defines generic managed object classes and characteristics. Where a suitable definition of management information exists in DMI, it is recommended that this definition be referenced in preference to defining a new information element with the same structure.

CCITT Rec. X.208 | ISO/IEC 8824 defines the notation used to express the abstract syntax of the data elements associated with managed object characteristics that shall be carried in systems management protocol.

1 Scope

This Recommendation | International Standard provides requirements and guidelines for Management Conformance Summary (MCS) proformas, Managed Object Conformance Statement (MOCS) proformas, Management Information Definition Statement (MIDS) proformas, and Managed Relationship Conformance Statement (MRCS) proformas and for the specification of these proformas. These proformas are applicable to standards for OSI management including definitions of managed objects. The MCS proforma provides a summary of PICS proforma, MOCS proforma and MRCS proforma. The PICS is a statement made by an implementor to claim conformance to a protocol specification. The MOCS is a statement made by an implementor to claim conformance to a managed object class definition. The MRCS is a statement made by an implementor to claim conformance to a managed relationship definition, such as a name binding definition.

2 Normative references

The following ITU-T 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 editions of the Recommendations and International Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The TSB (Telecommunications Standardization Bureau) Secretariat maintains a list of currently valid ITU-T Recommendations.

2.1 Identical ITU-T 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 10165-1:1993, *Information technology — Open Systems Interconnection — Structure of management information: Management information model*.

— 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*.

2.2 Paired ITU-T Recommendations | International Standards equivalent in technical content

— 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.290 (1992), *OSI conformance testing methodology and framework for protocol recommendations for CCITT applications — General concepts*.

ISO/IEC 9646-1:1991, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts*.

— CCITT Recommendation X.291 (1992), *OSI conformance testing methodology and framework for protocol recommendations for CCITT applications — Abstract test suite specification*.

ISO/IEC 9646-2:1991, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 2: Abstract test suite specification*.

— ITU-T Recommendation X.296, *OSI conformance testing methodology and framework for protocol recommendations for ITU-T applications — Implementation conformance statements — Requirements and guidance on ICS and ICS proforma¹⁾*.

ISO/IEC 9646-7, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 7: Implementation conformance statements — Requirements and guidance on ICS and ICS proformas¹⁾*.

— 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*.

3 Definitions

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

3.1 ASN.1 definitions

This Recommendation | International Standard makes use of the following term defined in CCITT Rec. X.208 | ISO/IEC 8824:

object identifier

3.2 Management framework definitions

This Recommendation | International Standard makes use of the following term defined in CCITT Rec. X.700 | ISO/IEC 7498-4:

managed object

3.3 Conformance testing methodology definitions

This Recommendation | International Standard makes use of the following terms defined in CCITT Rec. X.290 | ISO/IEC 9646-1:

- a) protocol implementation conformance statement (PICS);
- b) PICS proforma;
- c) system conformance statement.

3.4 Systems management overview definitions

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

- a) managed object class;
- b) managed object conformance statement;
- c) MOCS proformas;
- d) notification.

3.5 CMIS definitions

This Recommendation | International Standard makes use of the following term defined in CCITT Rec. X.710 | ISO/IEC 9595:

attribute

¹⁾ Presently at the stage of draft.

3.6 Management information model definitions

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

- a) action;
- b) actual class;
- c) attribute group;
- d) behaviour;
- e) characteristic;
- f) conditional package;
- g) instantiation;
- h) name binding;
- i) package;
- j) parameter;
- k) superclass;
- l) uninstantiable managed object class.

3.7 Guidelines for the definition of managed objects definitions

This Recommendation | International Standard makes use of the following term defined in CCITT Rec. X.722 | ISO/IEC 10165-4:

template

3.8 Implementation conformance statements definitions

This Recommendation | International Standard makes use of the following terms defined in ITU-T Rec. X.296 | ISO/IEC 9646-7:

- a) (ICS) item;
- b) (ICS) question;
- c) status (value);
- d) (support) answer.

3.9 Additional definitions

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

3.9.1

managed relationship conformance statement (MRCS)

a statement by a supplier of a managed relationship implementation, stating the capabilities and options which have been implemented, and any features which have been omitted

3.9.2

management conformance summary (MCS)

a statement by a supplier that identifies an implementation and provides information on whether the implementation claims conformance to any of the listed set of documents that specify conformance requirements to OSI management

3.9.3

management information definition statement (MIDS) proforma

a document, in the form of a questionnaire which is used in the construction of a MOCS proforma

3.9.4

MCS proforma

a document, in the form of a questionnaire that when completed by the supplier of an implementation becomes the MCS

3.9.5

MRCS proforma

a document, in the form of a questionnaire that when completed by the supplier of an implementation becomes the MRCS

3.9.6

proforma specification

standardized procedures for constructing a questionnaire that when completed by the supplier of an implementation becomes an implementation conformance statement

4 Abbreviations

GDMO	Guidelines for the Definition of Managed Objects
ICS	Implementation Conformance Statement
MCS	Management Conformance Summary
MIDS	Management Information Definition Statement
MOCS	Managed Object Conformance Statement
MRCS	Managed Relationship Conformance Statement
PICS	Protocol Implementation Conformance Statement

5 Requirements and guidelines for specification and completion of proformas

Proforma specifications shall follow the style as documented in the annexes of this Recommendation | International Standard. Proforma specifications shall provide the information required by this Recommendation | International Standard. Additional tables may be included for other information, if needed.

5.1 Structure of proformas

The annexes of this Recommendation | International Standard specify the formats for MCS proforma, MOCS proforma, MIDS proforma and MRCS proforma for name bindings. Thus, proforma specifications are provided by the annexes of this Recommendation | International Standard. MIDS proforma are used to construct MOCS proforma. The supplier of an implementation then fills in the blanks in the proforma to produce MCS, MOCS and MRCS for name bindings. Also, this Recommendation | International Standard specifies the format of MRCS proforma for name binding and that are summarized in a MCS proforma.

There are three levels of documentation pertaining to MCS, namely:

- a) guidelines or Recommendation | International Standard tools for the production of MCS proformas;
- b) a MCS proforma, associated with a standard related to OSI management, which is to be filled in by a supplier of the implementation and when filled in is a MCS — c) below;
- c) a MCS prepared by a supplier of the implementation as part of a conformance claim to a standard related to OSI management.

It is a) that is the subject of this Recommendation | International Standard. MCS proformas b) will be expected to be produced in accordance with the MCS proforma specification in this Recommendation | International Standard.

Similarly, there are three levels of documentation pertaining to MOCS, namely:

- a) guidelines or Recommendation | International Standard tools for the production of MOCS proformas;

b) a MOCS proforma, associated with a managed object class definition, which is to be filled in by a supplier of the implementation and when filled in is a MOCS — c) below;

c) a MOCS prepared by a supplier of the implementation as part of a conformance claim to a managed object definition.

It is a) that is the subject of this Recommendation | International Standard. MOCS proformas b) will be expected to be produced in accordance with the MOCS proforma specification in this Recommendation | International Standard. Uninstantiable managed object classes do not require MOCS proformas.

In addition, there are two levels of documentation pertaining to MIDS, namely:

- a) guidelines or Recommendation | International Standard tools for the production of MIDS proformas;
- b) a MIDS proforma, which is used to construct a MOCS proforma.

It is a) that is the subject of this Recommendation | International Standard. MIDS proformas b) will be expected to be produced in accordance with the MIDS proforma specification in this Recommendation | International Standard.

In addition, there are three levels of documentation pertaining to MRCS for name bindings, namely:

- a) guidelines or Recommendation | International Standard tools for the production of MRCS proformas for name bindings;
- b) a MRCS proforma for name bindings, associated with a name binding definition, which is to be filled in by a supplier of the implementation and when filled in is a MRCS [see c) below];
- c) a MRCS for name bindings prepared by a supplier of the implementation as part of a conformance claim to a name binding definition.

It is a) that is the subject of this Recommendation | International Standard. MRCS proformas for name bindings b) will be expected to be produced in accordance with the MRCS proforma specification for name bindings in this Recommendation | International Standard.