

INTERNATIONAL
STANDARD

ISO/IEC
10165-9

First edition
2000-11-01

**Information technology — Open Systems
Interconnection — Structure of
management information: Systems
management application layer managed
objects**

*Technologies de l'information — Interconnexion de systèmes ouverts
(OSI) — Structure de l'information de gestion: Objets gérés de couche
d'application de gestion-systèmes*



Reference number
ISO/IEC 10165-9:2000(E)

© ISO/IEC 2000

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO/IEC 2000

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

CONTENTS

	<i>Page</i>
1 Scope	1
2 Normative References	1
2.1 Identical Recommendations International Standards	1
2.2 Paired ITU-T Recommendations International Standards equivalent in technical content	2
3 Definitions	2
3.1 Basic reference model definitions	2
3.2 Management framework definitions	2
3.3 CMIS definitions	2
3.4 Systems management overview definitions	3
3.5 Management information model definitions	3
3.6 Guidelines for the definition of managed objects definitions	3
3.7 Event report management function definitions	3
3.8 OSI conformance testing definitions	3
4 Symbols and abbreviations	3
5 Requirements	4
6 Managed object class definitions	4
6.1 SMASE Managed Object Class	4
6.2 CMISE Managed Object Class	5
6.3 SMASE Invocation Managed Object Class	5
6.4 CMISE Invocation Managed Object Class	5
7 Attributes	6
7.1 CMIP PDU Receiving Support	6
7.2 CMIP PDU Sending Support	6
7.3 CMISE Functional Units Selected	6
7.4 CMISE Functional Units Supported	6
7.5 Invoke Identifiers Outstanding	6
7.6 Invoke Identifiers Performing	6
7.7 Protocol Versions Supported	6
7.8 SMASE Functional Units Selected	6
7.9 SMASE Functional Units Supported	6
7.10 Systems Management User Information Received	6
7.11 Systems Management User Information Sent	6
Annex A – Management Information Definitions	7

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this part of ISO/IEC 10165 may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 10165-9 was prepared by ITU-T (as ITU-T Recommendation X.727) and was adopted, under a special "fast-track procedure", by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

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*
- *Part 7: General relationship model*
- *Part 8: Managed objects for supporting upper layers*
- *Part 9: Systems management application layer managed objects*

Annex A forms a normative part of this part of ISO/IEC 10165.

INTERNATIONAL STANDARD**ITU-T RECOMMENDATION**

**INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION –
STRUCTURE OF MANAGEMENT INFORMATION: SYSTEMS MANAGEMENT
APPLICATION LAYER MANAGED OBJECTS**

1 Scope

This Recommendation | International Standard defines systems management protocol machine managed objects, thus allowing the use of the Common Management Information Protocol (CMIP), as defined in ITU-T Rec. X.711 | ISO/IEC 9596-1, to manage CMISE and SMASE application service elements and invocations.

This Recommendation | International Standard:

- establishes a model for supporting systems management application service elements;
- provides generic and formal definitions for supporting systems management application service element managed objects.

This Recommendation | International Standard does not:

- define new management functions;
- specify a framework or methodology for conformance tests.

In the context of this Recommendation | International Standard, the term *systems management* is used to refer to SMASE, CMISE, and ROSE.

2 Normative References

The following Recommendations and International Standards contain provision 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 edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunications Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model*.
- ITU-T Recommendation X.287 (1999) | ISO/IEC 10165-8:2000, *Information technology – Open Systems Interconnection – Structure of management information: Managed objects for supporting upper layers*.
- ITU-T Recommendation X.701 (1997) | ISO/IEC 10040:1998, *Information technology – Open Systems Interconnection – Systems management overview*.
- ITU-T Recommendation X.710 (1997) | ISO/IEC 9595:1998, *Information technology – Open Systems Interconnection – Common management information service*.
- ITU-T Recommendation X.711 (1997) | ISO/IEC 9596-1:1998, *Information technology – Open Systems Interconnection – Common management information protocol: Specification*.
- 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.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*.
- ITU-T Recommendation X.723 (1993) | ISO/IEC 10165-5:1994, *Information technology – Open Systems Interconnection – Structure of management information: Generic management information*.
- CCITT Recommendation X.734 (1992) | ISO/IEC 10164-5:1993, *Information technology – Open Systems Interconnection – Systems Management: Event Report Management Function*.
- ITU-T Recommendation X.750 (1996) | ISO/IEC 10164-16:1997, *Information technology – Open Systems Interconnection – Systems Management: Management knowledge management function*.

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

- 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)*.
- ITU-T Recommendation X.290 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – General concepts*.
ISO/IEC 9646-1:1994, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 1: General concepts*.
- CCITT Recommendation X.700 (1992), *Management framework 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*.