

AS/NZS 4248.1:1994
ISO/IEC ISP 11183-1:1992

Australian/New Zealand Standard

**Information technology—
International standardized profiles
AOM1n OSI management—
Management communications**

**Part 1: Specification of ACSE,
presentation and session protocols
for the use by ROSE and CMISE**

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1 The Crescent,
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee IT/1 on Information Systems—Interconnection. It is identical with and has been reproduced from ISO/IEC ISP 11183-1:1992, *Information technology—International Standardized Profiles AOM1n OSI Management—Management Communications*, Part 1: *Specification of ACSE, presentation and session protocols for the use by ROSE and CMISE*.

This Standard is issued as a Joint Standard under the terms of the Active Cooperation Agreement between Standards Australia and Standards New Zealand.

The objective of this Standard is to provide users of OSI management Standards with a specification on how the association control service element, presentation layer and the session layer standards shall be used to provide the required upper layer functions for the common management information element (CMISE) and the remote operation service element (ROSE) functions.

The term ‘normative’ has been used in this Standard to define the application of the annexes to which they apply. A ‘normative’ annex is an integral part of a Standard.

This Standard is one of a series of Open Systems Interconnection (OSI) Standards which are currently under development. Since OSI Standards are developmental, there may be some minor difficulties encountered in their implementation. For this reason, Standards Australia will be providing, through the OSI Help Desk, a service to coordinate and disseminate information concerning difficulties which are identified in using this Standard.

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For the purpose of this Standard, the source text should be modified as follows:

- (a) *Terminology* The words ‘this Australian/New Zealand Standard’ should replace the words ‘this International Standard’ wherever they appear.
- (b) *Decimal marker* Substitute a full point for a comma where it appears as a decimal marker.
- (c) *References* The references to international Standards should be replaced by references, where appropriate, to the following Australian or Joint Australian/New Zealand Standards:

Reference to International Standard or other publication		Australian or Joint Australian/New Zealand Standard	
ISO		AS	
8326	Information processing systems— Open Systems Interconnection— Basic connection oriented session service definition	3591	Information processing systems— Open Systems Interconnection— Basic connection oriented session service definition
8326/Amd.2	Amendment 2: Unlimited user data	—	
8327	Information processing systems— Open Systems Interconnection— Basic connection oriented session protocol specification	3592	Information processing systems— Open Systems Interconnection— Basic connection oriented session protocol specification
8327/Amd.2	Amendment 2: Unlimited user data	—	
8327-2	Part 2: Protocol Implementation Conformance Statement (PICS) Proforma	—	

ISO		AS	
8649	Information processing systems— Open Systems Interconnection— Service definition for the Association Control Service Element	3683	Information processing systems— Open Systems Interconnection— Service definition for the Association Control Service Element
8649/Amd.1	Amendment 1: Authentication during association establishment	—	
8649/Cor.1	Technical Corrigendum 1	—	
8650	Information processing systems— Open Systems Interconnection— Protocol specification for the Association Control Service Element	3684	Information processing systems— Open Systems Interconnection— Protocol specification for the Association Control Service Element
8650/Amd.1	Amendment 1: Authentication during association establishment	—	
8650/Cor.1	Technical Corrigendum 1	—	
8650-2	Part 2: Protocol Implementation Conformance Statement (PICS) Proforma	—	
8822	Information processing systems— Open Systems Interconnection— Connection oriented presentation service definition	3615	Information processing systems— Open Systems Interconnection— Connection oriented presentation service definition
8823	Information processing systems— Open Systems Interconnection— Connection oriented presentation protocol specification	3616	Information processing systems— Open Systems Interconnection— Connection oriented presentation protocol specification
8823-2	Part 2: Protocol Implementation Conformance Statement (PICS) Proforma	—	
ISO/IEC			
7498	Information processing systems— Open Systems Interconnection— Basic Reference Model	2777	Information processing systems— Open Systems Interconnection— Basic reference model
7498-4	Part 4: Management Framework	2777.4	Part 4: Management framework
8824	Information technology—Open Systems Interconnection—Specification of Abstract Syntax Notation One (ASN.1)	3625	Information technology—Open Systems Interconnection— Specification of Abstract Syntax Notation One (ASN.1)
8825	Information technology—Open Systems Interconnection—Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1)	3626	Information technology—Open Systems Interconnection—Specification of basic encoding rules for Abstract Syntax Notation One (ASN.1)
9072	Information processing systems— Text Communication—Remote Operations	3893	Information processing systems— Text communication—Remote Operations
9072-1	Part 1: Model, notation and service definition	3893.1	Part 1: Model, notation and service definition
9072-2	Part 2: Protocol specification	3893.2	Part 2: Protocol specification

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ISO		AS	
9595	Information technology— Open Systems Interconnection— Common management information service definition	3965	Information technology— Open Systems Interconnection— Common management information service definition
9596	Information technology— Open Systems Interconnection— Common management information protocol	3964	Information technology— Open Systems Interconnection— Common management information protocol
9596-1	Part 1: Specification	3964.1	Part 1: Specification
		AS/NZS	
10040	Information technology— Open Systems Interconnection— Systems Management Overview	3692	Information technology— Open Systems Interconnection— Systems management overview
10165	Information technology— Open Systems Interconnection— Structure of management information	4151	Information technology— Open Systems Interconnection— Structure of management information
10165-2	Part 2: Definition of management information	4151.2	Part 2: Definition of management information
ISO/IEC TR			
10000	Information technology— Framework and taxonomy of International Standardized Profiles	3966	Information technology— Framework and taxonomy of International Standardized Profiles
10000-1	Part 1: Framework	3966.1	Part 1: Framework
10000-2	Part 2: Taxonomy of Profiles	3966.2	Part 2: Taxonomy of profiles

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AUSTRALIAN/NEW ZEALAND STANDARD

Information technology — International Standardized Profiles AOM1n OSI Management — Management Communications —

Part 1:

Specification of ACSE, presentation and session protocols for the use by ROSE and CMISE

1 Scope

1.1 General

This part of ISO/IEC ISP 11183 specifies how the Association Control Service Element, the Presentation Layer, and the Session Layer standards shall be used to provide the required upper layer functions for the CMISE/ROSE functions (see also figure 1). These specifications are therefore the common basis for the application functions as defined in ISO/IEC ISP 11183-2, ISO/IEC ISP 11183-3 and any of the subsequent parts that might be developed.

NOTE - This part of ISO/IEC ISP 11183 will be aligned with the future ISO/IEC ISP 11188-1 Common Upper Layer Requirements - Part 1 Basic connection oriented requirements, which is currently under development

1.2 Position within the Taxonomy

This part of ISO/IEC ISP 11183 is the first part, as common text, of a multipart ISP identified in ISO/IEC TR 10000-2 as "AOM, OSI Management Communications" (see also ISO/IEC TR 10000-1, 8.2 for the definition of multipart ISPs).

It may be combined with any T-Profiles (see ISO/IEC TR 10000) specifying the OSI connection-mode transport service.

1.3 Scenario

The model used is one of two end systems running an end-to-end association using the ACSE, Presentation and Session services and protocols (see figure 1).

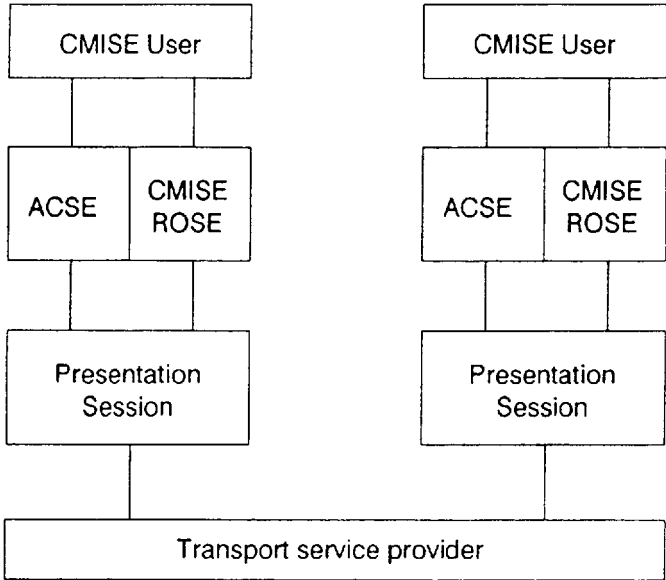


Figure 1 - Model of the supportive layers

Any systems management application entity (SMAE), located on each end system, may be association-initiator or association-responder, by agreeing on a common application context definition.

The upper layers functions required for supporting the OSI Management Communications functions are specified in the set of standards identified in table 1.

Table 1 - Supporting protocols set

Application Layer	ISO 9595, 9596-1 ISO 9072-1, 9072-2 ISO 8649, 8650 ISO 8649/Cor 1 ISO 8650/Cor.1 ISO 8649/Amd 1 ISO 8650/Amd.1
Presentation Layer	ISO 8822, 8823 ISO 8824, 8825
Session Layer	ISO 8326, 8327 ISO 8326/Amd.2 ISO 8327/Amd.2

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC ISP 11183. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this part of ISO/IEC ISP 11183 are warned against automatically applying any more recent editions of the documents listed below, since the nature of references made by ISPs to such documents, is that they may be specific to a particular edition. Members of IEC and ISO maintain registers of currently valid International Standards and ISPs, and CCITT maintains published editions of its current Recommendations.

ISO/IEC 7498-4:1989, *Information processing systems - Open Systems Interconnection - Basic Reference Model - Part 4: Management Framework*. | CCITT Recommendation X.700, *Management Framework Definition for Open Systems Interconnection (OSI) for CCITT applications*.

ISO 8326:1987, *Information processing systems - Open Systems Interconnection - Basic connection oriented session service definition*. | CCITT Recommendation X.215:1988, *Session service definition for Open Systems Interconnection for CCITT applications*.

ISO 8326:1987/Amd.2: ¹⁾, *Information processing systems - Open Systems Interconnection - Basic connection oriented session service definition - Amendment 2: Unlimited user data*.

ISO 8327:1987, *Information processing systems - Open Systems Interconnection - Basic connection oriented session protocol specification*. | CCITT Recommendation X.225:1988, *Session protocol specification for Open Systems Interconnection for CCITT applications*.

ISO 8327:1987/Amd.2: ¹⁾, *Information processing systems - Open Systems Interconnection - Basic connection oriented session protocol specification - Amendment 2: Unlimited user data*.

ISO 8327-2: ¹⁾, *Information processing systems - Open Systems Interconnection - Basic connection oriented session protocol specification - Part 2: Protocol Implementation Conformance Statement (PICS) Proforma*.

ISO 8649:1988, *Information processing systems - Open Systems Interconnection - Service definition for the Association Control Service Element*. | CCITT Recommendation X.217:1988, *Association control service definition for Open Systems Interconnection for CCITT applications*.

ISO 8649:1988/Amd.1: 1990, *Information processing systems - Open Systems Interconnection - Service definition for the Association Control Service Element - Amendment 1: Authentication during association establishment*.

ISO 8649:1988/Cor.1: 1991, *Information processing systems - Open Systems Interconnection - Service definition for the Association Control Service Element - Technical Corrigendum 1*.

ISO 8650:1988, *Information processing systems - Open Systems Interconnection - Protocol specification for the Association Control Service Element*. | CCITT Recommendation X.227:1988, *Association control protocol specification for Open Systems Interconnection for CCITT applications*.

ISO 8650:1988/Amd.1: 1990, *Information processing systems - Open Systems Interconnection - Protocol specification for the Association Control Service Element - Amendment 1: Authentication during association establishment*.

ISO 8650:1988/Cor.1: 1990, *Information processing systems - Open Systems Interconnection - Protocol specification for the Association Control Service Element - Technical Corrigendum 1*.

ISO 8650-2: ¹⁾, *Information technology - Open Systems Interconnection - Protocol specification for the Association Control Service Element - Part 2: Protocol Implementation Conformance Statement (PICS) Proforma*.

ISO 8822:1988, *Information processing systems - Open Systems Interconnection - Connection oriented presentation service definition*. | CCITT Recommendation X.216:1988, *Presentation service definition for Open Systems Interconnection for CCITT applications*.

ISO 8823:1988, *Information processing systems - Open Systems Interconnection - Connection oriented presentation protocol specification*. | CCITT Recommendation X.226:1988, *Presentation protocol specification for Open Systems Interconnection for CCITT applications*.

ISO 8823-2: ¹⁾, *Information technology - Open Systems Interconnection - Connection oriented presentation protocol specification - Part 2: Protocol Implementation Conformance Statement (PICS) Proforma*.

ISO/IEC 8824:1990, *Information technology - Open Systems Interconnection - Specification of Abstract Syntax Notation One (ASN.1)*. | CCITT Recommendation X.208:1989, *Specification of abstract syntax notation one (ASN.1)*.

ISO/IEC 8825:1990, *Information technology - Open Systems Interconnection - Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1)*. | CCITT Recommendation X.209:1988, *Specification of basic encoding rules for abstract syntax notation one (ASN.1)*.

ISO/IEC 9072-1:1989, *Information processing systems - Text Communication - Remote Operations - Part 1: Model, notation and service definition*. | CCITT Recommendation X.219:1988, *Remote Operations: Model, notation and service definition*.

¹⁾ To be published

ISO/IEC 9072-2:1989, *Information processing systems - Text Communication - Remote Operations - Part 2: Protocol specification*. | CCITT Recommendation X.229:1988, *Remote Operations: Protocol specification*.

ISO/IEC 9595:1991, *Information technology - Open Systems Interconnection - Common management information service definition*. | CCITT Recommendation X.710:1991, *Common management information service definition for CCITT applications*.

ISO/IEC 9596-1:1991, *Information technology - Open Systems Interconnection - Common management information protocol - Part 1: Specification*. | CCITT Recommendation X.711:1991, *Common management information protocol specification for CCITT applications*.

CCITT Recommendation X.701:(1992) | ISO/IEC 10040:1992, *Information technology - Open Systems Interconnection - Systems Management Overview*.

CCITT Recommendation X.721:(1992) | ISO/IEC 10165-2:1992, *Information technology - Open Systems Interconnection - Structure of management information - Definition of management information*.

ISO/IEC TR 10000-1: 1992, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1: Framework*.

ISO/IEC TR 10000-2: 1992, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 2: Taxonomy of Profiles*.

3 Definitions

For the purpose of this part of ISO/IEC ISP 11183, the following definitions apply in addition to those used in the base standards. Terms used in this part of ISO/IEC ISP 11183 are defined in the normative references given in clause 2.

3.1 Base standard support

To specify the support level of protocol features required for conformance to the base standards, respectively ISO/IEC 8650, ISO/IEC 8823 and ISO/IEC 8327, the following terms are defined. The corresponding abbreviations defined hereafter are used in the "Base" column of the tables in the annexes A, B and C.

- m : mandatory
- o : optional
- cn : conditional, where *n* is the number which identifies the applicable condition
- : not applicable

The meanings of conditional statements *cn* are specified respectively in the last clause of each annex A, B and C.

3.2 Profile support level

To specify the support level of protocol features for this part of ISO/IEC ISP 11183, the following terms are defined. The corresponding abbreviations defined in the subclauses 3.2.1 up to 3.2.6 are used in the "Profile" column of the tables in the annexes A, B and C.

3.2.1 Supported; m: Any feature denoted by "m" is mandatory, optional or conditional in the base standard. That feature shall be supported, i.e. its syntax and procedures shall be implemented as specified in the base standard or in this part of ISO/IEC ISP 11183 by all implementations claiming conformance to this part of ISO/IEC ISP 11183.

However, it is not a requirement that the feature shall be used in all instances of communication, unless mandated by the base standard or stated otherwise in this part of ISO/IEC ISP 11183.

NOTES

- 1 For features which are optional in the base standard, conforming implementations shall be able to interwork with other implementations not supporting this feature.
- 2 The support of a feature can be conditional, depending on the support of a class of features to which it belongs, e.g. a parameter in a PDU, a PDU in a functional unit, or with which a relationship exists, e.g. two inter-related functional units.

3.2.2 Optionally supported; o: The implementation and the use of a feature denoted by "o" are left open in this part of ISO/IEC ISP 11183. The final choice may be defined either by a requirement stated in another part of ISO/IEC ISP 11183 or by a decision of the implementor or the user of this part of ISO/IEC ISP 11183.

3.2.3 Conditionally supported; c: The implementation and the use of a feature denoted by "cn" or "c(n)" depend on an explicit condition which is specified but not resolved in this part of ISO/IEC ISP 11183. "n" is a number which identifies the applicable condition: "cn" refers to a common conditional statement specified in the base standards, "c(n)" refers to a specific conditional statement specified locally at the bottom of the table which uses it. The condition states two or more possibilities for the final status which will be resolved to one of the following: "m", "o", "i", "-" or "x".

3.2.4 Excluded; x.

NOTE - The "excluded" support level does not appear in this part of ISO/IEC ISP 11183.

3.2.5 Outside the scope; i: The implementation and the use of a feature denoted by "i" are not considered in this part of ISO/IEC ISP 11183. This means that:

- implementations may use it outside the scope of this part of ISO/IEC ISP 11183,
- ISP conformance tests shall not be provided for it,
- implementations may conform to other profiles where it is required,
- no requirements are placed on either sender or receiver to support it,
- receiver actions are unspecified when it is present.

3.2.6 Not applicable; -: This feature is not defined in the context where it is mentioned, e.g. a parameter which is not part of the respective PDU. The occurrence of "not applicable" features is mainly due to the format of the tables in the ISPICS Requirements List.

4 Abbreviations

ACSE	Association Control Service Element
AE	Application Entity
AET	Application Entity Title
AOM	Application OSI Management
AP	Application Process
APDU	Application Protocol Data Unit
ARP	Abnormal Release Provider
ARU	Abnormal Release User
ASE	Application Service Element
ASN.1	Abstract Syntax Notation One
CDO	Connect Data Overflow
CN	Connect
CP	Connect Presentation
CPA	Connect Presentation Accept
CPR	Connect Presentation Reject
CMIP	Common Management Information Protocol
CMIS	Common Management Information Service
CMISE	Common Management Information Service Element
DT	Data Transfer
FU	Functional Unit
GT	Give Token
ISP	International Standardized Profile
ISPICS	ISP Implementation Conformance Statement
OA	Overflow Accept
OSI	Open Systems Interconnection
PCI	Protocol Control Information
PGI	Parameter Group Identifier
PDU	Protocol Data Unit
PDV	Presentation Data Value
PICS	Protocol Implementation Conformance Statement
PPDU	Presentation Protocol Data Unit
PR	Prepare
ROSE	Remote Operation Service Element

SMAE	Systems Management Application Entity
SPDU	Session Protocol Data Unit
TD	Typed Data

Support level for protocol features:

m	supported
o	optionally supported
c	conditionally supported
i	outside the scope
-	not applicable

5 Conformance

This part of ISO/IEC ISP 11183 states requirements upon implementations for the purpose of achieving interworking. A claim of conformance to this part of ISO/IEC ISP 11183 is a claim that all requirements in the relevant base standards are satisfied, and that all requirements specified in the clause 3, in the following clauses and in annexes A, B, C of this part of ISO/IEC ISP 11183 are satisfied. Annexes A, B, C state the relationship between these requirements and those of the base standards.

5.1 Conformance statement

For each implementation claiming conformance to this part of ISO/IEC ISP 11183 an appropriate set of PICs shall be made available stating support or non-support of each option identified in this part of ISO/IEC ISP 11183.

5.2 Relationships with base standards

5.2.1 ACSE conformance

To conform to the Association Control Service Element (ACSE) protocol used in this part of ISO/IEC ISP 11183, implementations shall implement the normal mode and shall implement all the supported (m) features (identified in annex A) unless they are part of an unimplemented optional feature. They shall state which optionally supported (o) features are implemented.

5.2.2 Presentation layer conformance

To conform to the Presentation protocol used in this part of ISO/IEC ISP 11183, implementations shall implement the normal mode and shall implement all the supported (m) features (identified in annex B) unless they are part of an unimplemented optional feature. They shall state which optionally supported (o) features are implemented.

5.2.3 Transfer syntax conformance

An implementation conforming to this part of ISO/IEC ISP 11183 shall support the "Basic Encoding of a single ASN.1 type" as specified in ISO 8825, together with the additional rules defined in clause 8 of this part of ISO/IEC ISP 11183, for the generation of protocol encodings specified in ASN.1

5.2.4 Session layer conformance

To conform to the Session protocol used in this part of ISO/IEC ISP 11183, implementations shall implement all the supported (m) features (identified in annex C) unless they are part of an unimplemented optional feature. They shall state which optionally supported (o) features are implemented.

5.2.5 Prerequisite requirement

A conforming implementation shall be able to receive all PDU elements of the supported PDUs.