INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 11183-1

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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

Technologies de l'information — Profils normalisés internationaux AOM1n pour la gestion OSI — Gestion de communication —

Partie 1: Spécification des protocoles ACSE, présentation et session pour emploi par ROSE et CMISE

Reference number
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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. In addition to developing International Standards, ISO/IEC JTC 1 has created a Special Group on Functional Standardization for the elaboration of International Standardized Profiles.

An International Standardized Profile is an internationally agreed, harmonized document which identifies a standard or group of standards, together with options and parameters, necessary to accomplish a function or set of functions.

Draft International Standardized Profiles are circulated to national bodies for voting. Publication as an International Standardized Profile requires approval by at least 75 % of the national bodies casting a vote.

International Standardized Profile ISO/IEC ISP 11183-1 was prepared with the collaboration of

— OSI Asia-Oceania Workshop (AOW);

— European Workshop for Open Systems (EWOS);

— OSI Implementors Workshop (OIW).

ISO/IEC ISP 11183 consists of the following parts under the general title *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*

— *Part 2: CMISE/ROSE for AOM12 — Enhanced Management Communications*

— *Part 3: CMISE/ROSE for AOM11 — Basic Management Communications*

Annexes A, B and C form an integral part of this part of ISO/IEC ISP 11183.

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Introduction

This International Standardized Profile (ISP) is defined within the context of Functional Standardization, in accordance with the principles specified by ISO/IEC TR 10000, "Framework and Taxonomy of International Standardized Profiles". The context of Functional Standardization is one part of the overall field of Information Technology (IT) standardization activities, covering base standards, profiles and registration mechanisms. A Profile defines a combination of base standards that collectively perform a specific well-defined IT Function. Profiles standardize the use of options and other variations in the base standards, and provide a basis for the development of uniform, internationally recognized conformance test suites.

One of the most important roles for an ISP is to serve as the basis for the development (by organizations other than ISO and IEC) of internationally recognized tests and test centres. ISPs are produced not simply to "legitimize" a particular choice of base standards and options, but to promote real system interoperability. The development and widespread acceptance of tests based on this and other ISPs is crucial to the successful realization of this goal.

The text for this part of ISO/IEC ISP 11183 was developed in close cooperation among the Network Management Expert Groups of the three International OSI Workshops: the European Workshop for Open Systems (EWOS), the NIST Workshop for Implementors of OSI (NIST OIW) and the OSI Asia-Oceania Workshop (AOW). This ISP is harmonized among these three Workshops and it was finally ratified by the Workshops'plenary assemblies.

This part of ISO/IEC ISP 11183 contains three normative annexes:

Annex A	ISPICS Requirements List of ACSE
Annex B	ISPICS Requirements List of Presentation
Annex C	ISPICS Requirements List of Session.

The expression "International Standardized Profile" is replaced by the abbreviation "ISP" in the following clauses and annexes.

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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.

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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).

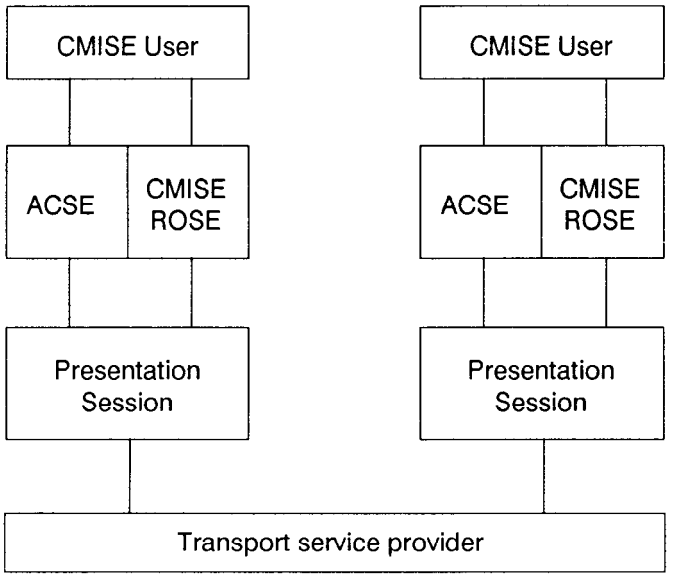


Figure 1 - Model of the supportive layers

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

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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 - Part2: 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 - Part2: 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 - Part2 : 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.*

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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.

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3.2.3 Conditionally supported; c: The implementation and the use of a feature denoted by "c*n*" 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: "c*n*" 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 occurence 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

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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 PICSs 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.

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5.3 Pragmatic PDU size limitation

The size of the "User Data" and "User Information" fields in a Session PDU shall be conformant with the following constraints:
- receiving implementations shall be capable of receiving at least 10240 octets;
- for sending implementations, a size larger than 10240 octets shall be out of scope of this part of ISO/IEC ISP 11183.

6 Association Control Service Element (ACSE)

The support of functions and parameters for the Association Control Service Element is as specified in annex A. The PICS applicable to an implementation may contain limitations on length or value aspects of a protocol, but it shall not contain limits more severe for receiving or less severe for sending than those specified in this clause. An implementation in conformance with this part of ISO/IEC ISP 11183 may abort an association, if the requirements as specified in 6.1 to 6.5 are violated.

6.1 Association establishment

A conforming implementation in an end system shall support either the association-initiator or the association-responder role or both.

The two end systems may share only one association or may use two or several associations depending on the application contexts. This part of ISO/IEC ISP 11183 does not impose a restriction on the number of associations between the two end systems.

The support of the authentication functional unit is optional. An implementation that supports the authentication functional unit shall conform to the requirements specified in ISO 8650/Amd.1 and this part of ISO/IEC ISP 11183.

6.2 Association normal release

A conforming implementation shall be able to request and accept an orderly release of the association, whatever its role, initiator or responder, during the association establishment.

6.3 Association abnormal release

A conforming implementation shall be able to request and accept an abnormal release of the association.

An implementation that support the authentication functional unit shall be able to support the requirements specified in ISO 8650/Amd.1 and this part of ISO/IEC ISP 11183.

6.4 Application entity title

Application entity titles shall be implemented as specified in ISO 8650/Cor.1.

This part of ISO/IEC ISP 11183 does not restrict either form of AET. Both forms shall be static mandatory/dynamically optional for receiving, and static optional for sending. If an implementation is capable of sending it, then it must support both forms for called AET, and either form for calling and responding AET.

Conforming implementations shall provide the syntax and the values of the AE-title form(s) they implemented.

NOTES

1 An AETitle encoding shall be formed by appending the AE-qualifier to the corresponding AP-title.

2 If the AE-title-form1 is used, it is recommended that the "SimpleNameType" ASN.1 definition, specified in clause 14.2 of ISO/IEC 10165-2, be used for the RDN attribute value syntax.

3 AE-title-form2 is an Object Identifier registered by an authorized Registration Authority.

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6.5 Application context

This part of ISO/IEC ISP 11183 does not specify a value for the application context name parameter. Other profiles referring to this ISP part may specify the value of the application context name to be supported.

NOTE - As an example, ISP AOM2n specifies the mandatory requirements to support at least the application context defined in ISO/IEC 10040.

An implementation shall support the rules specified in Annex A of ISO/IEC 9596-1, in any application context that includes CMISE as one of the ASEs.

6.6 Abort APDU

When the Abort APDU is used during the association establishment phase, the Presentation layer negotiation is considered as complete, and the "direct-reference" component of EXTERNAL shall not be present.

7 Presentation layer

The support of functions and parameters for the Presentation protocol is as specified in annex B. The PICS applicable to an implementation may contain limitations on length or value aspects of a protocol, but it shall not contain limits more severe for receiving or less severe for sending than those specified in this clause. An implementation in conformance with this part of ISO/IEC ISP 11183 may abort a connection, if the requirements as specified in 7.1 to 7.9 are violated.

7.1 Presentation Functional Units

This part of ISO/IEC ISP 11183 only requires the Kernel functional unit. The support of the Context Management and of the Context Restoration FUs is outside the scope of this part of ISO/IEC ISP 11183.

7.2 Presentation context identifier

A conforming implementation shall encode presentation context identifiers in the range 1 to 32,767 (odd integer only).

A conforming implementation shall support at least 2 simultaneous presentation contexts. This implies that the presentation context definition list and the presentation context definition result list parameters be encoded with at least two elements in their sequence. This part of ISO/IEC ISP 11183 does not restrict the number of abstract syntaxes supported and consequently the number of presentation context identifiers needed.

7.3 Transfer syntax name in PDV-list

The "transfer-syntax-name" component of a PDV-list value in a CP PPDU shall be present, if and only if more than one transfer syntax name was proposed for the presentation context of the presentation data values.

The Kernel FU being the only Presentation functional unit required by this part of ISO/IEC ISP 11183, the "transfer-syntax-name" component of a PDV-list value shall not appear in any other PPDU.

The use of several transfer syntaxes proposed for a same presentation data value is for further study.

7.4 Encoding of User data parameter

The "User-data" value of each PPDU shall be encoded as a "Fully-encoded-data" type. Each CMIP/ROSE APDU shall be encoded as a single ASN.1 type according to the Basic Encoding rules for ASN.1, (see 8.6).

This ISP interprets the mapping specified in 8.2 of ISO/IEC 9072-2 to be a one-to-one mapping of the ROSE APDU onto the user-data of the P-DATA PDU. Consequently, the number of PDV-list elements in the "Fully-encoded-data" value shall be restricted to one.

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The "User-data" parameter of CPR PPDU shall contain the A-ASSOCIATE response APDU if the "Provider-reason" parameter is not present.

Receivers must accept any of the above encodings. Any other form of encoding is outside the scope of this part of ISO/IEC ISP 11183.

7.5 Encoding of CPC-type value

The usage of the CPC-type value is outside the scope of this part of ISO/IEC ISP 11183.

7.6 Presentation selector size

The size of the presentation selector values shall be restricted to 4 octets.

7.7 Default context

The default context name parameter is outside the scope of this part of ISO/IEC ISP 11183: at least two abstract syntaxes are required by the conforming implementations and the Presentation expedited data service is never required.

7.8 Presentation context definition result list

The "presentation-context-definition-result-list" parameter is required if the "Provider-reason" parameter is absent in the CPR PPDU. If this parameter is present, then the "presentation-context-definition-result-list" parameter is optional.

No semantics are implied by the absence of this optional parameter of the CPR PPDU.

7.9 Invalid encoding and Presentation aborts

If a received PPDU contains any improperly encoded data values (including data values embedded within the user data field of PPDU) and an abort is issued, then either an ARU or an ARP PPDU shall be sent.

8 Transfer syntax

The following subclauses 8.1 up to 8.7 specify common rules which limit the encoding of data defined in the different parts of this part of ISO/IEC ISP 11183, according to the Basic Encoding Rules for Abstract Syntax Notation One. A decoder shall accept encodings that are within these limits. Other behaviours of the decoder when these limits are exceeded are outside the scope of this part of ISO/IEC ISP 11183.

8.1 Tag values

The maximum value of an ASN.1 tag shall be 16383. Since this is the largest unsigned number that can be represented in 14 bits, the encoding of a tag occupies at most 3 octets.

8.2 ASN.1 length fields

The constraints placed on the ASN.1 length fields are specified in 5.3.

8.3 Integer type values

For any value of the ASN.1 type INTEGER defined in CMIP/ROSE and ACSE abstract syntaxes and in Presentation PDU definitions, a sender shall not encode values of greater than 2**31-1 or less than -2**31. A receiver shall be able to decode at least values in the range -2**31 to 2**31-1.

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Attribute values of some managed object definitions are expected to exceed this limitation. Profiles using CMISE may replace those restrictions by other restrictions on the range of integer parameters within ANY DEFINED BY type fields in CMIP PDUs. To guarantee interworking, decoding of received attribute values should be supported within the range -2**63 to 2**63-1, and when a specific subtype excludes negative values, 0 to 2**64-1.

8.4 Bitstring type values

Unless otherwise specified in the base standard, each bit named in a BIT STRING type used in CMIP/ROSE and ACSE abstract syntaxes and in Presentation PDU definitions, and in the abstract syntaxes of the other parts of this ISP, shall be explicitly encoded in the associated BIT STRING value, even if it is a part of a string of trailing zero bits.

The behaviour pertaining to BIT STRING types encoded in association or connection PDUs is governed by extensibility rules specified in ISO 8823, ISO 8650 and ISO/IEC 9596-1. Elements of procedure, associated with Protocol and/or Management Information definitions, dictate behaviours pertaining to BIT STRING types encoded in data transfer PDUs.

8.5 EXTERNAL data type

The data value to be encapsulated in an EXTERNAL type, specified in the CMIP/ROSE and ACSE abstract syntaxes, shall be an instance of a single ASN.1 type, encoded according to the Basic Encoding Rules for ASN.1; consequently, the option single-ASN.1-type of the "encoding" element shall be supported in the EXTERNAL type. The other encoding options are outside the scope of this part of ISO/IEC ISP 11183.

Any exceptions shall be specified in the profiles referring to this part of ISO/IEC ISP 11183; in particular, it is for further study as to whether this limitation applies to the value of the "userInfo" element in CMIP-A-ASSOCIATE-Information and CMIP-A-ABORT-Information encoding.

8.6 PDV-list data type

The data value to be encapsulated in a PDV-list type, specified in the Presentation abstract syntax, shall be an instance of a single ASN.1 type, encoded according to the Basic Encoding Rules for ASN.1; consequently, the option single-ASN.1-type of the "presentation-data-values" element shall be supported in the PDV-list type. The other encoding options are outside the scope of this part of ISO/IEC ISP 11183.

Any exceptions shall be specified in the profiles referring to this part of ISO/IEC ISP 11183.

8.7 Constructed encoding

When encoding CMIP/ROSE PDUs, ACSE PDUs and Presentation PDUs, the following rule applies : The contents octets for a constructed encoding of a BIT STRING, OCTET STRING, or character string value consists of the complete encoding of zero, one, or more data values, and the encoding of these data values shall be primitive.

Any exceptions shall be specified in the other parts of the ISO/IEC ISP 11183.

9 Session layer

The support of functions and parameters for the Session protocol is as specified in annex C. The PICS applicable to an implementation may contain limitations on length or value aspects of a protocol, but it shall not contain limits more severe for receiving or less severe for sending than those specified in this clause. An implementation in conformance with this part of ISO/IEC ISP 11183 may abort a connection, if the requirements as specified in 9.1 to 9.7 are violated.

9.1 Session Functional Units required

The only Session functional units required are Kernel and Duplex.

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9.2 Session version

Session version 2 for the use of unlimited user data as specified by Addendum 2 to ISO 8327 shall be selected.

NOTE - The Data Overflow parameter of the CN SPDU shall not be sent because of the pragmatic PDU size limitation specified in 5.3. The length of the "User Data" field of other SPDUs and of "User Information" field of DT SPDU shall be constrained by the pragmatic PDU size limitation specified in 5.3.

9.3 Basic concatenation

A conforming implementation shall only use the following basic concatenation form among all those defined in ISO 8327: GT SPDU as the first SPDU and DT SPDU as the second one. When a category 0 SPDU is concatenated with a category 2 SPDU, the category 0 SPDU does not contain user data.

9.4 Session segmenting

The segmentation is out of scope of this part of ISO/IEC ISP 11183. It can be ruled out using the negotiation mechanisms of the protocol. An implementation claiming conformance to this part of ISO/IEC ISP 11183 shall be able to interwork without segmenting.

9.5 Re-use of transport connection

Reuse of transport connection is out of the scope of this part of ISO/IEC ISP 11183. It can be ruled out by dynamic choice of behaviour when terminating the session connection.

9.6 Use of transport expedited

The use of the transport expedited service is out of the scope of this part of ISO/IEC ISP 11183.

9.7 Receipt of invalid SPDUs

Upon receipt of an invalid SPDU, the session protocol machine shall take any action as specified in section A.4.3.2 of ISO 8327, except that an invalid SPDU shall not be ignored.

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Annex A

(normative)

ISPICS Requirements List of ACSE, for the use by ROSE and CMISE

A.1 General

In the event of a discrepancy becoming apparent in the body of this part of ISO/IEC ISP 11183 and the tables in this annex, this annex is to take precedence.

The tables of this annex specify the level of support for each feature of the ACSE protocol, as required by the CMISE/ROSE International Standardized Profiles ISO/IEC ISP 11183.

The abbreviations as used in the headings of the tables are :

Base	which stands for Base Standards
Profile	which stands for this part of ISO/IEC ISP 11183.

The "Base" column reflects the level of support required for conformance to ISO 8650. Each entry in this column is chosen from the terms defined in 3.1. Notes, referred to by a number in parentheses associated with a support abbreviation, are provided at the bottom of some tables to state specific requirements or conditions. The definitions for the conditional statements *cn*, used in the "Base" column of this annex, are given in clause A.7.

The "Profile" column reflects the level of support required by this part of ISO/IEC ISP 11183. Each entry in this column is chosen from the terms defined in 3.2. Notes, referred to by a number in parentheses associated with a support abbreviation, are provided at the bottom of some tables to state specific requirements or conditions. The definitions for the conditional statements *cn*, used in the "Profile" column of this annex, are given in clause A.7.

NOTE - The following tables are derived from the DIS version of the base standard PICS proforma as referenced in clause 2 of this part of ISO/IEC ISP 11183. They will be revised to align with the IS version of this standard when it shall be ratified.

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A.2 Supported Functions and Initiator/Responder Capabilities

A.2.1 Supported Functions

Index	Protocol Mechanism	Base	Profile
1	Normal Mode	o	m
2	X.410 Mode	o	i
3	Rules for Extensibility	m	m
4	Supports operation of Session V2	o	m

A.2.2 Initiator/Responder Capability

Index	Capability	Base	Profile
1	Association-initiator	o	c(1)
2	Association-responder	o	c(1)

(1) At least one of these options is supported. It shall be consistent with the Presentation and Session options selected.

A.2.3 Functional Units

Index	Functional Units	Base	Profile
1	Kernel	m	m
2	Authentication	o	o

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A.3 Supported normal mode APDUs

This clause identifies the APDUs that have to be supported by implementations claiming conformance to this part of ISO/IEC ISP 11183.

Index	APDU	Sending		Receiving	
		Base	Profile	Base	Profile
1	A-associated-request (AARQ)	c1	c(1)	c2	m
2	A-associated-response (AARE)	c2	c(2)	c1	m
3	A-release-request (RLRQ)	o	m	m	m
4	A-release-response (RLRE)	m	m	c3	m
5	A-abort (ABRT)	c4	m	c4	m

(1) If the association-initiator capability is supported, then AARQ APDU is mandatory

(2) If the association-responder capability is supported, then AARE APDU is mandatory

A.4 Supported normal mode parameters

This clause identifies the parameters associated with APDUs that have to be supported by implementations claiming conformance to this part of ISO/IEC ISP 11183. Each APDU parameter is described by an ASN.1 data type. The data type for each parameter is defined in ISO 8650, or in ISO 8650/Amd.1 for the authentication parameters.

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A.4.1 A-associate-request APDU (AARQ)

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	Protocol Version	c5	c5	m(2)	m
2	Application Context Name	m	m	m	m
3	Calling AP Title	o	o(1)	m	m(1)
4	Calling AE Qualifier	o	o(1)	m	m(1)
5	Calling AP Invocation-identifier	o	o	m	m
6	Calling AE Invocation-identifier	o	o	m	m
7	Called AP Title	o	o(1)	m	m(1)
8	Called AE Qualifier	o	o(1)	m	m(1)
9	Called AP Invocation-identifier	o	o	m	m
10	Called AE Invocation-identifier	o	o	m	m
11	Implementation Information	o	i	m	m
12	Sender ACSE requirements	c6	c6	m	m(3)
13	Mechanism name	c6	c6	m	m(3)
14	Calling authentication value	c6	c6	m	m(3)
15	User Information	o	m(4)	m	m(4)

(1) Both forms should be static mandatory/dynamically optional for receiving, and static optional for sending. If an implementation can send it, then it must be able to support both forms for called AET, and either form for calling AET (see table A.5).

(2) The default value "version1" is defined in the abstract syntax definition of ACSE APDUs in ISO 8650. A sender may omit this parameter when this value is intended. A receiver shall interpret the omission of an explicit value as implying the default value.

(3) If the authentication FU is not supported, based on the extensibility rules, these tagged values shall be received and ignored. The "Mechanism name" and "Calling authentication value" fields shall only be present if the "Sender ACSE requirements" field includes the authentication FU. The "Mechanism name" field shall be present if "Calling authentication value" is of type ANY DEFINED BY. The different value types of the "Calling authentication value" field is provided in clause A.6.

(4) The "mandatory" support in the "Profile" column indicates that the ACSE implementation shall be able to parse or process all the fields in the EXTERNAL parameter except the "encoding" field. The processing of the "encoding" field is out of scope for the ACSE implementation.

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A.4.2 A-associate-response APDU (AARE)

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	Protocol Version	c5	c5	m(2)	m
2	Application Context Name	m	m	m	m
3	Responding AP Title	o	o(1)	m	m(1)
4	Responding AE Qualifier	o	o(1)	m	m(1)
5	Responding AP Invocation-identifier	o	o	m	m
6	Responding AE Invocation-identifier	o	o	m	m
7	Result	m	m	m	m
8	Result Source Diagnostic	m	m	m	m
9	Implementation Information	o	i	m	m
10	Responder ACSE requirements	c6	c6	m	m(3)
11	Mechanism name	c6	c6	m	m(3)
12	Responding authentication value	c6	c6	m	m(3)
13	User Information	o	m(4)	m	m(4)

(1) For AARE the conditions for the responding AET are the same as the conditions for the calling AET (see tables A.4.1 and A.5).

(2) The default value "version1" is defined in the abstract syntax definition of ACSE APDUs in ISO 8650. A sender may omit this parameter when this value is intended. A receiver shall interpret the omission of an explicit value as implying the default value.

(3) The "Mechanism name" and "Responding authentication value" fields shall only be present if the "Responder ACSE requirements" field includes the authentication FU. The "Mechanism name" field shall be present if "Responding authentication value" is of type ANY DEFINED BY. The different value types of the "Responding authentication value" field is provided in clause A.6.

(4) The "mandatory" support in the "Profile" column indicates that the ACSE implementation shall be able to parse or process all the fields in the EXTERNAL parameter except the "encoding" field. The processing of the "encoding" field is out of scope for the ACSE implementation.

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A.4.3 A-release-request APDU (RLRQ)

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	Reason	o	o	m	m
2	User Information	o	o	m	m(1)

(1) The "mandatory" support in the "Profile" column indicates that the ACSE implementation shall be able to parse or process all the fields in the EXTERNAL parameter except the "encoding" field. The processing of the "encoding" field is out of scope for the ACSE implementation.

A.4.4 A-release-response APDU (RLRE)

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	Reason	o	o	m	m
2	User Information	o	o	m	m(1)

(1) The "mandatory" support in the "Profile" column indicates that the ACSE implementation shall be able to parse or process all the fields in the EXTERNAL parameter except the "encoding" field. The processing of the "encoding" field is out of scope for the ACSE implementation.

A.4.5 Abort APDU (ABRT)

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	Abort Source	m	m	m	m
2	Abort diagnostic	c6	c6	c6	c6
3	User Information	o	m(1)	m	m(1)

(1) The "mandatory" support in the "Profile" column indicates that the ACSE implementation shall be able to parse or process all the fields in the EXTERNAL parameter except the "encoding" field. The processing of the "encoding" field is out of scope for the ACSE implementation.

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A.5 AE Title syntax name forms

The specific requirements relating to the AE Title name forms are specified in the note (1) of the tables A.4.1 and A.4.2.

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	Form 1 (Distinguished Name)	o	m	m	m
2	Form 2 (Object Id & Integer)	o	m	m	m

A.6 Authentication value forms

The following value choices apply to the "Calling authentication value" and "Responding authentication value" fields contained respectively in AARQ and AARE APDUs.

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	GraphicString	c7	c7	c6	c6
2	BIT STRING	c7	c7	c6	c6
3	EXTERNAL	c7	c7(1)	c6	c6(1)
4	ANY DEFINED BY	c7	c7(2)	c6	c6(2)

(1) The ACSE implementation shall be able to parse or process all the fields in the EXTERNAL parameter except the "encoding" field. The processing of the "encoding" field is out of scope for the ACSE implementation.

(2) If "...authentication-value" field is of type ANY DEFINED BY, then the "mechanism-name" field must be present.

A.7 Meaning of Conditional Statements

This clause defines the conditional statements used in annex A.

c1 : if initiator capability supported then m else -
c2 : if responder capability supported then m else -
c3 : if sending RLRQ is supported then m else -
c4 : if operation of Session version 2 supported then m else -
c5 : if ACSE version 2 or above is supported then m else o
c6 : if authentication supported then m else -
c7 : if authentication supported then o else -

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Annex B

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ISPICS Requirements List of Presentation, for the use by ROSE and CMISE

B.1 General

In the event of a discrepancy becoming apparent in the body of this part of ISO/IEC ISP 11183 and the tables in this annex, this annex is to take precedence.

The tables of this annex specify the level of support for each feature of the Presentation protocol, as required by the CMISE/ROSE International Standardized Profiles ISO/IEC ISP 11183.

The abbreviations as used in the headings of the tables are :

Base	which stands for Base Standards
Profile	which stands for this part of ISO/IEC ISP 11183.

The "Base" column reflects the level of support required for conformance to ISO 8823. Each entry in this column is chosen from the terms defined in 3.1. The definitions for the conditional statements *cn*, used in the "Base" column of this annex, are given in clause B.6.

The "Profile" column reflects the level of support required by this part of ISO/IEC ISP 11183. Each entry in this column is chosen from the terms defined in 3.2. Notes, referred to by a number in parentheses associated with a support abbreviation, are provided at the bottom of some tables to state specific requirements or conditions.

NOTE - The following tables are derived from the DIS version of the base standard PICS proforma as referenced in clause 2 of this part of ISO/IEC ISP 11183. They will be revised to align with the IS version of this standard when it shall be ratified.

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B.2 Capabilities, Protocol Mechanisms and Functional Units

B.2.1 Initiator/Responder Capabilities

Index	Capability	Base	Profile
1	Initiator	o	c(1)
2	Responder	o	c(1)

(1) At least one of these options is supported. It shall be consistent with the ACSE and Session options selected.

B.2.2 Protocol Mechanisms

Index	Mode	Base	Profile
1	X.410 (1984)	o	i
2	Normal	o	m

B.2.3 Functional Units

Index	Functional Unit	Base	Profile
1	Kernel	m	m
2	Presentation Context Management	o	i
3	Presentation Context Restoration	c1	i

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B.3 Supported PPDUs and equivalents

This clause identifies the PPDUs that have to be supported by implementations claiming conformance to this part of ISO/IEC ISP 11183 and their relationship with functional units.

Where a functional unit is not required by this part of ISO/IEC ISP 11183 the associated table listing PPDUs is not present.

B.3.1 Kernel Functional Unit

Index	PPDU	Sending		Receiving	
		Base	Profile	Base	Profile
1	CP	c2	m	c3	m
2	CPtype		m		m
3	CPCtype		i(1)		i(1)
4	CPA	c3	m	c2	m
5	CPR	c3	m	c2	m
6	ARP	m	m	m	m
7	ARU	m	m	m	m
8	TD	m	m	m	m

(1) Out of the scope, because the possibility of using a number of different transfer syntaxes for the same presentation data values is out of scope of this part of ISO/IEC ISP 11183.

B.3.2 Presentation Context Management Functional Unit

Out of the scope of this part of ISO/IEC ISP 11183.

B.3.3 Presentation Context Restoration Functional Unit

Out of the scope of this part of ISO/IEC ISP 11183.

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B.4 Supported Parameters

This clause identifies the parameters associated with PPDUs that have to be supported by implementations claiming conformance to this part of ISO/IEC ISP 11183. Each PPDU parameter is described by an ASN.1 data type. The data type for each parameter is defined in ISO 8823.

The PPDUs not required by this part of ISO/IEC ISP 11183 are not listed.

B.4.1 Connect Presentation (CP) PPDU

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	Calling Presentation Selector	o	o(1)	m	m(1)
2	Called Presentation Selector	o	m(1)	m	m(1)
3	Mode Selector	m	m	m	m
4	Presentation Context Definition List	o	m	m	m
5	Default Context Name	o	i(2)	m	m(2)
6	Protocol Version	o	m(5)	m	m(5)
7	Presentation Requirements	o	i(3)	m	m(3)
8	User Session Requirements	o	i(4)	m	m(4)
9	User Data (AARQ APDU)	o	m	m	m

(1) Restricted to 4 octets.

(2) Because this part of ISO/IEC ISP 11183 requires at least two abstract syntaxes, the Default Context Name parameter does not need to be sent. (See ISO 8822, 3.4.10; ISO 8823, 6.1.2.a and b, 8.4.1.2, 8.4.1.3, 8.4.2.2.a, 8.4.2.3).

(3) Two functional units, context management and context restoration, are out of the scope of this part of ISO/IEC ISP 11183.

(4) Given the usage restriction and the Presentation Requirements, this parameter shall never apply.

(5) The default value "version1" is defined in the structure of SS-user data definition in 8.2 of ISO 8823. A sender may omit this parameter when this value is intended. A receiver shall interpret the omission of an explicit value as implying the default value.

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B.4.2 Connect Presentation Accept (CPA) PPDU

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	Responding Presentation Selector	o	o(1)	m	m(1)
2	Mode Selector	m	m	m	m
3	Presentation Context Definition Result List	o	m	m	m
4	Protocol Version	o	m(4)	m	m(4)
5	Presentation Requirements	o	i(2)	m	m(2)
6	User Session Requirements	o	i(3)	m	m(3)
7	User Data (AARE APDU)	o	m	m	m

(1) Restricted to 4 octets.

(2) Two functional units, context management and context restoration, are out of scope of this part of ISO/IEC ISP 11183.

(3) Given the usage restriction and the Presentation Requirements, this parameter shall never apply.

(4) The default value "version1" is defined in the structure of SS-user data definition in 8.2 of ISO 8823. A sender may omit this parameter when this value is intended. A receiver shall interpret the omission of an explicit value as implying the default value.

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B.4.3 Connect Presentation Reject (CPR) PPDU

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	Responding Presentation Selector	o	o(1)	m	m(1)
2	Presentation Context Definition Result List	o	m(2)	m	m(2)
3	Protocol Version	o	m(5)	m	m(5)
4	Default Context Result	o	i	m	m(4)
5	Provider Reason	o	m	m	m
6	User Data (AARQ APDU)	o	m(3)	m	m(3)

(1) Restricted to 4 octets

(2) Is required if the PCDL is present in the corresponding CP PPDU.

(3) Is not present if the connection is rejected by the Presentation service provider.

(4) Because this part of ISO/IEC ISP 11183 requires at least two abstract syntaxes, Default Context Result does not need to be sent. (See ISO 8822, 3.4.10; ISO 8823, 6.1.2.a and b, 8.4.1.2, 8.4.1.3, 8.4.2.2.a, 8.4.2.3).

(5) The default value "version1" is defined in the structure of SS-user data definition in 8.2 of ISO 8823. A sender may omit this parameter when this value is intended. A receiver shall interpret the omission of an explicit value as implying the default value.

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B.4.4 Abnormal Release User (ARU) PPDU

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	Presentation Context Identifier List	o	m(1)	m	m(1)
2	User Data (ABRT APDU)	o	m	m	m

(1) Mandatory when User Data is present in ARU PPDU.

B.4.5 Abnormal Release Provider (ARP) PPDU

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	Abort reason	o	m	m	m
2	Event Identifier	o	m(1)	m	m(1)

(1) Mandatory if "Abort reason" parameter is set with the following values : 2, 3, 4, 5, 6.

B.4.6 Alter Context (AC) PPDU

Out of the scope of this part of ISO/IEC ISP 11183.

B.4.7 Alter Context Acknowledge (ACA) PPDU

Out of the scope of this part of ISO/IEC ISP 11183.

B.4.8 Presentation Data (TD) PPDU

Index	Parameter	Sending		Receiving	
		Base	Profile	Base	Profile
1	User Data	o	m	m	m

B.4.9 Presentation Typed Data (TTD) PPDU

Out of the scope of this part of ISO/IEC ISP 11183.

B.4.10 Expedited Data (TE) PPDU

Out of the scope of this part of ISO/IEC ISP 11183.

B.4.11 Capability Data (TC) PPDU

Out of the scope of this part of ISO/IEC ISP 11183.

B.4.12 Capability Data Acknowledge (TCC) PPDU

Out of the scope of this part of ISO/IEC ISP 11183.

B.4.13 Resynchronize (RS) PPDU

Out of the scope of this part of ISO/IEC ISP 11183.

B.4.14 Resynchronize Acknowledge (RSA) PPDU

Out of the scope of this part of ISO/IEC ISP 11183.

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B.5 Support of Syntaxes

B.5.1 Transfer Syntaxes Supported

This section specifies which transfer syntax the implementation has to support in order to claim conformance to this part of ISO/IEC ISP 11183. For each other transfer syntax supported, a reference to the definition of the transfer syntax is given.

Index	Type	Detail	Support		Reference to Definition
			Base	Profile	
1	Object identifier	joint-iso-ccitt asn(1) basic-encoding(1)	m	m	ISO/IEC 8825

B.5.2 Abstract Syntaxes Supported

This section shall be used to indicate which abstract syntaxes the implementation has to support in order to claim conformance to this part of ISO/IEC ISP 11183. The other abstract syntaxes needed by the implementations shall be identified in additional entries.

Index	Type	Detail	Support
			Profile
1	Object identifier	joint-iso-ccitt association-control(2) abstract-syntax(1) apdus(o) version1 (1)	m
2	Object identifier	joint-iso-ccitt ms(9) cmip(1) cmip-pci(1) abstractSyntax(4)	c(1)
			(2)

(1) Abstract syntax required if the application context includes CMISE as one of the ASEs.

(2) Other abstract syntaxes may be identified to comply with the EXTERNAL data types specified in the CMIP abstract syntax and ACSE abstract syntax.

B.6 Meaning of Conditional Statements

Only the conditional statements used in this annex are specified in the following list.

c1 : if context management FU is supported then o else -
c2 : if initiator capability is supported then m else -
c3 : if responder capability is supported then m else -

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Annex C

(normative)

ISPICS Requirements List of Session, for the use by ROSE and CMISE

C.1 General

In the event of a discrepancy becoming apparent in the body of this part of ISO/IEC ISP 11183 and the tables in this annex, this annex is to take precedence.

The tables of this annex specify the level of support for each feature of the Session protocol, as required by the CMISE/ROSE International Standardized Profiles ISO/IEC ISP 11183.

The abbreviations as used in the headings of the tables are :

Base	which stands for Base Standards
Profile	which stands for this part of ISO/IEC ISP 11183.

The "Base" column reflects the level of support required for conformance to ISO 8327. Each entry in this column is chosen from the terms defined in 3.1. Notes, referred to by a number in parentheses associated with a support abbreviation, are provided at the bottom of some tables to state specific requirements or conditions. The definitions for the conditional statements *cn*, used in the "Base" column of this annex, are given in clause C.5.

The "Profile" column reflects the level of support required by this part of ISO/IEC ISP 11183. Each entry in this column is chosen from the terms defined in 3.2. Notes, referred to by a number in parentheses associated with a support abbreviation, are provided at the bottom of some tables to state specific requirements or conditions.

NOTE - The following tables are derived from the CD version of the base standard PICS proforma as referenced in clause 2 of this part of ISO/IEC ISP 11183. They will be revised to align with the IS version of this standard when it shall be ratified.

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C.2 Supported Functions, Protocol Mechanisms and Initiator/Responder Capabilities

C.2.1 Supported Functions

Index	Functional Unit	Code	Base	Profile
1	Kernel	K	m	m
2	Negotiated Release	NR	o	i
3	Half Duplex	HD	o.1	i
4	Duplex	FD	o.1	m
5	Expedited Data	EX	o	i
6	Typed Data	TD	o	i
7	Capability Data Exchange	CD	c1	i
8	Minor Synchronize	SY	o.2	i
9	Symmetric Synchronize	SS	o.2	i
10	Major Synchronize	MA	o	i
11	Resynchronize	RESYN	o	i
12	Exceptions	EXCEP	c2	i
13	Activity Management	ACT	o	i

o.1 At least one of the functional units Duplex and Half Duplex shall be implemented.
o.2 Minor Synchronize and Symmetric Synchronize are mutually exclusive.

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C.2.2 Protocol Mechanisms

Index	Mode	Base	Profile
1	Use of transport expedited data (Extended control Quality of Service)	o	i
2	Reuse of transport connection (sending)	o	i
3	Reuse of transport connection (receiving)	o	i
4	Basic concatenation	m	m
5	Extended concatenation (sending)	o	i
6	Extended concatenation (receiving)	o	i
7	Segmenting (sending)	o	i
8	Segmenting (receiving)	o	i
9	Segmenting for unlimited user data (sending)	o	i
10	Segmenting for unlimited user data (receiving)	o	i

C.2.3 Initiator/Responder Capabilities

Index	Capability	Base	Profile
1	Initiator	o	c(1)
2	Responder	o	c(1)

(1) At least one of these options is supported. It shall be consistent with the ACSE and Presentation options selection.

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C.3 Supported SPDUs

This clause defines the SPDUs for which conformance is claimed, and their relationship with functional units (FUs).

C.3.1 Kernel Functional Unit

C.3.1.1 Sending/Receiving by Initiator

Index	SPDU	Sending		Receiving	
		Base	Profile	Base	Profile
1	Connect (CN)	m	m	-	-
2	Overflow Accept (OA)	-	-	c3	i
3	Connect Data Overflow (CDO)	c3	i	-	-
4	Accept (AC)	-	-	m	m
5	Refuse (RF)	-	-	m	m
6	Finish (FN)	o	m	o	m
7	Disconnect (DN)	o	m	o	m
8	Abort (AB)	m	m	m	m
9	Abort Accept (AA)	o	i	o	i
10	Data Transfer (DT)	o	m	o	m
11	Prepare (PR)	c4(1)	i	c4(1)	i

(1) The conditional statement c4, such as specified in the Session PICS, ISO 8327-2, does not fit in the PR SPDU support. The conditional statement could be: "If protocol-version-2 AND Abort SS-user data exceeds 9 octets AND transport expedited flow available".

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C.3.1.2 Sending/Receiving by Responder

Index	SPDU	Sending		Receiving	
		Base	Profile	Base	Profile
1	Connect (CN)	-	-	m	m
2	Overflow Accept (OA)	c3	i	-	-
3	Connect Data Overflow (CDO)	-	-	c3	i
4	Accept (AC)	m	m	-	-
5	Refuse (RF)	m	m	-	-
6	Finish (FN)	o	m	m	m
7	Disconnect (DN)	o	m	o	m
8	Abort (AB)	m	m	m	m
9	Abort Accept (AA)	o	i	o	i
10	Data Transfer (DT)	o	m	m	m
11	Prepare (PR)	c4(1)	i	c4(1)	i

(1) The conditional statement c4, such as specified in the Session PICS, ISO 8327-2, does not fit in the PR SPDU support. The conditional statement could be: "If protocol-version-2 AND Abort SS-user data exceeds 9 octets AND transport expedited flow available".

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C.3.2 Negotiated Release Functional Unit Out of the scope of this part of ISO/IEC ISP 11183.

C.3.3 Half Duplex Functional Unit Out of the scope of this part of ISO/IEC ISP 11183.

C.3.4 Duplex Functional Unit

No additional SPDUs (this clause is present for completeness).

C.3.5 Expedited Data Functional Unit Out of the scope of this part of ISO/IEC ISP 11183.

C.3.6 Typed Data Functional Unit Out of the scope of this part of ISO/IEC ISP 11183.

C.3.7 Capability Data Functional Unit Out of the scope of this part of ISO/IEC ISP 11183.

C.3.8 Minor Synchronize Functional Unit Out of the scope of this part of ISO/IEC ISP 11183.

C.3.9 Symmetric Synchronize Functional Unit
Out of the scope of this part of ISO/IEC ISP 11183.

C.3.10 Major Synchronize Functional Unit Out of the scope of this part of ISO/IEC ISP 11183.

C.3.11 Resynchronize Functional Unit Out of the scope of this part of ISO/IEC ISP 11183.

C.3.12 Exceptions Functional Unit Out of the scope of this part of ISO/IEC ISP 11183.

C.3.13 Activity Management Functional Unit Out of the scope of this part of ISO/IEC ISP 11183.

C.4 Supported Parameters

This clause identifies the parameters associated with SPDUs that have to be supported by implementations claiming conformance to this part of ISO/IEC ISP 11183.

Each SPDU parameter is described by a data type. The data type for each parameter is defined in ISO 8327.

The SPDUs not required by this part of ISO/IEC ISP 11183 are not listed.

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C.4.1 Connect (CN) SPDU

Index	Item	Sending		Receiving	
		Base	Profile	Base	Profile
	PGI "Connection Identifier"				
1	PGI default (absent)	o	i	m	m(2)
2	PGI default (empty)	o	i	m	m(2)
3	Calling SS-user Reference	o	i	m	m(2)
4	Common Reference	o	i	m	m(2)
5	Additional Reference Information	o	i	m	m(2)
	PGI "Connect/Accept Item"				
6	PGI default (absent)	o	i	m	m(3)
7	PGI default (empty)	o	i	m	m(3)
8	PGI (not empty)	o	m	m	m
9	Protocol Options	c16	m	m	m
10	TSDU-maximum-size	o	i	m	m(2)
11	Version Number	c16	m(1)	m	m(1)
12	Initial Serial Number	o	i	m	m(2)
13	Token Setting Item	o	i	m	m(2)
14	Second Initial Serial Number	c17	i	c18	i
	Single Items				
15	Session User Requirements	o	m	m	m
16	Calling Session Selector	o	o	m	m
17	Called Session Selector	o	m	m	m
18	Data Overflow (V2)	c3	i	c19	i
19	PGI "User Data"	o	m	m	m
20	PGI "Extended User Data" (V2)	c3	m	c19	m

(1) The version 2 shall be required.
(2) The implementation shall be capable of receiving this parameter but may ignore it.
(3) Only the case of "PGI"(not empty)" should be received in the scope of this ISP part.

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C.4.2 Overflow Accept (OA) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.3 Connect Data Overflow (CDO) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

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C.4.4 Accept (AC) SPDU

Index	Item	Sending		Receiving	
		Base	Profile	Base	Profile
	PGI "Connection Identifier"				
1	PGI default (absent)	o	i	m	m
2	PGI default (empty)	o	i	m	m
3	Called SS-user Reference	o	i	m	m
4	Common Reference	o	i	m	m
5	Additional Reference Information	o	i	m	m
	PGI "Connect/Accept Item"				
6	PGI default (absent)	o	i	m	m
7	PGI default (empty)	o	i	m	m
8	PGI (not empty)	o	m	m	m
9	Protocol Options	c22	m	m	m
10	TSDU-maximum-size	o	i	m	m(2)
11	Version Number	c22	m(1)	m	m(1)
12	Initial Serial Number	o	i	m	m(2)
13	Token Setting Item	o	i	m	m(2)
14	Second Initial Serial Number	o	i	o	i
	Single Items				
15	Token Item	o	i	m	m(2)
16	Session User Requirements	o	m	m	m
17	Calling Session Selector	o	o	o(3)	m
18	Responding Session Selector	o	o	m	m
19	PGI "User Data"	o	m	m	m
20	Enclosure Item (V2)	c24	i	c25	i

(1) The version 2 shall be selected.
(2) The implementation shall be capable of receiving this parameter but may ignore it.
(3) In the Session PICS, ISO 8327-2, the support 'o' of this parameter is thought to be in error. It should be 'm'.

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C.4.5 Refuse (RF) SPDU

Index	Item	Sending		Receiving	
		Base	Profile	Base	Profile
	PGI "Connection Identifier"				
1	PGI default (empty)	o	i	m	m
2	PGI (not empty)	o	i	m	m
3	Called SS-User Reference	o	i	m	m
4	Common Reference	o	i	m	m
5	Additional Reference Info	o	i	m	m
	Single Items				
6	Transport Disconnect	o	i	m	m(2)
7	Session User Requirements	o	c(1)	m	c(1)
8	Version Number	o	m	m	m
9	Reason Code	o	m	m	m
10	Enclosure Item (V2)	c24	i	c25	i

(1) Shall only be present if the reason code value = 2.

(2) The implementation shall be capable of receiving this parameter but may ignore it.

C.4.6 Finish (FN) SPDU

Index	Single Items	Sending		Receiving	
		Base	Profile	Base	Profile
1	Transport Disconnect	o	i	m	m(1)
2	PGI "User Data"	o	m	m	m
3	Enclosure Item (V2)	c24	i	c25	i

(1) The implementation shall be capable of receiving this parameter but may ignore it.

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C.4.7 Disconnect (DN) SPDU

Index	Single Items	Sending		Receiving	
		Base	Profile	Base	Profile
1	PGI "User Data"	o	m	m	m
2	Enclosure Item (V2)	c24	i	c25	i

C.4.8 Not Finished (NF) SPDU

Out of the scope of this part of ISO/IEC ISP 11183.

C.4.9 Abort (AB) SPDU

Index	Single Items	Sending		Receiving	
		Base	Profile	Base	Profile
1	Transport Disconnect	m	m	m	m
2	Reflect Parameter Values	o	c(1)	m	m
3	PGI "User Data"	o	m	m	m
4	Enclosure Item (V2)	c24	i	c25	i

(1) Only sent if Transport disconnect = protocol error.

C.4.10 Abort Accept (AA) SPDU

Out of the scope of this part of ISO/IEC ISP 11183.

C.4.11 Data Transfer (DT) SPDU

Index	Single Items	Sending		Receiving	
		Base	Profile	Base	Profile
1	User Information Field	o	m	m	m
2	Enclosure Item	c24	i	c25	i

C.4.12 Expedited Data (EX) SPDU

Out of the scope of this part of ISO/IEC ISP 11183.

C.4.13 Typed Data (TD) SPDU

Out of the scope of this part of ISO/IEC ISP 11183.

C.4.14 Capability Data (CD) SPDU

Out of the scope of this part of ISO/IEC ISP 11183.

C.4.15 Capability Data Ack (CDA) SPDU

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C.4.16 Give Tokens (GT) SPDU

Index	Single Items	Sending		Receiving	
		Base	Profile	Base	Profile
1	Token Item	c(2)	i	c(2)	i(1)
2	Enclosure Item	c24	i	c25	i(1)
3	PGI "User Data"	c26	i	c27	i(1)

(1) If the implementation has negotiated down to "Kernel" and "Full duplex", then this parameter shall not be present.

(2) The current version of the Session PICS, ISO 8327-2, has the value 'm' in the receiving column and 'o' in the sending column. However, the base standard does not allow the Token item to be present when the Kernel and Full duplex FUs are negotiated.

C.4.17 Please Tokens (PT) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.18 Minor Sync Point (MIP) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.19 Minor Sync Ack (MIA) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.20 Major Sync Point (MAP) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.21 Major Sync Ack (MAA) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.22 Resynchronize (RS) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.23 Resynchronize Ack (RA) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.24 Prepare (PR) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.25 Exception Report (ER) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.26 Exception Data (ED) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.27 Give Tokens Confirm (GTC) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.28 Give Tokens Ack (GTA) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.29 Activity Start (AS) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.30 Activity Resume (AR) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.31 Activity Interrupt (AI) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.32 Activity Interrupt Ack (AIA) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.33 Activity Discard (AD) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

C.4.34 Activity Discard Ack (ADA) SPDU Out of the scope of this part of ISO/IEC ISP 11183.

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C.4.35 Activity End (AE) SPDU

Out of the scope of this part of ISO/IEC ISP 11183.

C.4.36 Activity End Ack (AEA) SPDU

Out of the scope of this part of ISO/IEC ISP 11183.

C.5 Meaning of Conditional Statements

Only the conditional statements used in this annex are specified in the following list. They are simplified to reflect the specific requirements of this profile.

c1 : If activity management supported then 'o' else '-'
c2 : If half duplex supported then 'o' else '-'
c3 : If version 1 only supported then '-' else 'o'
c4 : If (not protocol-version-2) OR maximum-size-SS-user-data (S-connect) < = 10240) then '-' else 'm'

NOTE - The conditional statement c4, such as specified in the Session PICS, ISO 8327-2, and as above-mentioned, does not fit in the PR SPDU support. The conditional statement could be: "If protocol-version-2 AND Abort SS-user data exceeds 9 octets AND transport expedited flow available then 'm' else '-'".

c5 :
c6 :
c7 :
c8 :
c9 :
c10 :
c11 :
c12 :
c13 :
c14 :
c15 :
c16 : If C.4.1/8(a) then 'm' else '-'
c17 : If symmetric synchronize supported then 'o' else '-'
c18 : If symmetric synchronize supported then 'm' else '-'
c19 : If version 1 only supported then '-' else 'm'
c20 :
c21 :
c22 : If C.4.4/8(a) then 'm' else '-'
c24 : If session version 2 and segmenting on sending then 'o' else '-'
c25 : If session version 2 and segmenting on receiving then 'm' else '-'
c26 : If session version 2 or above then 'o' else '-'
c27 : If session version 2 or above then 'm' else '-'

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