INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 11183-2

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

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

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

Partie 2: CMISE/ROSE pour AOM12 — Gestion avancée de communication

Reference number
ISO/IEC ISP 11183-2:1992(E)

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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 11183-2 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*

Annex A forms 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 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: NIST Workshop for implementors of OSI (NIST OIW), the European Workshop for Open Systems (EWOS) and the OSI Asia-Oceania Workshop (AOW). This ISP part is harmonized among these three Workshops and it was finally ratified by the Workshops' plenary assemblies.

This part of ISO/IEC ISP 11183 contains one normative annex : annex A, ISPICS Requirements List for AOM12.

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

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

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

1 Scope

1.1 General

This part of ISO/IEC ISP 11183 specifies how the OSI Common Management Information Service Element (CMISE) combined with the OSI Remote Operation Service Element (ROSE) shall be used to provide the complete set of operation and notification services to the CMISE-service-users of two end systems. It specifies the CMIP/ROSE protocol features for the definition of the Enhanced Management Communications profile, AOM12. This part of ISO/IEC ISP 11183 can be used together with the part 1 and any connection-mode Transport profile to specify the complete communication requirements for systems management.

This part of ISO/IEC ISP 11183 defines the support level of all the OSI management communication features needed by implementations. It specifies general purpose management communication capabilities by requiring the support of all the CMIP functional units except the extended services functional unit. Other profiles may be defined that provide a subset of capabilities specified here.

The support of the complete set of operation and notification services, and of the corresponding protocol elements does not imply that all these features shall be used in all instances of communications. The selection of the features depends on the needs and dynamic requirements of the CMISE-service-users who may choose between :

- application entity roles,
- functional units,
- operation/notification services,
- optional parameters.

It only implies that a conforming implementation of the CMISE/ROSE services provider does not restrict the capabilities of the CMISE-service-users and complies with the static CMIP requirements specified in ISO/IEC 9596-1 and ISO/IEC 9596-2.

NOTES

1 The operations and notifications relate to managed objects. The specification and the support of these managed objects are outside the scope of the profile AOM12.

2 This part of ISO/IEC ISP 11183 is based on ISO/IEC 9596-2, (SC21 N-7036, 2 June 1992).

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1.2 CMIP/ROSE PDUs support

An implementation conforming to the profile AOM12 shall be able to support the following PDUs:

ROIV-m-Action
ROIV-m-Action-Confirmed
ROIV-m-Create
ROIV-m-Delete
ROIV-m-Get
ROIV-m-Set
ROIV-m-Set-Confirmed
ROIV-m-Cancel-Get
ROIV-m-Event Report
ROIV-m-Event Report-Confirmed

ROIV-m-Linked-Reply-Action
ROIV-m-Linked-Reply-Delete
ROIV-m-Linked-Reply-Get
ROIV-m-Linked-Reply-Set

RORS-m-Action-Confirmed
RORS-m-Create
RORS-m-Delete
RORS-m-Get
RORS-m-Set-Confirmed
RORS-m-Cancel-Get
RORS-m-Event Report-Confirmed

RORJ

ROER-accessDenied
ROER-classInstanceConflict
ROER-complexityLimitation
ROER-duplicateManagedObjectInstance
ROER-getListError
ROER-invalidArgumentValue
ROER-invalidAttributeValue
ROER-invalidFilter
ROER-invalidObjectInstance
ROER-invalidScope
ROER-missingAttributeValue
ROER-mistypedOperation
ROER-noSuchAction
ROER-noSuchArgument
ROER-noSuchAttribute
ROER-noSuchEventType
ROER-noSuchInvokeId
ROER-noSuchObjectClass
ROER-noSuchObjectInstance
ROER-noSuchReferenceObject
ROER-operationCancelled
ROER-processingFailure
ROER-setListError
ROER-syncNotSupported

1.3 CMIP functional units

The CMIP functional units are defined in ISO/IEC 9595 and ISO/IEC 9596-1. A conforming implementation shall be able to support all of the CMIP functional units except the extended service functional unit as indicated by the table A.7 in annex A of this part of ISO/IEC ISP 11183. However, on an individual association, if requested or accepted by the CMISE-service-user, an implementation shall be able to support the use of any subset of the CMIP functional units that includes the kernel functional unit, with respect to the conditions specified in ISO/IEC 9595. When negotiating CMIP functional units, only those functional units for which both CMISE-service-users indicate support shall be used.

1.4 Position within the Taxonomy

This part of ISO/IEC ISP 11183 is the second part of a multipart ISP for OSI Management, which consists of the following parts :

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.

The profile which is defined in the part 2 of this ISP is identified in ISO/IEC TR 10000-2 as:
AOM1n - OSI Management - Management Communications -
Part 2: CMISE/ROSE for AOM12 - Enhanced Management Communications.

It may be combined with any A-Profiles AOM2n, Management Functions.
It may be combined with any T-Profiles (see ISO/IEC TR 10000) specifying the OSI connection-mode transport service.

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1.5 Scenario

The general model used in the profile AOM12 is the complementary communications interactions between CMISE-service-users within two end Management Information systems as shown in figure below.

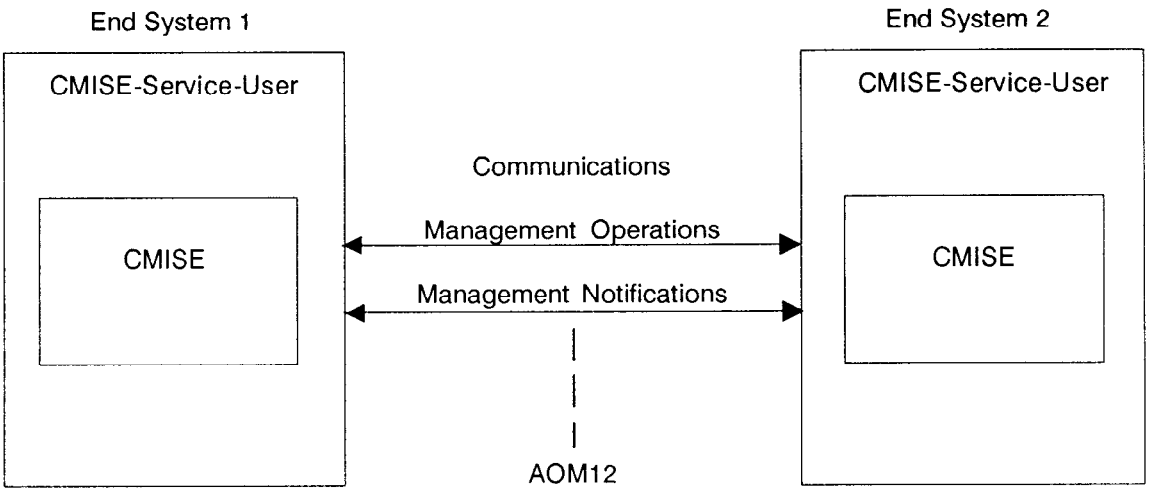

Figure 1 - Communications support for OSI management interactions between two CMISE-service-users

The specifications of the profile AOM12 apply only on the two lines between the end system boxes of the figure.

The common functions required from the supporting protocol stack of ACSE, Presentation and Session are specified in the part 1 of the multipart ISP AOM1n (see also the stack of standards in table 1).

Table 1 - Profile supporting stack

Application Layer	ISO 9595, 9596-1 ISO 9072-1, 9072-2 ISO 8649, 8650 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.

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ISO 7498:1984, *Information processing systems - Open Systems Interconnection - Basic Reference Model.* | CCITT Recommendation X.200:1988, *Reference Model of Open Systems Interconnection for CCITT applications.*

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 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 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 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 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/IEC 8824:1990, *Information technology - Open Systems Interconnection - Specification of Abstract Syntax Notation One (ASN.1).* | CCITT Recommendation X.208:1988, *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.*

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.*

ISO/IEC 9596-2:1992, *Information technology - Open Systems Interconnection - Common management information protocol - Part 2: Protocol implementation conformance statement (PICS) proforma.* | CCITT Recommendation X.712:1992,*Common management information protocol:Protocol implementation conformance statement (PICS) proforma.*

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

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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 and conventions

For the purpose of this part of ISO/IEC ISP 11183, the following definitions apply.

3.1 Base standard

3.1.1 Definitions

For the purpose of this part of ISO/IEC ISP 11183, the definitions given in the normative references listed in clause 2 apply. Among those the following definitions particularly apply.

CMISE-service-user	:	see ISO/IEC 9595
Initiator	:	see ISO/IEC 9072-1
Invoker	:	see ISO/IEC 9072-1
Notification	:	see ISO/IEC 10040
Operation	:	see ISO/IEC 10040
Performer	:	see ISO/IEC 9072-1
Responder	:	see ISO/IEC 9072-1

3.1.2 PICS definitions and conventions

The notations used in the "Base Standard" column of the annex A of this part of ISO/IEC ISP 11183 are derived from the PICS proforma notations, specified in ISO/IEC 9596-2, such as follows:

m — mandatory function or feature or parameter specified in Base Standards text or in ASN.1 abstract syntax definitions.

o — optional function or feature or parameter specified in Base Standards text or in ASN.1 abstract syntax definitions.

o.1 — stands for "support of at least one of the choices is required". "o.1" replaces the notations "o.*N*" of the PICS, where *N* is an integer value from 1 up to 128.

c*n* — (*n* is an integer) stands for conditional parameters whose support depends on a predicate expression such as : c1 up to c15, and whose definitions are recalled in the clause 3.3.

p — stands for a partial support permitted.

x — prohibited feature or parameter.

i — stands for "out of the scope of this part of ISO/IEC ISP 11183".
This means that, for the corresponding element,
- implementations may use it outside the scope of this ISP part,
- conformance tests shall not be provided for it,
- implementations may conform to other profiles where it is required,
- no requirements are placed on either transmitter or receiver to support it,
- receiver actions are unspecified when present.

\- — (dash) for not applicable feature or parameter.

The notations set in the "Base Standard" column reflect the static conformance requirements.

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3.2 Profile

The following subclauses specify the notation used for support requirements of Functional Units (FUs), PDUs associated with CMIS services and parameters within PDUs, in the "Profile" column of the annex A of this part of ISO/IEC ISP 11183.

3.2.1 Profile support requirement definitions

The Functional Units table A.7 of the annex A of this part of ISO/IEC ISP 11183 only specifies the static requirement of each additional functional unit in the "Profile" column.

The CMIP PDU tables relative to the support of PDUs associated with each CMIS service, (see tables A.15 up to A.28 in annex A), only specify the static requirement of each PDU in the "Profile" column.

The static support of the PDUs in the profile AOM12 is always stated as "mandatory to be implemented", because it is mandatory when the FU is required.

The support notation used in the "Profile" column of the annex A, for each PDU parameter (see tables A.29 up to A.120), results from the association of :

a) the implementation static capabilities requirement, such as derived from the base standard, and
b) the implementation dynamic behaviour requirement, depending on the possible instanciations.

Such a notation complies with the recommendations provided in the annex C of ISO/IEC TR 10000-1.

3.2.2 ISPICS requirements list conventions

In order to express these compound requirements a two character notation is defined such as :

the first letter corresponds to the static capabilities requirement and states whether the element
must be
or may be } implemented
or must not be
the second letter corresponds to the dynamic behaviour requirement and states whether the element
must be
or may be } present in an instance of the PDU
or must not be

As a general rule, the static capabilities defined as optional in the Base Standard are made mandatory on the sending PDU tables of the annex A to maximize the usability of the profile AOM12.

The two character combinations used in the "Profile" column of the annex A of this part of ISO/IEC ISP 11183, with the respective requirements, static and dynamic, for the sending and the receiving sides, are specified as follows:

mm Sending
Static: The implementation must be able to send the parameter
Dynamic: The parameter must always be sent in each PDU instance
Receiving
Static: The implementation must be able to receive the parameter
Dynamic: The parameter must always be present in each PDU instance

mo Sending
Static: The implementation must be able to send the parameter
Dynamic: The parameter may optionally be sent in a given PDU instance
Receiving
Static: The implementation must be able to receive the parameter
Dynamic: The parameter may optionally be present in a given PDU instance

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mc Sending
- Static: The implementation must be able to send the parameter
- Dynamic: The parameter may conditionally be sent in a given PDU instance

Receiving
- Static: The implementation must be able to receive the parameter
- Dynamic: The parameter may conditionally be present in a given PDU instance

mp Sending
- Static: The implementation must be able to send the parameter
- Dynamic: The parameter may be partially supported in a given PDU instance

Receiving
- Static: The implementation must be able to receive the parameter
- Dynamic: The parameter may be partially supported in a given PDU instance

oo Sending
- Static: The implementation may optionally be able to send the parameter
- Dynamic: The parameter may optionally be sent in a given PDU instance

Receiving
- Static: The implementation may optionally be able to receive the parameter
- Dynamic: The parameter may optionally be present in a given PDU instance

oc Sending
- Static: The implementation may optionally be able to send the parameter
- Dynamic: The parameter may conditionally be sent in a given PDU instance

Receiving
- Static: The implementation may optionally be able to receive the parameter
- Dynamic: The parameter may conditionally be present in a given PDU instance

xx excluded from any implementation. The feature should not be present.

ii stands for "out of the scope of profile AOM12", for static and dynamic requirements.

The conditions on which support and/or presence of a PDU element is required are stated in a note *n* associated with the 'c' abbreviation,
such as c*n*, when referring to a common condition *n*,
such as c(*n*), when referring to a specific condition *n*.

The list of the common conditions is provided in 3.3. The specific conditions c(*n*) are provided locally at the bottom of the PDU table which refers to it.

3.2.3 Nesting rules in ISPICS requirements list

In the annex A of this part of ISO/IEC ISP 11183, each entry of a table is identified by an index number. This index provides a unique reference to PDUs, Functional Units, and parameters. In the specific PDU tables, the level of numbering (1, 1.1, 1.1.1, etc) indicates parameters within constructed parameters and follows the embedded structures of abstract syntax definitions.

Rule 0
Based on ASN.1 rules, a contained element can only be present if its constructor element is present.

Rule 1
For static capabilities requirements, a mandatory element contained within an optional constructor element is mandatory only if the option is taken.

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Rule 2
For dynamic behaviour requirements, the status of a parameter is only applicable within the context of its containing structure. If a constructor element is optional, then presence of any elements contained within that constructor element are automatically conditional on the presence of the containing element. If the contained elements are marked mandatory this means they are mandatory if the containing element is present. Elements inherit the conditions of any element in which they are contained.

Rule 3
There are three types of constructor element specifications:

- **Choice**. A choice is coded as "c17", if there is one and only one of its alternatives to be present in a given instance of the PDU. There is an individual entry for each element of the selection.

- **Sequence or Set**. There is one entry for the SET or SEQUENCE element and there are individual entries for each element contained in the data structure.

- **Set of sequence** (e.g. Attribute List). There is one entry for the SET OF SEQUENCE element and there are individual entries for each element of the sequence.

Rule 4
When determining whether a check should be done by CMIPM or CMISE-service-user the criteria used are relative to the ISO/IEC 9596-1 procedures. If stated in the ISO/IEC 9596-1 procedures, then the check is done by the CMIPM, else the check is done by the CMISE-service-user.

3.3 Common conditions list conventions

The present clause defines the terms of the common conditions used in the annex A of this part of ISO/IEC ISP 11183. The conditions c1 up to c15 are defined in ISO/IEC 9596-2. For consistency of the numbering, the condition c16 is used in the "Base Standard" and "Profile" columns: it replaces the equivalent condition specified at the bottom of the tables A.57, A.63, A.65 and A.69 in the PICS. The conditions c17 and c18 are peculiar to the profile AOM1n. For each value of *n*, referred to in *cn* expression, the formal condition statements are the following:

c1 if A.7.1 then m else -
c2 if A.7.2 then m else -
c3 if A.7.3 then m else -
c4 if A.14.5/1 or A.14.5/2 then o else -
c5 if A.7.5 then m else -
c6 if A.7.1 or A.7.2 or A.7.3 or A.7.4 or A.7.5 then m else o
c7 if A.7.1 then m else o
c8 if A.6.2 then m else o.1
c9 if A.7.2 and (A.14.1/1 or A.14.3/1 or A.14.5/1 or A.14.6/1) then m else -
c10 if A.7.2 and (A.14.1/2 or A.14.3/2 or A.14.5/2 or A.14.6/2) then m else -
c11 if A.1.1/1 then m else -
c12 if A.1.1/2 then m else -
c13 if A.6.1 then x else m
c14 if A.7.1 and (A.14.1/1 or A.14.3/1 or A.14.5/1 or A.14.6/1) then m else -
c15 if A.7.1 and (A.14.1/2 or A.14.3/2 or A.14.5/2 or A.14.6/2) then m else -
c16 Parameter is present only if a result is generated
NOTE - When used as dynamic support in the "Profile" column this condition has the following meaning : if the result parameter is present then the operation-value parameter shall be present. The operation-value parameter shall not be present in any RORS PDU when the result parameter is absent.
c17 One and only one of the choices at this level must be present
c18 Allowed to be present unless associated FU is negotiated away

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NOTE - The meanings of the condition statements c1 up to c15 are the following:

c1 if MOS FU is supported then m else -
c2 if Filter FU is supported then m else -
c3 if MR FU is supported then m else -
c4 if M-GET service is supported then o else -
c5 if Cancel get FU is supported then m else -
c6 if MOS or Filter or MR or Extended service or Cancel get FUs are supported then m else o
c7 if MOS FU is supported then m else o
c8 if all of the Kernel FU is supported then m else o.1
c9 if Filter FU and (M-ACTION or M-DELETE or M-GET or M-SET) are supported in the invoker role then m else -
c10 if Filter FU and (M-ACTION or M-DELETE or M-GET or M-SET) are supported in the performer role then m else -
c11 if association initiator capability is supported then m else -
c12 if association responder capability is supported then m else -
c13 if support of some of the kernel CMIS services then x else m
c14 if MOS FU and (M-ACTION or M-DELETE or M-GET or M-SET) are supported in the invoker role then m else -
c15 if MOS FU and (M-ACTION or M-DELETE or M-GET or M-SET) are supported in the performer role then m else -

4 Abbreviations

ACSE	Association Control Service Element
AOM	Application OSI Management
APDU	Application Protocol Data Unit
ASN.1	Abstract Syntax Notation One
CMIP	Common Management Information Protocol
CMIPM	Common Management Information Protocol Machine
CMIPDU	Common Management Information Protocol Data Unit
CMIS	Common Management Information Service
CMISE	Common Management Information Service Element
FU	Functional Unit
ISP	International Standardized Profile
ISPICS	ISP Implementation Conformance Statement
MOS	Multiple Object Selection
MR	Multiple Reply
OSI	Open Systems Interconnection
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
ROER	Remote Operation Error
ROIV	Remote Operation Invoke
RORJ	Remote Operation Reject
RORS	Remote Operation Result
ROSE	Remote Operation Service Element
A-Profile	Application Profile (requiring connection-mode Transport Service)
T-Profile	Transport Profile (providing connection-mode Transport Service)

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5 Conformance to AOM12

A claim of conformance to the profile AOM12 is a claim that all requirements in the relevant base standards are satisfied, and that all requirements, in the following clauses and in the annex A of this part of ISO/IEC ISP 11183 and also in ISO/IEC ISP 11183-1, are satisfied.

5.1 Conformance statement

A supplier claiming conformance to the profile AOM12 shall make available a statement of support or non-support of each optional function, feature or parameter identified in ISO/IEC ISP 11183-1 and ISO/IEC ISP 11183-2.

5.2 CMIP conformance

An implementation conforming to this part of ISO/IEC ISP 11183 shall satisfy the conformance requirements of ISO/IEC 9596-1 and ISO/IEC 9596-2. This part of ISO/IEC ISP 11183 requires the support of all the functional units and the corresponding PDUs, except the extended service functional unit, specified in ISO/IEC 9596-1 and ISO/IEC 9596-2.

In compliance with the static conformance requirements of CMIP, conforming implementations shall support all the features mandated by this part of ISO/IEC ISP 11183.

Implementations conforming to the profile AOM12 shall implement all the mandatory 'mm', 'mo', 'mc' and 'mp' features.

They shall state which optional 'oo' features are implemented and used.
They shall state which conditional 'oc' features are implemented and used.

They shall provide a list of the supported CMISE errors for each operation. (See annex A, table A.125, for the complete list of the CMISE errors used against the different operations).

They shall support the version 2 of the CMIP protocol and its corresponding abstract syntax, such as defined in ISO/IEC 9596-1. Version 1 is outside the scope of the profile AOM12.

All elements of procedure as specified in ISO/IEC 9596-1 shall be supported. A CMIPM conforming to the profile AOM12 may remove only the "extended service" functional unit from the FUs list proposed by a CMISE-service-user. An initiating CMISE-service-user may propose any FUs it requires. A responding CMISE-service-user may negotiate away any FU.

All ASN.1 syntaxes as specified in ISO/IEC 9596-1 shall be supported.

The receiver of a multiple reply invoke operation shall issue the m-Linked-Reply operations with a linked reply argument type that corresponds to the original invoke operation value.

The receiver of an erroneous invoke operation shall issue an error notification type that corresponds to the definition for the original invoke operation.

The specification of the contents type of the parameter "accessControl" in CMIPUserInfo definition is outside the scope of the profile AOM12.

The specification of the contents type of the parameter "userInfo" in CMIPUserInfo and CMIPAbortInfo definitions is outside the scope of the profile AOM12.

The specifications of the contents type of the parameter "accessControl", included in "Action Argument", "Create Argument", "Delete Argument", "Get Argument" and "Set Argument" parameters are outside the scope of the profile AOM12.

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NOTE - Other profiles, e.g. AOM2nn, provide definitions of parameters specified by the ASN.1 "ANY DEFINED BY" type. These consist of the list of the possible ASN.1 types to be carried by the ANY element for each integer type value or each object identifier value of the associated identifier. (The list of the ASN.1 identifiers of such parameters is provided in annex A).

5.3 Association establishment and abort requirements

An implementation conforming to the profile AOM12 may support any of the configurations, that is, an implementation may be the Initiator or Responder of an association.

NOTES

1 For two implementations to interoperate one must act as an Initiator and the other as a Responder of an association.

2 The complete association requirements are specified in ISO/IEC ISP 11183-1.

Conforming implementations shall support the "user-information" parameter of AARQ, AARE and ABRT APDUs for the encoding and the decoding of CMIPUserInfo and CMIPAbortInfo parameters.

The usage of "accessControl" and "userInfo" parameters in the CMIPUserInfo sequence, which are of EXTERNAL ASN.1 type, requires that additional Abstract Syntax name(s) be specified and negotiated.

5.4 ROSE conformance

This part of ISO/IEC ISP 11183 specifies implementation options or selections such that conforming implementations will satisfy the conformance requirements of ISO/IEC 9072-2; In particular, according to the "Statement Requirements", (10.1), the application context of conforming implementations shall support the mapping of ROSE APDUs only onto the P-DATA Presentation service.

The profile AOM12 includes some additional requirements above those required in ISO/IEC 9072-2.

Implementations conforming to the profile AOM12 shall implement all the mandatory features and indicate the support of any optional features that have been implemented.

They shall use the ROIV, RORS, ROER and RORJ APDUs definitions to exchange the CMIPDUs.

The support of RORJ APDU is required. The invokeProblem parameter shall be able to carry the "duplicateInvocation", "mistypedArgument", "resourceLimitation" and "unrecognizedOperation" values. These are mapped to the corresponding CMIS error parameters and passed to the CMISE-service-user. The other values specified in ISO/IEC 9072-2 are optional.

The profile AOM12 does not prohibit the use of RORJ APDU as a response to rejected unconfirmed operations. This means that implementations must guard against confusion due to different RORJ APDUs by allowing sufficient amount of time between reuse of the same "InvokeID" value.

ISO/IEC 9596-1 uses the following operation classes, according to the application requirements :

class 1, for synchronous confirmed operation
class 2, for asynchronous confirmed operation
class 5, for asynchronous unconfirmed operation.

The profile AOM12 does not restrain or does not enforce the selection of operation class 1. Nevertheless, the operation class 2 has to be supported to make the Cancel-Get FU effective. The support level of this feature is specified as shown in table 2.

Table 2 - Operation classes support

Classes	1	2	3	4	5
Support	o	m	x	x	m

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Annex A

(normative)

ISPICS Requirements List for ISO/IEC ISP 11183-2

AOM12

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.

This annex specifies the support constraints and characteristics of this part of ISO/IEC ISP 11183 that have to or may appear in the implementation columns of an ISPICS.

This annex is based on the annex A of ISO/IEC 9596-2: it uses the numbering, the contents and the structure of the tables which are specified in that document. In particular, the table numbers and the index numbers are aligned with the corresponding table numbers and index numbers of the PICS proforma. It is worth noting that, when a row in a table or a table is not required for this profile, its contents are missing in this part of ISO/IEC ISP 11183; nevertheless, the number and the title of the missing tables are always reproduced.

The "Syntax" column provided in each PDU table of the PICS proforma is not reproduced in this annex. For the parameters which are specified as an ASN.1 CHOICE in the PDU tables of the PICS proforma, the "Profile" support of each element of CHOICE is defined once only in the tables A13a and A13b, entitled "Common parameter support".

The PDU names are those which are defined in annex B of ISO/IEC 9596-1. The parameter names are those which are specified in 7.3 and 7.4 of ISO/IEC 9596-1.

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

Base Std.	conformance requirement as defined in the "Status" column of ISO/IEC 9596-2
Profile	conformance requirement for this part of ISO/IEC ISP 11183
Support	requirement supported by the implementations.

The notations used in the "Base Standard" columns are defined in 3.1.2 and 3.3 of this part of ISO/IEC ISP 11183.

The notations used in the "Profile" columns are defined in 3.2.2 and 3.3 of this part of ISO/IEC ISP 11183.

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A.1 Global statement of conformance

The supplier of the implementation shall state whether or not all mandatory capabilities are implemented for ISO/IEC ISP 11183-2. CMIP version 2 is defined in ISO/IEC 9596-1.

	Profile	Support
Version of CMIP Protocol Version	Version 2	
Are all mandatory capabilities implemented?	m	

Answering NO to this question indicates non-conformance to the profile AOM12. Non-supported mandatory capabilities may be listed in the table below.

Capability not implemented	Reason

A.2 Capabilities

A.2.1 Initiator/Responder capability

The supplier of the implementation shall state the capability for initiating and responding to an association request, which specifies the use of CMISE, and for releasing an association, in the tables below.

Table A.1 - Association initialisation

Capability		Association initiator			Association responder		
Index	Does the implementation support:	Base Std.	Profile	Support	Base Std.	Profile	Support
A.1.1	association initialisation ?	o.1	o.1		o.1	o.1	

Table A.2 - Association release

Capability		Release initiator			Release responder		
Index	Does the implementation support:	Base Std.	Profile	Support	Base Std.	Profile	Support
A.2.1	release for an association initiated by the implementation ?	o.1	m		o.1	m	
A.2.1	release for an association not initiated by the implementation ?	o.1	m		o.1	m	

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A.2.2 ASN.1 EXTERNAL type parameters support

In some PDUs the following parameters are of the ASN.1 type EXTERNAL:
userInfo in CMIPUserInfo,
userInfo in CMIPAbortInfo,
accessControl in CMIPUserInfo,
accessControl in several CMIP PDUs.

Unlike other parameters, the static "mandatory" support in the "Profile" column indicates that the CMIP implementation shall be able to parse or process all the fields in this EXTERNAL parameter except the "encoding" field (the "encoding" field can be one of the following three types: ANY, OCTET STRING or BIT STRING). The processing of the "encoding" field is out of scope for the CMIP implementation.

A.2.3 CMIPUserInfo parameter support

Table A.3 - CMIPUserInfo parameter support (in AARQapdu)

		AARQ Sending			AARQ Receiving		
Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)	Base Std.	Profile	Type, value(s) & ranges(s)
A.3.1	CMIPUserInfo	c11	mm		c12	mm	
A.3.1.1	protocolVersion	m	mm	version 2	m	mm	version 2
A.3.1.2	functionalUnits	c6	mo	(1)	m	mo	(1)
A.3.1.3	accessControl	o	mo	(2)	m	mo	(2)
A.3.1.4	userInfo	o	mo	(2)	m	mo	(2)

(1) Initiator (combination of CMISE user and CMISE provider) must be capable of proposing functional units value "11101'B, given that the CMISE user requires them. The CMIP provider must be capable of supporting all functional units, except for "extended service".

(2) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the EXTERNAL type.

If this parameter is present in a user request, the CMIP machine shall include it in the CMIP PDU sent. The CMIP machine does not interpret this parameter.

If this parameter is present on a received CMIP PDU, the CMIP machine shall pass the parameter to the CMISE user. The CMIP machine does not interpret this parameter.

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Table A.4 - CMIPUserInfo parameter support (in AAREapdu)

		AARE Sending			AARE Receiving		
Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)	Base Std.	Profile	Type, value(s) & range(s)
A.4.1	CMIPUserInfo	c12	mm		c11	mm	
A.4.1.1	protocolVersion	m	mm	version 2 (3)	m	mm	version 2 (3)
A.4.1.2	functionalUnits	c6	mo	(1)	m	mo	(1)
A.4.1.3	accessControl	o	mo	(2)	m	mo	(2)
A.4.1.4	userInfo	o	mo	(2)	m	mo	(2)

(1) Responding CMISE provider may negotiate down from proposed functional units value '11111'B to '11101'B. The CMIP provider must be capable of supporting all functional units, except for "extended service".

(2) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the EXTERNAL type.

If this parameter is present in a user request, the CMIP machine shall include it in the CMIP PDU sent. The CMIP machine does not interpret this parameter.

If this parameter is present on a received CMIP PDU, the CMIP machine shall pass the parameter to the CMISE user. The CMIP machine does not interpret this parameter.

(3) System may negotiate away Version 1.

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A.2.4. CMIPAbortInfo parameter support

Table A.5 - CMIPAbortInfo parameter support

		Sender			Receiver		
Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)	Base Std.	Profile	Type, value(s) & range(s)
A.5.1	CMIPAbortInfo	m	mm		m	mm	
A.5.1.1	abortSource	m	mm		m	mm	
A.5.1.2	userInfo	o	mo	(1)	m	mo	(1)

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the EXTERNAL type.

If this parameter is present in a user request, the CMIP machine shall include it in the CMIP PDU sent. The CMIP machine does not interpret this parameter.

If this parameter is present on a received CMIP PDU, the CMIP machine shall pass the parameter to the CMISE user. The CMIP machine does not interpret this parameter.

A.2.5 Major capabilities

Table A.6 - Conformance claim

Index	Does the implementation support the protocol required to provide:	Base Std.	Profile	Support
A.6.1	some of the kernel CMIS services in the invoker and/or performer roles?	o	i	
A.6.2	all of the kernel CMIS services in both roles?	c13	m	

Table A.7 - Additional functional unit support

Index	Functional unit	Base Std.	Profile
A.7.1	Multiple object selection	o	m
A.7.2	Filter	o	m
A.7.3	Multiple reply	c7	m
A.7.4	Extended service	o	i
A.7.5	Cancel get	c4	m

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A.3 Protocol parameters

A.3.1 System wide parameters

System wide parameters have a single specification applicable for all CMIP PDUs in which they occur.

Table A.8 - Scope parameter support

		Sending			Receiving		
Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)	Base Std.	Profile	Type, value(s) & range(s)
A.8	Scope	c14	mc18		c15	mc18	
A.8.1	namedNumbers(2)	o.1	mc17	0,1,2	m	mc17	0,1,2
A.8.2	individualLevels	o.1	mc17	(1)	m	mc17	(1)
A.8.3	baseToNthLevel	o.1	mc17	(1)	m	mc17	(1)

(1) With individualLevels and baseToNthLevel, a value of 0 has the same semantics as baseObject (integer 0); with individualLevels, a value of 1 has the same semantics as firstLevelOnly (integer 1).

(2) Identifier only provided for naming convenience.

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Table A.9 - FilterItem parameter support (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.9	FilterItem	c9	mc(1)	
A.9.1	equality	o.1	mc17	
A.9.2	substrings	o.1	mc17	
A.9.2.1	initialString	m	mc(2)	
A.9.2.1.1	attributeId	m	mm	
A.9.2.1.2	string	m	mm	
A.9.2.2	anyString	m	mc(2)	
A.9.2.2.1	attributeId	m	mm	
A.9.2.2.2	string	m	mm	
A.9.2.3	finalString	m	mc(2)	
A.9.2.3.1	attributeId	m	mm	
A.9.2.3.2	string	m	mm	
A.9.3	greaterOrEqual	o.1	mc17	
A.9.4	lessOrEqual	o.1	mc17	
A.9.5	present	o.1	mc17	
A.9.6	subsetOf	o.1	mc17	
A.9.7	supersetOf	o.1	mc17	
A.9.8	nonNullSetIntersection	o.1	mc17	

(1) At least 1 FilterItem must be present in every instance of a CMISFilter parameter, although not at every level, in order to stop recursion.

(2) Provided this element of the 8 choices by condition c17 is present, at least one of the three choices must be present.

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Table A.10 - FilterItem parameter support (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.10	FilterItem	c10	mc(1)	
A.10.1	equality	m	mc17	
A.10.2	substrings	m	mc17	
A.10.2.1	initialString	m	mc(2)	
A.10.2.1.1	attributeId	m	mm	
A.10.2.1.2	string	m	mm	
A.10.2.2	anyString	m	mc(2)	
A.10.2.2.1	attributeId	m	mm	
A.10.2.2.2	string	m	mm	
A.10.2.3	finalString	m	mc(2)	
A.10.2.3.1	attributeId	m	mm	
A.10.2.3.2	string	m	mm	
A.10.3	greaterOrEqual	m	mc17	
A.10.4	lessOrEqual	m	mc17	
A.10.5	present	m	mc17	
A.10.6	subsetOf	m	mc17	
A.10.7	supersetOf	m	mc17	
A.10.8	nonNullSetIntersection	m	mc17	

(1) At least 1 FilterItem must be present in every instance of a CMISFilter parameter, although not at every level, in order to stop recursion.

(2) Provided this element of the 8 choices by condition c17 is present, at least one of the three choices must be present.

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Table A.11 - CMISFilter parameter support

			Sending			Receiving		
Index	Parameters name	Syntax	Base Std.	Profile	Max number of FilterItems	Base Std.	Profile	Max number of FilterItems
A.11	CMISFilter		c9	mc18	-	c10	mc18	-
A.11.1	Item	FilterItem (see A.9,A.10)	m	mc17 (1)	-	m	mc17	-
A.11.2	and	SETofCMISFilter	o	mc17 (2)		m	mc17	
A.11.3	or	SETofCMISFilter	o	mc17 (2)		m	mc17	
A.11.4	not	CMISFilter	o	mc17 (2)		m	mc17	

(1) At least 1 Item parameter must be present in every instance of a CMISFilter, although not at every level, in order to stop recursion.

(2) AND, OR, and NOT are not required in every instance of a CMISFilter but an implementation should be capable of generating at least one in a given CMISFilter based on user request.

Table A.12 - CMISFilter complexity limitations

Index	Complexity limitation	Sending	Receiving
A.12.1	Maximum nesting depth of CMISFilter expressions that may occur in an 'AND' (ref. A.11.2)		
A.12.2	Maximum nesting depth of CMISFilter expressions that may occur in an 'OR' (ref. A.11.3)		
A.12.3	Maximum number of FilterItem parameters in a CMISFilter parameter (ref. A.9,A.10,A.11)		

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A.3.2 Common protocol parameters

Common parameters may have a specification applicable for many PDUs in which they occur.

The "Profile" column in the tables A.13a and A.13b is only referring to the static support. Separate tables, A.8 up to A.12, are provided for Scope and CMISFilter, so that constraints and complexity limitations can be expressed for these parameters.

Table A.13a - Common parameter support - (sending)

Index	Parameter name	Syntax	Profile (1)	Type, value(s) & range(s)
A.13a.1	invokeID	INTEGER	m	See ISP 11183-1,8.3
A.13a.2	linked-ID	INTEGER	m	See ISP 11183-1,8.3
A.13a.3	baseManagedObjectClass	OBJECT IDENTIFIER INTEGER	m i	
A.13a.4	baseManagedObjectInstance	DistinguishedName OCTET STRING RDNSequence	m i m	
A.13a.5	accessControl	EXTERNAL	m	(2)
A.13a.6	synchronization	ENUMERATED	m	0 to 1
A.13a.7	managedObjectClass	OBJECT IDENTIFIER INTEGER	m i	
A.13a.8	managedObjectInstance	DistinguishedName OCTET STRING RDNSequence	m i m	
A.13a.9	currentTime	GeneralizedTime	m	
A.13a.10	actionType	OBJECT IDENTIFIER INTEGER	m i	
A.13a.11	attributeId	OBJECT IDENTIFIER INTEGER	m i	
A.13a.12	eventType	OBJECT IDENTIFIER INTEGER	m i	

(1) For this part of ISO/IEC ISP 11183, the values for the "Profile" column in this table apply consistently across all PDU parameter tables, which use the corresponding common parameter.

(2) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the EXTERNAL type. If this parameter is present in a user request, the CMIP machine shall include it in the CMIP PDU sent. The CMIP machine does not interpret this parameter.

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Table A.13b - Common parameter support - (receiving)

Index	Parameter name	Syntax	Profile (1)	Type, value(s) & range(s)
A.13b.1	invokeID	INTEGER	m	See ISP 11183-1,8.3
A.13b.2	linked-ID	INTEGER	m	See ISP 11183-1,8.3
A.13b.3	baseManagedObjectClass	OBJECT IDENTIFIER INTEGER	m m	
A.13b.4	baseManagedObjectInstance	DistinguishedName OCTET STRING RDNSequence	m m m	
A.13b.5	accessControl	EXTERNAL	m	(2)
A.13b.6	synchronization	ENUMERATED	m	0 to 1
A.13b.7	managedObjectClass	OBJECT IDENTIFIER INTEGER	m m	
A.13b.8	managedObjectInstance	DistinguishedName OCTET STRING RDNSequence	m m m	
A.13b.9	currentTime	GeneralizedTime	m	
A.13b.10	actionType	OBJECT IDENTIFIER INTEGER	m m	
A.13b.11	attributeId	OBJECT IDENTIFIER INTEGER	m m	
A.13b.12	eventType	OBJECT IDENTIFIER INTEGER	m m	

(1) For this part of ISO/IEC ISP 11183, the values for the "Profile" column in this table apply consistently across all PDU parameter tables, which use the corresponding common parameter.

(2) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the EXTERNAL type. If this parameter is present on a received CMIP PDU, the CMIP machine shall pass the parameter to the CMISE user. The CMIP machine does not interpret this parameter.

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A.4 Protocol data units

Table A.14 - Protocol support for kernel CMIS services

		Invoker role				Performer role			
Index	CMIS service	PDUs table	Base Std.	Profile	Support	PDUs table	Base Std.	Profile	Support
A.14.1	M-ACTION	A.15	c8	m		A.16	c8	m	
A.14.2	M-CREATE	A.19	c8	m		A.20	c8	m	
A.14.3	M-DELETE	A.21	c8	m		A.22	c8	m	
A.14.4	M-EVENT-REPORT	A.23	c8	m		A.24	c8	m	
A.14.5	M-GET	A.25	c8	m		A.26	c8	m	
A.14.6	M-SET	A.27	c8	m		A.28	c8	m	

The following tables, A.15 up to A.28, provide the sets of PDUs required to support the CMIS services in the invoker and performer roles.

The "Base Standard" column states that all the PDUs for kernel functional unit are mandatory. The PDUs which depend on support of the additional functional units are conditional. The PDUs contained in the tables A.17 and A.18 are mandatory if the M-GET service and the Cancel get functional unit are supported.

The "Profile" column states that all the PDUs for kernel and additional functional units are mandatory. Because all the functional units, except the extended services, are statically required in AOM12, all the PDUs are statically mandatory. For the same reason, the PDUs contained in the tables A.17 and A.18 are also mandatory.

The column entitled "Support" should be completed in the following tables to state which PDUs are supported by the implementations.

The four CMIS errors "duplicateInvocation", "mistypedArgument", "resourcelimitation", "unrecognizedOperation" do not result in ROER PDUs, but are mapped onto RORJ PDU (see tables A.119 and A.120).

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Table A.15 - CMIP PDUs required to support M-ACTION service in the invoker role

Invoker sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.15.1	ROIV-m-Action	m	m	
A.15.2	ROIV-m-Action-Confirmed	m	m	
A.15.3	RORJ	m	m	
Invoker receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.15.4	RORS-m-Action-Confirmed	m	m	
A.15.5	ROIV-m-LinkedReply-Action	c3	m	
A.15.6	ROER-accessDenied	m	m	
A.15.7	ROER-classInstanceConflict	m	m	
A.15.8	ROER-complexityLimitation	m	m	
A.15.9	ROER-invalidArgumentValue	m	m	
A.15.10	ROER-invalidFilter	c2	m	
A.15.11	ROER-invalidScope	c1	m	
A.15.12	ROER-noSuchAction	m	m	
A.15.13	ROER-noSuchArgument	m	m	
A.15.14	ROER-noSuchObjectClass	m	m	
A.15.15	ROER-noSuchObjectInstance	m	m	
A.15.16	ROER-processingFailure	m	m	
A.15.17	ROER-syncNotSupported	c1	m	
A.15.18	RORJ	m	m	

--`,,```,,,,````-`-`,,`,,`,`,,`---
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Table A.16 - CMIP PDUs required to support M-ACTION service in the performer role

Performer receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.16.1	ROIV-m-Action	m	m	
A.16.2	ROIV-m-Action-Confirmed	m	m	
A.16.3	RORJ	m	m	
Performer sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.16.4	RORS-m-Action-Confirmed	m	m	
A.16.5	ROIV-m-LinkedReply-Action	c3	m	
A.16.6	ROER-accessDenied	m	m	
A.16.7	ROER-classInstanceConflict	m	m	
A.16.8	ROER-complexityLimitation	m	m	
A.16.9	ROER-invalidArgumentValue	m	m	
A.16.10	ROER-invalidFilter	c2	m	
A.16.11	ROER-invalidScope	c1	m	
A.16.12	ROER-noSuchAction	m	m	
A.16.13	ROER-noSuchArgument	m	m	
A.16.14	ROER-noSuchObjectClass	m	m	
A.16.15	ROER-noSuchObjectInstance	m	m	
A.16.16	ROER-processingFailure	m	m	
A.16.17	ROER-syncNotSupported	c1	m	
A.16.18	RORJ	m	m	

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Table A.17 - CMIP PDUs required to support M-CANCEL-GET service in the invoker role

Invoker sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.17.1	ROIV-m-Cancel-Get	m	m	
A.17.2	RORJ	m	m	
Invoker receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.17.3	RORS-m-Cancel-Get	m	m	
A.17.4	ROER-noSuchInvokeId	m	m	
A.17.5	ROER-mistypedOperation	m	m	
A.17.6	ROER-processingFailure	m	m	
A.17.7	RORJ	m	m	

Table A.18 - CMIP PDUs required to support M-CANCEL-GET service in the performer role

Performer sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.18.1	ROIV-m-Cancel-Get	m	m	
A.18.2	RORJ	m	m	
Performer receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.18.3	RORS-m-Cancel-Get	m	m	
A.18.4	ROER-noSuchInvokeId	m	m	
A.18.5	ROER-mistypedOperation	m	m	
A.18.6	ROER-processingFailure	m	m	
A.18.7	RORJ	m	m	

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Table A.19 - CMIP PDUs required to support M-CREATE service in the invoker role

Invoker sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.19.1	ROIV-m-Create	m	m	
A.19.2	RORJ	m	m	
Invoker receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.19.3	RORS-m-Create	m	m	
A.19.4	ROER-accessDenied	m	m	
A.19.5	ROER-classInstanceConflict	m	m	
A.19.6	ROER-duplicateManagedObjectInstance	m	m	
A.19.7	ROER-invalidAttributeValue	m	m	
A.19.8	ROER-invalidObjectInstance	m	m	
A.19.9	ROER-missingAttributeValue	m	m	
A.19.10	ROER-noSuchAttribute	m	m	
A.19.11	ROER-noSuchObjectClass	m	m	
A.19.12	ROER-noSuchObjectInstance	m	m	
A.19.13	ROER-noSuchReferenceObject	m	m	
A.19.14	ROER-processingFailure	m	m	
A.19.15	RORJ	m	m	

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Table A.20 - CMIP PDUs required to support M-CREATE service in the performer role

Performer receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.20.1	ROIV-m-Create	m	m	
A.20.2	RORJ	m	m	
Performer sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.20.3	RORS-m-Create	m	m	
A.20.4	ROER-accessDenied	m	m	
A.20.5	ROER-classInstanceConflict	m	m	
A.20.6	ROER-duplicateManagedObjectInstance	m	m	
A.20.7	ROER-invalidAttributeValue	m	m	
A.20.8	ROER-invalidObjectInstance	m	m	
A.20.9	ROER-missingAttributeValue	m	m	
A.20.10	ROER-noSuchAttribute	m	m	
A.20.11	ROER-noSuchObjectClass	m	m	
A.20.12	ROER-noSuchObjectInstance	m	m	
A.20.13	ROER-noSuchReferenceObject	m	m	
A.20.14	ROER-processingFailure	m	m	
A.20.15	RORJ	m	m	

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Table A.21 - CMIP PDUs required to support M-DELETE service in the invoker role

Invoker sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.21.1	ROIV-m-Delete	m	m	
A.21.2	RORJ	m	m	
Invoker receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.21.3	RORS-m-Delete	m	m	
A.21.4	ROIV-m-LinkedReply-Delete	c3	m	
A.21.5	ROER-accessDenied	m	m	
A.21.6	ROER-classInstanceConflict	m	m	
A.21.7	ROER-complexityLimitation	m	m	
A.21.8	ROER-invalidFilter	c2	m	
A.21.9	ROER-invalidScope	c1	m	
A.21.10	ROER-noSuchObjectClass	m	m	
A.21.11	ROER-noSuchObjectInstance	m	m	
A.21.12	ROER-processingFailure	m	m	
A.21.13	ROER-syncNotSupported	c1	m	
A.21.14	RORJ	m	m	

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Table A.22 - CMIP PDUs required to support M-DELETE service in the performer role

Performer receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.22.1	ROIV-m-Delete	m	m	
A.22.2	RORJ	m	m	
Performer sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.22.3	RORS-m-Delete	m	m	
A.22.4	ROIV-m-LinkedReply-Delete	c3	m	
A.22.5	ROER-accessDenied	m	m	
A.22.6	ROER-classInstanceConflict	m	m	
A.22.7	ROER-complexityLimitation	m	m	
A.22.8	ROER-invalidFilter	c2	m	
A.22.9	ROER-invalidScope	c1	m	
A.22.10	ROER-noSuchObjectClass	m	m	
A.22.11	ROER-noSuchObjectInstance	m	m	
A.22.12	ROER-processingFailure	m	m	
A.22.13	ROER-syncNotSupported	c1	m	
A.22.14	RORJ	m	m	

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Table A.23 - CMIP PDUs required to support M-EVENT-REPORT service in the invoker role

Invoker sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.23.1	ROIV-m-EventReport	m	m	
A.23.2	ROIV-m-EventReport-Confirmed	m	m	
A.23.3	RORJ	m	m	
Invoker receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.23.4	RORS-m-EventReport-Confirmed	m	m	
A.23.5	ROER-invalidArgumentValue	m	m	
A.23.6	ROER-noSuchArgument	m	m	
A.23.7	ROER-noSuchEventType	m	m	
A.23.8	ROER-noSuchObjectClass	m	m	
A.23.9	ROER-noSuchObjectInstance	m	m	
A.23.10	ROER-processingFailure	m	m	
A.23.11	RORJ	m	m	

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Table A.24 - CMIP PDUs required to support M-EVENT-REPORT service in the performer role

Performer receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.24.1	ROIV-m-EventReport	m	m	
A.24.2	ROIV-m-EventReport-Confirmed	m	m	
A.24.3	RORJ	m	m	
Performer sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.24.4	RORS-m-EventReport-Confirmed	m	m	
A.24.5	ROER-invalidArgumentValue	m	m	
A.24.6	ROER-noSuchArgument	m	m	
A.24.7	ROER-noSuchEventType	m	m	
A.24.8	ROER-noSuchObjectClass	m	m	
A.24.9	ROER-noSuchObjectInstance	m	m	
A.24.10	ROER-processingFailure	m	m	
A.24.11	RORJ	m	m	

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Table A.25 - CMIP PDUs required to support M-GET service in the invoker role

Invoker sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.25.1	ROIV-m-Get	m	m	
A.25.2	RORJ	m	m	
Invoker receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.25.3	RORS-m-Get	m	m	
A.25.4	ROIV-m-LinkedReply-Get	c3	m	
A.25.5	ROER-accessDenied	m	m	
A.25.6	ROER-classInstanceConflict	m	m	
A.25.7	ROER-complexityLimitation	m	m	
A.25.8	ROER-getListError	m	m	
A.25.9	ROER-invalidFilter	c2	m	
A.25.10	ROER-invalidScope	c1	m	
A.25.11	ROER-noSuchObjectClass	m	m	
A.25.12	ROER-noSuchObjectInstance	m	m	
A.25.13	ROER-operationCancelled	c5	m	
A.25.14	ROER-processingFailure	m	m	
A.25.15	ROER-syncNotSupported	c1	m	
A.25.16	RORJ	m	m	

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Table A.26 - CMIP PDUs required to support M-GET service in the performer role

Performer receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.26.1	ROIV-m-Get	m	m	
A.26.2	RORJ	m	m	
Performer sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.26.3	RORS-m-Get	m	m	
A.26.4	ROIV-m-LinkedReply-Get	c3	m	
A.26.5	ROER-accessDenied	m	m	
A.26.6	ROER-classInstanceConflict	m	m	
A.26.7	ROER-complexityLimitation	m	m	
A.26.8	ROER-getListError	m	m	
A.26.9	ROER-invalidFilter	c2	m	
A.26.10	ROER-invalidScope	c1	m	
A.26.11	ROER-noSuchObjectClass	m	m	
A.26.12	ROER-noSuchObjectInstance	m	m	
A.26.13	ROER-operationCancelled	c5	m	
A.26.14	ROER-processingFailure	m	m	
A.26.15	ROER-syncNotSupported	c1	m	
A.26.16	RORJ	m	m	

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Table A.27 - CMIP PDUs required to support M-SET service in the invoker role

Invoker sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.27.1	ROIV-m-Set	m	m	
A.27.2	ROIV-m-Set-Confirmed	m	m	
A.27.3	RORJ	m	m	
Invoker receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.27.4	RORS-m-Set-Confirmed	m	m	
A.27.5	ROIV-m-LinkedReply-Set	c3	m	
A.27.6	ROER-accessDenied	m	m	
A.27.7	ROER-classInstanceConflict	m	m	
A.27.8	ROER-complexityLimitation	m	m	
A.27.9	ROER-invalidFilter	c2	m	
A.27.10	ROER-invalidScope	c1	m	
A.27.11	ROER-noSuchObjectClass	m	m	
A.27.12	ROER-noSuchObjectInstance	m	m	
A.27.13	ROER-processingFailure	m	m	
A.27.14	ROER-setListError	m	m	
A.27.15	ROER-syncNotSupported	c1	m	
A.27.16	RORJ	m	m	

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Table A.28 - CMIP PDUs required to support M-SET service in the performer role

Performer receiving				
Index	Protocol data unit	Base Std.	Profile	Support
A.28.1	ROIV-m-Set	m	m	
A.28.2	ROIV-m-Set-Confirmed	m	m	
A.28.3	RORJ	m	m	
Performer sending				
Index	Protocol data unit	Base Std.	Profile	Support
A.28.4	RORS-m-Set-Confirmed	m	m	
A.28.5	ROIV-m-LinkedReply-Set	c3	m	
A.28.6	ROER-accessDenied	m	m	
A.28.7	ROER-classInstanceConflict	m	m	
A.28.8	ROER-complexityLimitation	m	m	
A.28.9	ROER-invalidFilter	c2	m	
A.28.10	ROER-invalidScope	c1	m	
A.28.11	ROER-noSuchObjectClass	m	m	
A.28.12	ROER-noSuchObjectInstance	m	m	
A.28.13	ROER-processingFailure	m	m	
A.28.14	ROER-setListError	m	m	
A.28.15	ROER-syncNotSupported	c1	m	
A.28.16	RORJ	m	m	

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A.5 PDU parameters

Table A.29 - ROIV-m-Action (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.29.1	invokeID	m	mm	
A.29.2	linked-ID	x	xx	
A.29.3	operation-value	m	mm	6
A.29.4	ActionArgument	m	mm	
A.29.4.1	baseManagedObjectClass	m	mm	
A.29.4.2	baseManagedObjectInstance	m	mm	
A.29.4.3	accessControl	o	mo	(1)
A.29.4.4	synchronization	c1	mo	0 to 1
A.29.4.5	scope	c1	mo	
A.29.4.6	filter	c2	mo	
A.29.4.7	ActionInfo	m	mm	
A.29.4.7.1	actionType	m	mm	
A.29.4.7.2	actionInfoArg	o	mo	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present in a user request, the CMIP machine shall include it in the CMIP PDU sent. The CMIP machine does not interpret this parameter.

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Table A.30 - ROIV-m-Action (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.30.1	invokeID	m	mm	
A.30.2	linked-ID	x	xx	
A.30.3	operation-value	m	mm	6
A.30.4	ActionArgument	m	mm	
A.30.4.1	baseManagedObjectClass	m	mm	
A.30.4.2	baseManagedObjectInstance	m	mm	
A.30.4.3	accessControl	m	mo	(1)
A.30.4.4	synchronization	c1	mo	0 to 1
A.30.4.5	scope	c1	mo	
A.30.4.6	filter	c2	mo	
A.30.4.7	ActionInfo	m	mm	
A.30.4.7.1	actionType	m	mm	
A.30.4.7.2	actionInfoArg	m	mo	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present on a received CMIP PDU, the CMIP machine shall pass the parameter to the CMISE user. The CMIP machine does not interpret this parameter.

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Table A.31 - ROIV-m-Action-Confirmed (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.31.1	invokeID	m	mm	
A.31.2	linkedID	x	xx	
A.31.3	operation-value	m	mm	7
A.31.4	ActionArgument	m	mm	
A.31.4.1	baseManagedObjectClass	m	mm	
A.31.4.2	baseManagedObjectInstance	m	mm	
A.31.4.3	accessControl	o	mo	(1)
A.31.4.4	synchronization	c1	mo	0 to 1
A.31.4.5	scope	c1	mo	
A.31.4.6	filter	c2	mo	
A.31.4.7	ActionInfo	m	mm	
A.31.4.7.1	actionType	m	mm	
A.31.4.7.2	actionInfoArg	o	mo	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present in a user request, the CMIP machine shall include it in the CMIP PDU sent. The CMIP machine does not interpret this parameter.

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Table A.32 - ROIV-m-Action-Confirmed (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.32.1	invokeID	m	mm	
A.32.2	linked-ID	x	xx	
A.32.3	operation-value	m	mm	7
A.32.4	ActionArgument	m	mm	
A.32.4.1	baseManagedObjectClass	m	mm	
A.32.4.2	baseManagedObjectInstance	m	mm	
A.32.4.3	accessControl	m	mo	(1)
A.32.4.4	synchronization	c1	mo	0 to 1
A.32.4.5	scope	c1	mo	
A.32.4.6	filter	c2	mo	
A.32.4.7	ActionInfo	m	mm	
A.32.4.7.1	actionType	m	mm	
A.32.4.7.2	actionInfoArg	m	mo	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present on a received CMIP PDU, the CMIP machine shall pass the parameter to the CMISE user. The CMIP machine does not interpret this parameter.

Table A.33 - ROIV-m-Cancel-Get (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.33.1	invokeID	m	mm	
A.33.2	linked-ID	x	xx	
A.33.3	operation-value	m	mm	10
A.33.4	getInvokeId	m	mm	

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Table A.34 - ROIV-m-Cancel-Get (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.34.1	invokeID	m	mm	
A.34.2	linked-ID	x	xx	
A.34.3	operation-value	m	mm	10
A.34.4	getInvokeId	m	mm	

Table A.35 - ROIV-m-Create (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.35.1	invokeID	m	mm	
A.35.2	linked-ID	x	xx	
A.35.3	operation-value	m	mm	8
A.35.4	CreateArgument	m	mm	
A.35.4.1	managedObjectClass	m	mm	
A.35.4.2	instance (2)	o	mo	
A.35.4.2.1	managedObjectInstance	m	mc17	
A.35.4.2.2	superiorObjectInstance	m	mc17	
A.35.4.3	accessControl	o	mo	(1)
A.35.4.4	referenceObjectInstance	o	mo	
A.35.4.5	attributeList	o	mo	
A.35.4.5.1	attributeId	m	mm	
A.35.4.5.2	attributeValue	m	mm	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present in a user request, the CMIP machine shall include it in the CMIP PDU sent. The CMIP machine does not interpret this parameter.

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Table A.36 - ROIV-m-Create (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.36.1	invokeID	m	mm	
A.36.2	linked-ID	x	xx	
A.36.3	operation-value	m	mm	8
A.36.4	CreateArgument	m	mm	
A.36.4.1	managedObjectClass	m	mm	
A.36.4.2	instance (2)	m	mo	
A.36.4.2.1	managedObjectInstance	m	mc17	
A.36.4.2.2	superiorObjectInstance	m	mc17	
A.36.4.3	accessControl	m	mo	(1)
A.36.4.4	referenceObjectInstance	m	mo	
A.36.4.5	attributeList	m	mo	
A.36.4.5.1	attributeId	m	mm	
A.36.4.5.2	attributeValue	m	mm	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present on a received CMIP PDU, the CMIP machine shall pass the parameter to the CMISE user. The CMIP machine does not interpret this parameter.

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Table A.37 - ROIV-m-Delete (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.37.1	invokeID	m	mm	
A.37.2	linked-ID	x	xx	
A.37.3	operation-value	m	mm	9
A.37.4	DeleteArgument	m	mm	
A.37.4.1	baseManagedObjectClass	m	mm	
A.37.4.2	baseManagedObjectInstance	m	mm	
A.37.4.3	accessControl	o	mo	(1)
A.37.4.4	synchronization	c1	mo	0 to 1
A.37.4.5	scope	c1	mo	
A.37.4.6	filter	c2	mo	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present in a user request, the CMIP machine shall include it in the CMIP PDU sent. The CMIP machine does not interpret this parameter.

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Table A.38 - ROIV-m-Delete (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.38.1	invokeID	m	mm	
A.38.2	linked-ID	x	xx	
A.38.3	operation-value	m	mm	9
A.38.4	DeleteArgument	m	mm	
A.38.4.1	baseManagedObjectClass	m	mm	
A.38.4.2	baseManagedObjectInstance	m	mm	
A.38.4.3	accessControl	m	mo	(1)
A.38.4.4	synchronization	c1	mo	0 to 1
A.38.4.5	scope	c1	mo	
A.38.4.6	filter	c2	mo	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present on a received CMIP PDU, the CMIP machine shall pass the parameter to the CMISE user. The CMIP machine does not interpret this parameter.

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Table A.39 - ROIV-m-EventReport (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.39.1	invokeID	m	mm	
A.39.2	linked-ID	x	xx	
A.39.3	operation-value	m	mm	0
A.39.4	EventReportArgument	m	mm	
A.39.4.1	managedObjectClass	m	mm	
A.39.4.2	managedObjectInstance	m	mm	
A.39.4.3	eventTime	o	mo	
A.39.4.4	eventType	m	mm	
A.39.4.5	eventInfo	o	mo	

Table A.40 - ROIV-m-EventReport (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.40.1	invokeID	m	mm	
A.40.2	linked-ID	x	xx	
A.40.3	operation-value	m	mm	0
A.40.4	EventReportArgument	m	mm	
A.40.4.1	managedObjectClass	m	mm	
A.40.4.2	managedObjectInstance	m	mm	
A.40.4.3	eventTime	m	mo	
A.40.4.4	eventType	m	mm	
A.40.4.5	eventInfo	m	mo	

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Table A.41 - ROIV-m-EventReport-Confirmed (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.41.1	invokeID	m	mm	
A.41.2	linked-ID	x	xx	
A.41.3	operation-value	m	mm	1
A.41.4	EventReportArgument	m	mm	
A.41.4.1	managedObjectClass	m	mm	
A.41.4.2	managedObjectInstance	m	mm	
A.41.4.3	eventTime	o	mo	
A.41.4.4	eventType	m	mm	
A.41.4.5	eventInfo	o	mo	

Table A.42 - ROIV-m-EventReport-Confirmed (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.42.1	invokeID	m	mm	
A.42.2	linked-ID	x	xx	
A.42.3	operation-value	m	mm	1
A.42.4	EventReportArgument	m	mm	
A.42.4.1	managedObjectClass	m	mm	
A.42.4.2	managedObjectInstance	m	mm	
A.42.4.3	eventTime	m	mo	
A.42.4.4	eventType	m	mm	
A.42.4.5	eventInfo	m	mo	

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Table A.43 - ROIV-m-Get (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.43.1	invokeID	m	mm	
A.43.2	linked-ID	x	xx	
A.43.3	operation-value	m	mm	3
A.43.4	GetArgument	m	mm	
A.43.4.1	baseManagedObjectClass	m	mm	
A.43.4.2	baseManagedObjectInstance	m	mm	
A.43.4.3	accessControl	o	mo	(1)
A.43.4.4	synchronization	c1	mo	0 to 1
A.43.4.5	scope	c1	mo	
A.43.4.6	filter	c2	mo	
A.43.4.7	attributeIdList	o	mo	
A.43.4.7.1	attributeId	m	mm	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present in a user request, the CMIP machine shall include it in the CMIP PDU sent. The CMIP machine does not interpret this parameter.

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Table A.44 - ROIV-m-Get (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.44.1	invokeID	m	mm	
A.44.2	linked-ID	x	xx	
A.44.3	operation-value	m	mm	3
A.44.4	GetArgument	m	mm	
A.44.4.1	baseManagedObjectClass	m	mm	
A.44.4.2	baseManagedObjectInstance	m	mm	
A.44.4.3	accessControl	m	mo	(1)
A.44.4.4	synchronization	c1	mo	0 to 1
A.44.4.5	scope	c1	mo	
A.44.4.6	filter	c2	mo	
A.44.4.7	attributeIdList	m	mo	
A.44.4.7.1	attributeId	m	mm	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present on a received CMIP PDU, the CMIP machine shall pass the parameter to the CMISE user. The CMIP machine does not interpret this parameter.

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Table A.45 - ROIV-m-LinkedReply-Action (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.45.1	invokeID	m	mm	
A.45.2	linked-ID	m	mm	
A.45.3	operation-value	m	mm	2
A.45.4	LinkedReplyArgument	m	mm	
A.45.4.1	ActionResult	m	mc17	
A.45.4.1.1	managedObjectClass	m	mm(1)	
A.45.4.1.2	managedObjectInstance	m	mm(1)	
A.45.4.1.3	currentTime	o	mo	
A.45.4.1.4	ActionReply	o	mo	
A.45.4.1.4.1	actionType	m	mm	
A.45.4.1.4.2	actionReplyInfo	m	mm	
A.45.4.2	ProcessingFailure	m	mc17	
A.45.4.2.1	managedObjectClass	m	mm	
A.45.4.2.2	managedObjectInstance	m	mm(1)	
A.45.4.2.3	SpecificErrorInfo	m	mm	
A.45.4.2.3.1	errorId	m	mm	
A.45.4.2.3.2	errorInfo	m	mm	
A.45.4.3	ActionError	m	mc17	
A.45.4.3.1	managedObjectClass	m	mm(1)	
A.45.4.3.2	managedObjectInstance	m	mm(1)	
A.45.4.3.3	currentTime	o	mo	
A.45.4.3.4	actionErrorInfo	m	mm	
A.45.4.3.4.1	errorStatus	m	mm	2,9,14,15
A.45.4.3.4.2	errorInfo	m	mm	(2)
A.45.4.3.4.2.1	actionType	m	mc17	

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Table A.45 (Cont.) - ROIV-m-LinkedReply-Action (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.45.4.3.4.2.2	actionArgument	m	mc17	
A.45.4.3.4.2.2.1	managedObjectClass	m	mo	
A.45.4.3.4.2.2.2	actionType	m	mm	
A.45.4.3.4.2.3	argumentValue	m	mc17	
A.45.4.3.4.2.3.1	actionType	m	mm	
A.45.4.3.4.2.3.2	actionInfoArg	o	mo	

(1) CMIS procedures require that object class and object instance be present in linked replies. The ASN.1 productions in CMIP do not reflect this requirement since the same productions are used in both RORS and linked replies PDUs.

(2) The alternative actionType is an appropriate errorInfo for errorStatus with accessDenied and noSuchAction values;

The alternative actionArgument is an appropriate errorInfo for errorStatus with noSuchArgument value;

The alternative argumentValue is an appropriate errorInfo for errorStatus with invalidArgumentValue.

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Table A.46 - ROIV-m-LinkedReply-Action (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.46.1	invokeID	m	mm	
A.46.2	linked-ID	m	mm	
A.46.3	operation-value	m	mm	2
A.46.4	LinkedReplyArgument	m	mm	
A.46.4.1	ActionResult	m	mc17	
A.46.4.1.1	managedObjectClass	m	mm(1)	
A.46.4.1.2	managedObjectInstance	m	mm(1)	
A.46.4.1.3	currentTime	m	mo	
A.46.4.1.4	ActionReply	m	mo	
A.46.4.1.4.1	actionType	m	mm	
A.46.4.1.4.2	actionReplyInfo	m	mm	
A.46.4.2	ProcessingFailure	m	mc17	
A.46.4.2.1	managedObjectClass	m	mm	
A.46.4.2.2	managedObjectInstance	m	mm(1)	
A.46.4.2.3	SpecificErrorInfo	m	mm	
A.46.4.2.3.1	errorId	m	mm	
A.46.4.2.3.2	errorInfo	m	mm	
A.46.4.3	ActionError	m	mc17	
A.46.4.3.1	managedObjectClass	m	mm(1)	
A.46.4.3.2	managedObjectInstance	m	mm(1)	
A.46.4.3.3	currentTime	m	mo	
A.46.4.3.4	actionErrorInfo	m	mm	
A.46.4.3.4.1	errorStatus	m	mm	2,9,14,15
A.46.4.3.4.2	errorInfo	m	mm	(2)
A.46.4.3.4.2.1	actionType	m	mc17	

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Table A.46 (Cont.) - ROIV-m-LinkedReply-Action (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.46.4.3.4.2.2	actionArgument	m	mc17	
A.46.4.3.4.2.2.1	managedObjectClass	m	mo	
A.46.4.3.4.2.2.2	actionType	m	mm	
A.46.4.3.4.2.3	argumentValue	m	mc17	
A.46.4.3.4.2.3.1	actionType	m	mm	
A.46.4.3.4.2.3.2	actionInfoArg	m	mo	

(1) CMIS procedures require that object class and object instance be present in linked replies. The ASN.1 productions in CMIP do not reflect this requirement since the same productions are used in both RORS and linked replies PDUs.

(2) The alternative actionType is an appropriate errorInfo for errorStatus with accessDenied and noSuchAction values;

The alternative actionArgument is an appropriate errorInfo for errorStatus with noSuchArgument value;

The alternative argumentValue is an appropriate errorInfo for errorStatus with invalidArgumentValue.

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Table A.47 - ROIV-m-LinkedReply-Delete (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.47.1	invokeID	m	mm	
A.47.2	linked-ID	m	mm	
A.47.3	operation-value	m	mm	2
A.47.4	LinkedReplyArgument	m	mm	
A.47.4.1	ProcessingFailure	m	mc17	
A.47.4.1.1	managedObjectClass	m	mm	
A.47.4.1.2	managedObjectInstance	m	mm(1)	
A.47.4.1.3	SpecificErrorInfo	m	mm	
A.47.4.1.3.1	errorId	m	mm	
A.47.4.1.3.2	errorInfo	m	mm	
A.47.4.2	DeleteResult	m	mc17	
A.47.4.2.1	managedObjectClass	m	mm(1)	
A.47.4.2.2	managedObjectInstance	m	mm(1)	
A.47.4.2.3	currentTime	o	mo	
A.47.4.3	DeleteError	m	mc17	
A.47.4.3.1	managedObjectClass	m	mm(1)	
A.47.4.3.2	managedObjectInstance	m	mm(1)	
A.47.4.3.3	currentTime	o	mo	
A.47.4.3.4	deleteErrorInfo	m	mm	2

(1) CMIS procedures require that object class and object instance be present in linked replies. The ASN.1 productions in CMIP do not reflect this requirement since the same productions are used in both RORS and linked replies PDUs.

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Table A.48 - ROIV-m-LinkedReply-Delete (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.48.1	invokeID	m	mm	
A.48.2	linked-ID	m	mm	
A.48.3	operation-value	m	mm	2
A.48.4	LinkedReplyArgument	m	mm	
A.48.4.1	ProcessingFailure	m	mc17	
A.48.4.1.1	managedObjectClass	m	mm	
A.48.4.1.2	managedObjectInstance	m	mm(1)	
A.48.4.1.3	SpecificErrorInfo	m	mm	
A.48.4.1.3.1	errorId	m	mm	
A.48.4.1.3.2	errorInfo	m	mm	
A.48.4.2	DeleteResult	m	mc17	
A.48.4.2.1	managedObjectClass	m	mm(1)	
A.48.4.2.2	managedObjectInstance	m	mm(1)	
A.48.4.2.3	currentTime	m	mo	
A.48.4.3	DeleteError	m	mc17	
A.48.4.3.1	managedObjectClass	m	mm(1)	
A.48.4.3.2	managedObjectInstance	m	mm(1)	
A.48.4.3.3	currentTime	m	mo	
A.48.4.3.4	deleteErrorInfo	m	mm	2

(1) CMIS procedures require that object class and object instance be present in linked replies. The ASN.1 productions in CMIP do not reflect this requirement since the same productions are used in both RORS and linked replies PDUs.

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Table A.49 - ROIV-m-LinkedReply-Get (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.49.1	invokeID	m	mm	
A.49.2	linked-ID	m	mm	
A.49.3	operation-value	m	mm	2
A.49.4	LinkedReplyArgument	m	mm	
A.49.4.1	GetResult	m	mc17	
A.49.4.1.1	managedObjectClass	m	mm(1)	
A.49.4.1.2	managedObjectInstance	m	mm(1)	
A.49.4.1.3	currentTime	o	mo	
A.49.4.1.4	attributeList	m	mm(2)	
A.49.4.1.4.1	attributeId	m	mm	
A.49.4.1.4.2	attributeValue	m	mm	
A.49.4.2	GetListError	m	mc17	
A.49.4.2.1	managedObjectClass	m	mm(1)	
A.49.4.2.2	managedObjectInstance	m	mm(1)	
A.49.4.2.3	currentTime	o	mo	
A.49.4.2.4	getInfoList	m	mm	
A.49.4.2.4.1	AttributeIdError	m	mc17	
A.49.4.2.4.1.1	errorStatus	m	mm	2,5
A.49.4.2.4.1.2	attributeId	m	mm	
A.49.4.2.4.2	Attribute	m	mc17	
A.49.4.2.4.2.1	attributeId	m	mm	
A.49.4.2.4.2.2	attributeValue	m	mm	
A.49.4.3	ProcessingFailure	m	mc17	

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Table A.49 (Cont.) - ROIV-m-LinkedReply-Get (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.49.4.3.1	managedObjectClass	m	mm	
A.49.4.3.2	managedObjectInstance	m	mm(1)	
A.49.4.3.3	SpecificErrorInfo	m	mm	
A.49.4.3.3.1	errorId	m	mm	
A.49.4.3.3.2	errorInfo	m	mm	

(1) CMIS procedures require that object class and object instance be present in linked replies. The ASN.1 productions in CMIP do not reflect this requirement since the same productions are used in both RORS and linked replies PDUs.

(2) If an empty list is supplied in the attributeIdList parameter of ROIV-m-Get, (as distinct from no list), the attributeList parameter returned shall be empty.

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Table A.50 - ROIV-m-LinkedReply-Get (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.50.1	invokeID	m	mm	
A.50.2	linked-ID	m	mm	
A.50.3	operation-value	m	mm	2
A.50.4	LinkedReplyArgument	m	mm	
A.50.4.1	GetResult	m	mc17	
A.50.4.1.1	managedObjectClass	m	mm(1)	
A.50.4.1.2	managedObjectInstance	m	mm(1)	
A.50.4.1.3	currentTime	m	mo	
A.50.4.1.4	attributeList	m	mm(2)	
A.50.4.1.4.1	attributeId	m	mm	
A.50.4.1.4.2	attributeValue	m	mm	
A.50.4.2	GetListError	m	mc17	
A.50.4.2.1	managedObjectClass	m	mm(1)	
A.50.4.2.2	managedObjectInstance	m	mm(1)	
A.50.4.2.3	currentTime	m	mo	
A.50.4.2.4	getInfoList	m	mm	
A.50.4.2.4.1	AttributeIdError	m	mc17	
A.50.4.2.4.1.1	errorStatus	m	mm	2,5
A.50.4.2.4.1.2	attributeId	m	mm	
A.50.4.2.4.2	Attribute	m	mc17	
A.50.4.2.4.2.1	attributeId	m	mm	
A.50.4.2.4.2.2	attributeValue	m	mm	
A.50.4.3	ProcessingFailure	m	mc17	
A.50.4.3.1	managedObjectClass	m	mm	

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Table A.50 (Cont.) - ROIV-m-LinkedReply-Get (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.50.4.3.2	managedObjectInstance	m	mm(1)	
A.50.4.3.3	SpecificErrorInfo	m	mm	
A.50.4.3.3.1	errorId	m	mm	
A.50.4.3.3.2	errorInfo	m	mm	

(1) CMIS procedures require that object class and object instance be present in linked replies. The ASN.1 productions in CMIP do not reflect this requirement since the same productions are used in both RORS and linked replies PDUs.

(2) If an empty list is supplied in the attributeIdList parameter of ROIV-m-Get, (as distinct from no list), the attributeList parameter returned shall be empty.

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Table A.51 - ROIV-m-LinkedReply-Set (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.51.1	invokeID	m	mm	
A.51.2	linked-ID	m	mm	
A.51.3	operation-value	m	mm	2
A.51.4	LinkedReplyArgument	m	mm	
A.51.4.1	SetResult	m	mc17	
A.51.4.1.1	managedObjectClass	m	mm(1)	
A.51.4.1.2	managedObjectInstance	m	mm(1)	
A.51.4.1.3	currentTime	o	mo	
A.51.4.1.4	attributeList	o	mo	
A.51.4.1.4.1	attributeId	m	mm	
A.51.4.1.4.2	attributeValue	m	mm	
A.51.4.2	SetListError	m	mc17	
A.51.4.2.1	managedObjectClass	m	mm(1)	
A.51.4.2.2	managedObjectInstance	m	mm(1)	
A.51.4.2.3	currentTime	o	mo	
A.51.4.2.4	setInfoList	m	mm	
A.51.4.2.4.1	AttributeError	m	mc17	
A.51.4.2.4.1.1	errorStatus	m	mm	2,5,6,24,25
A.51.4.2.4.1.2	modifyOperator	m	mo(2)	0 to 3
A.51.4.2.4.1.3	attributeId	m	mm	
A.51.4.2.4.1.4	attributeValue	m	mo(3)	
A.51.4.2.4.2	Attribute	m	mc17	
A.51.4.2.4.2.1	attributeId	m	mm	
A.51.4.2.4.2.2	attributeValue	m	mm	
A.51.4.3	ProcessingFailure	m	mc17	

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Table A.51 (Cont.) - ROIV-m-LinkedReply-Set (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.51.4.3.1	managedObjectClass	m	mm	
A.51.4.3.2	managedObjectInstance	m	mm(1)	
A.51.4.3.3	SpecificErrorInfo	m	mm	
A.51.4.3.3.1	errorId	m	mm	
A.51.4.3.3.2	errorInfo	m	mm	

(1) CMIS procedures require that object class and object instance be present in linked replies. The ASN.1 productions in CMIP do not reflect this requirement since the same productions are used in both RORS and linked replies PDUs.

(2) Is present if errorStatus is set to invalidOperation or invalidOperator values.

(3) Is absent if modifyOperator is set to default. This also applies to ROER-SetListError.

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Table A.52 - ROIV-m-LinkedReply-Set (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.52.1	invokeID	m	mm	
A.52.2	linked-ID	m	mm	
A.52.3	operation-value	m	mm	2
A.52.4	LinkedReplyArgument	m	mm	
A.52.4.1	SetResult	m	mc17	
A.52.4.1.1	managedObjectClass	m	mm(1)	
A.52.4.1.2	managedObjectInstance	m	mm(1)	
A.52.4.1.3	currentTime	m	mo	
A.52.4.1.4	attributeList	m	mo	
A.52.4.1.4.1	attributeId	m	mm	
A.52.4.1.4.2	attributeValue	m	mm	
A.52.4.2	SetListError	m	mc17	
A.52.4.2.1	managedObjectClass	m	mm(1)	
A.52.4.2.2	managedObjectInstance	m	mm(1)	
A.52.4.2.3	currentTime	m	mo	
A.52.4.2.4	setInfoList	m	mm	
A.52.4.2.4.1	AttributeError	m	mc17	
A.52.4.2.4.1.1	errorStatus	m	mm	2,5,6,24,25
A.52.4.2.4.1.2	modifyOperator	m	mo(2)	0 to 3
A.52.4.2.4.1.3	attributeId	m	mm	
A.52.4.2.4.1.4	attributeValue	m	mo(3)	
A.52.4.2.4.2	Attribute	m	mc17	
A.52.4.2.4.2.1	attributeId	m	mm	
A.52.4.2.4.2.2	attributeValue	m	mm	
A.52.4.3	ProcessingFailure	m	mc17	

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Table A.52 (Cont.) - ROIV-m-LinkedReply-Set (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.52.4.3.1	managedObjectClass	m	mm	
A.52.4.3.2	managedObjectInstance	m	mm(1)	
A.52.4.3.3	SpecificErrorInfo	m	mm	
A.52.4.3.3.1	errorId	m	mm	
A.52.4.3.3.2	errorInfo	m	mm	

(1) CMIS procedures require that object class and object instance be present in linked replies. The ASN.1 productions in CMIP do not reflect this requirement since the same productions are used in both RORS and linked replies PDUs.

(2) Is present if errorStatus is set to invalidOperation or invalidOperator values.

(3) Is absent if modifyOperator is set to default. This also applies to ROER-SetListError.

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Table A.53 - ROIV-m-Set (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.53.1	invokeID	m	mm	
A.53.2	linked-ID	x	xx	
A.53.3	operation-value	m	mm	4
A.53.4	SetArgument	m	mm	
A.53.4.1	baseManagedObjectClass	m	mm	
A.53.4.2	baseManagedObjectInstance	m	mm	
A.53.4.3	accessControl	o	mo	(1)
A.53.4.4	synchronization	c1	mo	0 to 1
A.53.4.5	scope	c1	mo	
A.53.4.6	filter	c2	mo	
A.53.4.7	modificationList	m	mm	
A.53.4.7.1	modifyOperator	o	mo	0 to 3 Default:0 for replace
A.53.4.7.2	attributeId	m	mm	
A.53.4.7.3	attributeValue	m	mc(2)	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present in a user request, the CMIP machine shall include it in the CMIP PDU sent. The CMIP machine does not interpret this parameter.

(2) Shall be present if modifyOperator parameter value is not "setToDefault".

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Table A.54 - ROIV-m-Set (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.54.1	invokeID	m	mm	
A.54.2	linked-ID	x	xx	
A.54.3	operation-value	m	mm	4
A.54.4	SetArgument	m	mm	
A.54.4.1	baseManagedObjectClass	m	mm	
A.54.4.2	baseManagedObjectInstance	m	mm	
A.54.4.3	accessControl	m	mo	(1)
A.54.4.4	synchronization	c1	mo	0 to 1
A.54.4.5	scope	c1	mo	
A.54.4.6	filter	c2	mo	
A.54.4.7	modificationList	m	mm	
A.54.4.7.1	modifyOperator	m	mo	0 to 3 Default:0 for replace
A.54.4.7.2	attributeId	m	mm	
A.54.4.7.3	attributeValue	m	mc(2)	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present on a received CMIP PDU, the CMIP machine shall pass the parameter to the CMISE user. The CMIP machine does not interpret this parameter.

(2) Shall be present if modifyOperator parameter value is not "setToDefault".

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Table A.55 - ROIV-m-Set-Confirmed (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.55.1	invokeID	m	mm	
A.55.2	linked-ID	x	xx	
A.55.3	operation-value	m	mm	5
A.55.4	SetArgument	m	mm	
A.55.4.1	baseManagedObjectClass	m	mm	
A.55.4.2	baseManagedObjectInstance	m	mm	
A.55.4.3	accessControl	o	mo	(1)
A.55.4.4	synchronization	c1	mo	0 to 1
A.55.4.5	scope	c1	mo	
A.55.4.6	filter	c2	mo	
A.55.4.7	modificationList	m	mm	
A.55.4.7.1	modifyOperator	o	mo	0 to 3 Default:0 for replace
A.55.4.7.2	attributeId	m	mm	
A.55.4.7.3	attributeValue	m	mc(2)	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present in a user request, the CMIP machine shall include it in the CMIP PDU sent. The CMIP machine does not interpret this parameter.

(2) Shall be present if modifyOperator parameter value is not "setToDefault".

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Table A.56 - ROIV-m-Set-Confirmed (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.56.1	invokeID	m	mm	
A.56.2	linked-ID	x	xx	
A.56.3	operation-value	m	mm	5
A.56.4	SetArgument	m	mm	
A.56.4.1	baseManagedObjectClass	m	mm	
A.56.4.2	baseManagedObjectInstance	m	mm	
A.56.4.3	accessControl	m	mo	(1)
A.56.4.4	synchronization	c1	mo	0 to 1
A.56.4.5	scope	c1	mo	
A.56.4.6	filter	c2	mo	
A.56.4.7	modificationList	m	mm	
A.56.4.7.1	modifyOperator	m	mo	0 to 3 Default:0 for replace
A.56.4.7.2	attributeId	m	mm	
A.56.4.7.3	attributeValue	m	mc(2)	

(1) In order to parse or process this, there must be an agreement as to what abstract syntax will be used in the external.

If this parameter is present on a received CMIP PDU, the CMIP machine shall pass the parameter to the CMISE user. The CMIP machine does not interpret this parameter.

(2) Shall be present if modifyOperator parameter value is not "setToDefault".

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Table A.57 - RORS-m-Action-Confirmed (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.57.1	invokeID	m	mm(1)	
A.57.2	operation-value	c16	mc16	7
A.57.3	ActionResult	o	mo	
A.57.3.1	managedObjectClass	o	oo(2)	
A.57.3.2	managedObjectInstance	o	oo(2)	
A.57.3.3	currentTime	o	mo	
A.57.3.4	ActionReply	o	mo	
A.57.3.4.1	actionType	m	mm	
A.57.3.4.2	actionReplyInfo	m	mm	

(1) CMIS procedures require that only invokeID parameter is present in RORS closing linked replies. An ASN.1 comment in CMIP Standard reflects this requirement, by reference to ISO/IEC 9595, 8.3.3.2.9.

(2) When the MOS FU is used, it may occur that only one RORS PDU be returned without any previous ROIV-m-LinkedReply PDU. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the RORS PDU, if they do not refer to the base object alone.

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Table A.58 - RORS-m-Action-Confirmed (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.58.1	invokeID	m	mm(1)	
A.58.2	operation-value	m	mc16	7
A.58.3	ActionResult	m	mo	
A.58.3.1	managedObjectClass	m	mo(2)	
A.58.3.2	managedObjectInstance	m	mo(2)	
A.58.3.3	currentTime	m	mo	
A.58.3.4	ActionReply	m	mo	
A.58.3.4.1	actionType	m	mm	
A.58.3.4.2	actionReplyInfo	m	mm	

(1) CMIS procedures require that only invokeID parameter is present in RORS closing linked replies. An ASN.1 comment in CMIP Standard reflects this requirement, by reference to ISO/IEC 9595, 8.3.3.2.9.

(2) When the MOS FU is used, it may occur that only one RORS PDU be returned without any previous ROIV-m-LinkedReply PDU. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the RORS PDU, if they do not refer to the base object alone.

Table A.59 - RORS-m-Cancel-Get (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.59.1	invokeID	m	mm	

Table A.60 - RORS-m-Cancel-Get (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.60.1	invokeID	m	mm	

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Table A.61 - RORS-m-Create (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.61.1	invokeID	m	mm	
A.61.2	operation-value	m	mc16	8
A.61.3	CreateResult	m	mo	
A.61.3.1	managedObjectClass	o	oo	
A.61.3.2	managedObjectInstance	m	mc(1)	
A.61.3.3	currentTime	o	mo	
A.61.3.4	attributeList	o	oo	
A.61.3.4.1	attributeId	m	mm	
A.61.3.4.2	attributeValue	m	mm	

(1) ManagedObjectInstance shall be present if it is not supplied in the ROIV-m-Create PDU.An ASN.1 comment in CMIP standard reflects this requirement by reference to ISO/IEC 9595, 8.3.4.1.3.

Table A.62 - RORS-m-Create (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.62.1	invokeID	m	mm	
A.62.2	operation-value	m	mc16	8
A.62.3	CreateResult	m	mo	
A.62.3.1	managedObjectClass	m	mo	
A.62.3.2	managedObjectInstance	m	mc(1)	
A.62.3.3	currentTime	m	mo	
A.62.3.4	attributeList	m	mo	
A.62.3.4.1	attributeId	m	mm	
A.62.3.4.2	attributeValue	m	mm	

(1) ManagedObjectInstance shall be present if it is not supplied in the ROIV-m-Create PDU.An ASN.1 comment in CMIP standard reflects this requirement by reference to ISO/IEC 9595, 8.3.4.1.3.

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Table A.63 - RORS-m-Delete (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.63.1	invokeID	m	mm(1)	
A.63.2	operation-value	c16	mc16	9
A.63.3	DeleteResult	o	mo	
A.63.3.1	managedObjectClass	o	oo(2)	
A.63.3.2	managedObjectInstance	o	oo(2)	
A.63.3.3	currentTime	o	mo	

(1) CMIS procedures require that only invokeID parameter is present in RORS closing linked replies. An ASN.1 comment in CMIP Standard reflects this requirement, by reference to ISO/IEC 9595, 8.3.5.2.8.

(2) When the MOS FU is used, it may occur that only one RORS PDU be returned without any previous ROIV-m-LinkedReply PDU. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the RORS PDU, if they do not refer to the base object alone.

Table A.64 - RORS-m-Delete (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.64.1	invokeID	m	mm(1)	
A.64.2	operation-value	m	mc16	9
A.64.3	DeleteResult	m	mo	
A.64.3.1	managedObjectClass	m	mo(2)	
A.64.3.2	managedObjectInstance	m	mo(2)	
A.64.3.3	currentTime	m	mo	

(1) CMIS procedures require that only invokeID parameter is present in RORS closing linked replies. An ASN.1 comment in CMIP Standard reflects this requirement, by reference to ISO/IEC 9595, 8.3.5.2.8.

(2) When the MOS FU is used, it may occur that only one RORS PDU be returned without any previous ROIV-m-LinkedReply PDU. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the RORS PDU, if they do not refer to the base object alone.

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Table A.65 - RORS-m-EventReport-Confirmed (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.65.1	invokeID	m	mm	
A.65.2	operation-value	c16	mc16	1
A.65.3	EventReportResult	o	mo	
A.65.3.1	managedObjectClass	o	oo	
A.65.3.2	managedObjectInstance	o	oo	
A.65.3.3	currentTime	o	mo	
A.65.3.4	EventReply	o	mo	
A.65.3.4.1	eventType	m	mm	
A.65.3.4.2	eventReplyInfo	o	mo	

Table A.66 - RORS-m-EventReport-Confirmed (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.66.1	invokeID	m	mm	
A.66.2	operation-value	m	mc16	1
A.66.3	EventReportResult	m	mo	
A.66.3.1	managedObjectClass	m	mo	
A.66.3.2	managedObjectInstance	m	mo	
A.66.3.3	currentTime	m	mo	
A.66.3.4	EventReply	m	mo	
A.66.3.4.1	eventType	m	mm	
A.66.3.4.2	eventReplyInfo	m	mo	

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Table A.67 - RORS-m-Get (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.67.1	invokeID	m	mm(1)	
A.67.2	operation-value	m	mc16	3
A.67.3	GetResult	m	mo	
A.67.3.1	managedObjectClass	o	oo(2)	
A.67.3.2	managedObjectInstance	o	oo(2)	
A.67.3.3	currentTime	o	mo	
A.67.3.4	attributeList	m	mm(3)	
A.67.3.4.1	attributeId	m	mm	
A.67.3.4.2	attributeValue	m	mm	

(1) CMIS procedures require that only invokeID parameter is present in RORS closing linked replies: an ASN.1 comment in CMIP standard reflects this requirement, by reference to ISO/IEC 9595, 8.3.1.2.8.

(2) When the MOS FU is used, it may occur that only one RORS PDU be returned without any previous ROIV-m-LinkedReply PDU. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the RORS PDU, if they do not refer to the base object alone.

(3) If an empty list is supplied in the attributeIdList parameter of ROIV-m-Get, (as distinct from no list), the attributeList parameter returned shall be empty.

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Table A.68 - RORS-m-Get (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.68.1	invokeID	m	mm(1)	
A.68.2	operation-value	m	mc16	3
A.68.3	GetResult	m	mo	
A.68.3.1	managedObjectClass	m	mo(2)	
A.68.3.2	managedObjectInstance	m	mo(2)	
A.68.3.3	currentTime	m	mo	
A.68.3.4	attributeList	m	mm(3)	
A.68.3.4.1	attributeId	m	mm	
A.68.3.4.2	attributeValue	m	mm	

(1) CMIS procedures require that only invokeID parameter is present in RORS closing linked replies: an ASN.1 comment in CMIP standard reflects this requirement, by reference to ISO/IEC 9595, 8.3.1.2.8.

(2) When the MOS FU is used, it may occur that only one RORS PDU be returned without any previous ROIV-m-LinkedReply PDU. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the RORS PDU, if they do not refer to the base object alone.

(3) If an empty list is supplied in the attributeIdList parameter of ROIV-m-Get, (as distinct from no list), the attributeList parameter returned shall be empty.

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Table A.69 - RORS-m-Set-Confirmed (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.69.1	invokeID	m	mm(1)	
A.69.2	operation-value	c16	mc16	5
A.69.3	SetResult	o	mo	
A.69.3.1	managedObjectClass	o	oo(2)	
A.69.3.2	managedObjectInstance	o	oo(2)	
A.69.3.3	currentTime	o	mo	
A.69.3.4	attributeList	o	mo	
A.69.3.4.1	attributeId	m	mm	
A.69.3.4.2	attributeValue	m	mm	

(1) CMIS procedures require that only invokeID parameter is present in RORS closing linked replies: an ASN.1 comment in CMIP standard reflects this requirement, by reference to ISO/IEC 9595, 8.3.2.2.9.

(2) When the MOS FU is used, it may occur that only one RORS PDU be returned without any previous ROIV-m-LinkedReply PDU. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the RORS PDU, if they do not refer to the base object alone.

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Table A.70 - RORS-m-Set-Confirmed (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.70.1	invokeID	m	mm(1)	
A.70.2	operation-value	m	mc16	5
A.70.3	SetResult	m	mo	
A.70.3.1	managedObjectClass	m	mo(2)	
A.70.3.2	managedObjectInstance	m	mo(2)	
A.70.3.3	currentTime	m	mo	
A.70.3.4	attributeList	m	mo	
A.70.3.4.1	attributeId	m	mm	
A.70.3.4.2	attributeValue	m	mm	

(1) CMIS procedures require that only invokeID parameter is present in RORS closing linked replies: an ASN.1 comment in CMIP standard reflects this requirement, by reference to ISO/IEC 9595, 8.3.2.2.9.

(2) When the MOS FU is used, it may occur that only one RORS PDU be returned without any previous ROIV-m-LinkedReply PDU. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the RORS PDU, if they do not refer to the base object alone.

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Table A.71 - ROER-accessDenied (sending)

Valid return only for invoked operationValues: 3, 5, 7, 8, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.71.1	invokeID	m	mm	
A.71.2	error-value	m	mm	2

Table A.72 - ROER-accessDenied (receiving)

Valid return only for invoked operationValues: 3, 5, 7, 8, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.72.1	invokeID	m	mm	
A.72.2	error-value	m	mm	2

Table A.73 - ROER-classInstanceConflict (sending)

Valid return only for invoked operationValues: 3, 5, 7, 8, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.73.1	invokeID	m	mm	
A.73.2	error-value	m	mm	19
A.73.3	BaseManagedObjectId	m	mm	
A.73.3.1	baseManagedObjectClass	m	mm	
A.73.3.2	baseManagedObjectInstance	m	mm	

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Table A.74 - ROER-classInstanceConflict (receiving)

Valid return only for invoked operationValues: 3, 5, 7, 8, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.74.1	invokeID	m	mm	
A.74.2	error-value	m	mm	19
A.74.3	BaseManagedObjectId	m	mm	
A.74.3.1	baseManagedObjectClass	m	mm	
A.74.3.2	baseManagedObjectInstance	m	mm	

Table A.75 - ROER-complexityLimitation (sending)

Valid return only for invoked operationValues: 3, 5, 7, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.75.1	invokeID	m	mm	
A.75.2	error-value	m	mm	20
A.75.3	ComplexityLimitation	o	mo	(1)
A.75.3.1	scope	o	mo	
A.75.3.2	filter	o	mo	
A.75.3.3	sync	o	mo	0 to 1

(1) The presence and the contents of the ComplexityLimitation parameter is conditioned by the MOS FU and/or the Filter FU support. The absence of this parameter or the presence of an empty ASN.1 Set type is conditioned by the occurence of a complexity limitation about other parameters, e.g. actionInfoArg parameter.

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Table A.76 - ROER-complexityLimitation (receiving)

Valid return only for invoked operationValues: 3, 5, 7, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.76.1	invokeID	m	mm	
A.76.2	error-value	m	mm	20
A.76.3	ComplexityLimitation	m	mo	(1)
A.76.3.1	scope	m	mo	
A.76.3.2	filter	m	mo	
A.76.3.3	sync	m	mo	0 to 1

(1) The presence and the contents of the ComplexityLimitation parameter is conditioned by the MOS FU and/or the Filter FU support. The absence of this parameter or the presence of an empty ASN.1 Set type is conditioned by the occurence of a complexity limitation about other parameters, e.g. actionInfoArg parameter.

Table A.77 - ROER-duplicateManagedObjectInstance (sending)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.77.1	invokeID	m	mm	
A.77.2	error-value	m	mm	11
A.77.3	ObjectInstance	m	mm	

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Table A.78 - ROER-duplicateManagedObjectInstance (receiving)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.78.1	invokeID	m	mm	
A.78.2	error-value	m	mm	11
A.78.3	ObjectInstance	m	mm	

Table A.79 - ROER-getListError (sending)

Valid return only for invoked operationValues: 3

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.79.1	invokeID	m	mm	
A.79.2	error-value	m	mm	7
A.79.3	GetListError	m	mm	
A.79.3.1	managedObjectClass	o	oo(1)	
A.79.3.2	managedObjectInstance	o	oo(1)	
A.79.3.3	currentTime	o	mo	
A.79.3.4	getInfoList	m	mm	
A.79.3.4.1	AttributeIdError	m	mc17	
A.79.3.4.1.1	errorStatus	m	mm	2,5
A.79.3.4.1.2	attributeId	m	mm	
A.79.3.4.2	Attribute	m	mc17	
A.79.3.4.2.1	attributeId	m	mm	
A.79.3.4.2.2	attributeValue	m	mm	

(1) When the MOS FU is used, it may occur that only one ROER PDU be returned. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the ROER PDU, if they do not refer to the base object alone.

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Table A.80 - ROER-getListError (receiving)

Valid return only for invoked operationValues: 3

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.80.1	invokeID	m	mm	
A.80.2	error-value	m	mm	7
A.80.3	GetListError	m	mm	
A.80.3.1	managedObjectClass	m	mo(1)	
A.80.3.2	managedObjectInstance	m	mo(1)	
A.80.3.3	currentTime	m	mo	
A.80.3.4	getInfoList	m	mm	
A.80.3.4.1	AttributeIdError	m	mc17	
A.80.3.4.1.1	errorStatus	m	mm	2,5
A.80.3.4.1.2	attributeId	m	mm	
A.80.3.4.2	Attribute	m	mc17	
A.80.3.4.2.1	attributeId	m	mm	
A.80.3.4.2.2	attributeValue	m	mm	

(1) When the MOS FU is used, it may occur that only one ROER PDU be returned. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the ROER PDU, if they do not refer to the base object alone.

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Table A.81 - ROER-invalidArgumentValue (sending)

Valid return only for invoked operationValues: 1, 7

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.81.1	invokeID	m	mm	
A.81.2	error-value	m	mm	15
A.81.3	InvalidArgumentValue	m	mm	
A.81.3.1	actionValue	m	mc17	
A.81.3.1.1	actionType	m	mm	
A.81.3.1.2	actionInfoArg	o	mo	
A.81.3.2	eventValue	m	mc17	
A.81.3.2.1	eventType	m	mm	
A.81.3.2.2	eventInfo	o	mo	

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Table A.82 - ROER-invalidArgumentValue (receiving)

Valid return only for invoked operationValues: 1, 7

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.82.1	invokeID	m	mm	
A.82.2	error-value	m	mm	15
A.82.3	InvalidArgumentValue	m	mm	
A.82.3.1	actionValue	m	mc17	
A.82.3.1.1	actionType	m	mm	
A.82.3.1.2	actionInfoArg	m	mo	
A.82.3.2	eventValue	m	mc17	
A.82.3.2.1	eventType	m	mm	
A.82.3.2.2	eventInfo	m	mo	

Table A.83 - ROER-invalidAttributeValue (sending)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.83.1	invokeID	m	mm	
A.83.2	error-value	m	mm	6
A.83.3	Attribute	m	mm	
A.83.3.1	attributeId	m	mm	
A.83.3.2	attributeValue	m	mm	

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Table A.84 - ROER-invalidAttributeValue (receiving)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.84.1	invokeID	m	mm	
A.84.2	error-value	m	mm	6
A.84.3	Attribute	m	mm	
A.84.3.1	attributeId	m	mm	
A.84.3.2	attributeValue	m	mm	

Table A.85 - ROER-invalidFilter (sending)

Valid return only for invoked operationValues: 3, 5, 7, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.85.1	invokeID	m	mm	
A.85.2	error-value	m	mm	4
A.85.3	CMISFilter	m	mm	

Table A.86 - ROER-invalidFilter (receiving)

Valid return only for invoked operationValues: 3, 5, 7, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.86.1	invokeIA.78D	m	mm	
A.86.2	error-value	m	mm	4
A.86.3	CMISFilter	m	mm	

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Table A.87 - ROER-invalidObjectInstance (sending)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.87.1	invokeID	m	mm	
A.87.2	error-value	m	mm	17
A.87.3	ObjectInstance	m	mm	

Table A.88 - ROER-invalidObjectInstance (receiving)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.88.1	invokeID	m	mm	
A.88.2	error-value	m	mm	17
A.88.3	ObjectInstance	m	mm	

Table A.89 - ROER-invalidScope (sending)

Valid return only for invoked operationValues: 3, 5, 7, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.89.1	invokeID	m	mm	
A.89.2	error-value	m	mm	16
A.89.3	Scope	m	mm	

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Table A.90 - ROER-invalidScope (receiving)

Valid return only for invoked operationValues: 3, 5, 7, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.90.1	invokeID	m	mm	
A.90.2	error-value	m	mm	16
A.90.3	Scope	m	mm	

Table A.91 - ROER-missingAttributeValue (sending)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.91.1	invokeID	m	mm	
A.91.2	error-value	m	mm	18
A.91.3	AttributeId	m	mm	

Table A.92 - ROER-missingAttributeValue (receiving)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.92.1	invokeID	m	mm	
A.92.2	error-value	m	mm	18
A.92.3	AttributeId	m	mm	

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Table A.93 - ROER-mistypedOperation (sending)

Valid return only for invoked operationValues: 10

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.93.1	invokeID	m	mm	
A.93.2	error-value	m	mm	21

Table A.94 - ROER-mistypedOperation (receiving)

Valid return only for invoked operationValues: 10

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.94.1	invokeID	m	mm	
A.94.2	error-value	m	mm	21

Table A.95 - ROER-noSuchAction (sending)

Valid return only for invoked operationValues: 7

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.95.1	invokeID	m	mm	
A.95.2	error-value	m	mm	9
A.95.3	NoSuchAction	m	mm	
A.95.3.1	managedObjectClass	m	mm	
A.95.3.2	actionType	m	mm	

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Table A.96 - ROER-noSuchAction (receiving)

Valid return only for invoked operationValues: 7

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.96.1	invokeID	m	mm	
A.96.2	error-value	m	mm	9
A.96.3	NoSuchAction	m	mm	
A.96.3.1	managedObjectClass	m	mm	
A.96.3.2	actionType	m	mm	

Table A.97 - ROER-noSuchArgument (sending)

Valid return only for invoked operationValues: 1, 7

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.97.1	invokeID	m	mm	
A.97.2	error-value	m	mm	14
A.97.3	NoSuchArgument	m	mm	
A.97.3.1	actionId	m	mc17	
A.97.3.1.1	managedObjectClass	o	oo	
A.97.3.1.2	actionType	m	mm	
A.97.3.2	eventId	m	mc17	
A.97.3.2.1	managedObjectClass	o	oo	
A.97.3.2.2	eventType	m	mm	

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Table A.98 - ROER-noSuchArgument (receiving)

Valid return only for invoked operationValues: 1, 7

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.98.1	invokeID	m	mm	
A.98.2	error-value	m	mm	14
A.98.3	NoSuchArgument	m	mm	
A.98.3.1	actionId	m	mc17	
A.98.3.1.1	managedObjectClass	m	mo	
A.98.3.1.2	actionType	m	mm	
A.98.3.2	eventId	m	mc17	
A.98.3.2.1	managedObjectClass	m	mo	
A.98.3.2.2	eventType	m	mm	

Table A.99 - ROER-noSuchAttribute (sending)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.99.1	invokeID	m	mm	
A.99.2	error-value	m	mm	5
A.99.3	AttributeId	m	mm	

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Table A.100 - ROER-noSuchAttribute (receiving)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.100.1	invokeID	m	mm	
A.100.2	error-value	m	mm	5
A.100.3	AttributeId	m	mm	

Table A.101 - ROER-noSuchEventType (sending)

Valid return only for invoked operationValues: 1

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.101.1	invokeID	m	mm	
A.101.2	error-value	m	mm	13
A.101.3	NoSuchEventType	m	mm	
A.101.3.1	managedObjectClass	m	mm	
A.101.3.2	eventType	m	mm	

Table A.102 - ROER-noSuchEventType (receiving)

Valid return only for invoked operationValues: 1

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.102.1	invokeID	m	mm	
A.102.2	error-value	m	mm	13
A.102.3	NoSuchEventType	m	mm	
A.102.3.1	managedObjectClass	m	mm	
A.102.3.2	eventType	m	mm	

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Table A.103 - ROER-noSuchInvokeId (sending)

Valid return only for invoked operationValues: 10

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.103.1	invokeID	m	mm	
A.103.2	error-value	m	mm	22
A.103.3	InvokeIDType	m	mm	

Table A.104 - ROER-noSuchInvokeId (receiving)

Valid return only for invoked operationValues: 10

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.104.1	invokeID	m	mm	
A.104.2	error-value	m	mm	22
A.104.3	InvokeIDType	m	mm	

Table A.105 - ROER-noSuchObjectClass (sending)

Valid return only for invoked operationValues: 1, 3, 5, 7, 8, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.105.1	invokeID	m	mm	
A.105.2	error-value	m	mm	0
A.105.3	ObjectClass	m	mm	

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Table A.106 - ROER-noSuchObjectClass (receiving)

Valid return only for invoked operationValues: 1, 3, 5, 7, 8, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.106.1	invokeID	m	mm	
A.106.2	error-value	m	mm	0
A.106.3	ObjectClass	m	mm	

Table A.107 - ROER-noSuchObjectInstance (sending)

Valid return only for invoked operationValues: 1, 3, 5, 7, 8, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.107.1	invokeID	m	mm	
A.107.2	error-value	m	mm	1
A.107.3	ObjectInstance	m	mm	

NOTE - This error PDU is recommended as a response to CMIP operations using a filter as base managed object alone when the filter evaluates to False.

Table A.108 - ROER-noSuchObjectInstance (receiving)

Valid return only for invoked operationValues: 1, 3, 5, 7, 8, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.108.1	invokeID	m	mm	
A.108.2	error-value	m	mm	1
A.108.3	ObjectInstance	m	mm	

NOTE - This error PDU is recommended as a response to CMIP operations using a filter as base managed object alone when the filter evaluates to False.

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Table A.109 - ROER-noSuchReferenceObject (sending)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.109.1	invokeID	m	mm	
A.109.2	error-value	m	mm	12
A.109.3	ObjectInstance	m	mm	

Table A.110 - ROER-noSuchReferenceObject (receiving)

Valid return only for invoked operationValues: 8

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.110.1	invokeID	m	mm	
A.110.2	error-value	m	mm	12
A.110.3	ObjectInstance	m	mm	

Table A.111 - ROER-operationCancelled (sending)

Valid return only for invoked operationValues: 3

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.111.1	invokeID	m	mm	
A.111.2	error-value	m	mm	23

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Table A.112 - ROER-operationCancelled (receiving)

Valid return only for invoked operationValues: 3

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.112.1	invokeID	m	mm	
A.112.2	error-value	m	mm	23

Table A.113 - ROER-processingFailure (sending)

Valid return only for invoked operationValues: 1, 3, 5, 7, 8, 9, 10

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.113.1	invokeID	m	mm	
A.113.2	error-value	m	mm	10
A.113.3	ProcessingFailure	o	mo	
A.113.3.1	managedObjectClass	m	mm	
A.113.3.2	managedObjectInstance	o	mo	
A.113.3.3	SpecificErrorInfo	m	mm	
A.113.3.3.1	errorId	m	mm	
A.113.3.3.2	errorInfo	m	mm	

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Table A.114 - ROER-processingFailure (receiving)

Valid return only for invoked operationValues: 1, 3, 5, 7, 8, 9, 10

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.114.1	invokeID	m	mm	
A.114.2	error-value	m	mm	10
A.114.3	ProcessingFailure	m	mo	
A.114.3.1	managedObjectClass	m	mm	
A.114.3.2	managedObjectInstance	m	mo	
A.114.3.3	SpecificErrorInfo	m	mm	
A.114.3.3.1	errorId	m	mm	
A.114.3.3.2	errorInfo	m	mm	

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Table A.115 - ROER-setListError (sending)

Valid return only for invoked operationValues: 5

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.115.1	invokeID	m	mm	
A.115.2	error-value	m	mm	8
A.115.3	SetListError	m	mm	
A.115.3.1	managedObjectClass	o	oo(3)	
A.115.3.2	managedObjectInstance	o	oo(3)	
A.115.3.3	currentTime	o	mo	
A.115.3.4	setInfoList	m	mm	
A.115.3.4.1	AttributeError	m	mc17	
A.115.3.4.1.1	errorStatus	m	mm	2,5,6,24,25
A.115.3.4.1.2	modifyOperator	m	mo(1)	0 to 3
A.115.3.4.1.3	attributeId	m	mm	
A.115.3.4.1.4	attributeValue	m	mo(2)	
A.115.3.4.2	Attribute	m	mc17	
A.115.3.4.2.1	attributeId	m	mm	
A.115.3.4.2.2	attributeValue	m	mm	

(1) Is present if errorStatus is set to invalidOperation or invalidOperator values.

(2) Is absent if modifyOperator is set to default.

(3) When the MOS FU is used, it may occur that only one ROER PDU be returned. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the ROER PDU, if they do not refer to the base object alone.

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Table A.116 - ROER-setListError (receiving)

Valid return only for invoked operationValues: 5

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.116.1	invokeID	m	mm	
A.116.2	error-value	m	mm	8
A.116.3	SetListError	m	mm	
A.116.3.1	managedObjectClass	m	mo(3)	
A.116.3.2	managedObjectInstance	m	mo(3)	
A.116.3.3	currentTime	m	mo	
A.116.3.4	setInfoList	m	mm	
A.116.3.4.1	AttributeError	m	mc17	
A.116.3.4.1.1	errorStatus	m	mm	2,5,6,24,25
A.116.3.4.1.2	modifyOperator	m	mo(1)	0 to 3
A.116.3.4.1.3	attributeId	m	mm	
A.116.3.4.1.4	attributeValue	m	mo(2)	
A.116.3.4.2	Attribute	m	mc17	
A.116.3.4.2.1	attributeId	m	mm	
A.116.3.4.2.2	attributeValue	m	mm	

(1) Is present if errorStatus is set to invalidOperation or invalidOperator values.

(2) Is absent if modifyOperator is set to default.

(3) When the MOS FU is used, it may occur that only one ROER PDU be returned. In this case, the managedObjectClass and managedObjectInstance parameters shall be present in the ROER PDU, if they do not refer to the base object alone.

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Table A.117 - ROER-syncNotSupported (sending)

Valid return only for invoked operationValues: 3, 5, 7, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.117.1	invokeID	m	mm	
A.117.2	error-value	m	mm	3
A.117.3	CMISSync	m	mm	0 to 1

Table A.118 - ROER-syncNotSupported (receiving)

Valid return only for invoked operationValues: 3, 5, 7, 9

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.118.1	invokeID	m	mm	
A.118.2	error-value	m	mm	3
A.118.3	CMISSync	m	mm	0 to 1

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Table A.119 - RORJ (sending)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.119.1	invokeID	m	mm	
A.119.1.1		o.1	mc17	Integer
A.119.1.2		o.1	oc17	Null
A.119.2	problem	m	mm	
A.119.2.1	generalProblem	o	mc17	0 to 2
A.119.2.2	invokeProblem	m	mc17	0 to 3 mandatory, 4 to 7 optional
A.119.2.3	returnResultProblem	o	oc17	0 to 2
A.119.2.4	returnErrorProblem	o	oc17	0 to 4

NOTE - ISO/IEC 9072-2 mandates support for generalProblem.

Table A.120 - RORJ (receiving)

Index	Parameter name	Base Std.	Profile	Type, value(s) & range(s)
A.120.1	invokeID	m	mm	
A.120.1.1		m	mc17	Integer
A.120.1.2		m	mc17	Null
A.120.2	problem	m	mm	
A.120.2.1	generalProblem	m	mp	0 to 2
A.120.2.2	invokeProblem	m	mo	0 to 7, may ignore 4 to 7
A.120.2.3	returnResultProblem	m	mp	0 to 2
A.120.2.4	returnErrorProblem	m	mp	0 to 4

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A.6 Negotiation capabilities

The supplier of the implementation shall indicate support for negotiation capabilities in table A.121.

Table A.121 - Negotiation capabilities

Index	Capability	Base Std.	Profile	Support
A.121.1	Does the implementation support CMIP protocol version negotiation?	o	o	
A.121.2	Does the implementation support CMIS functional unit negotiation?	o	m	

A.7 Multi-layer dependencies

The supplier of the implementation shall state whether or not the association and operation classes defined by ISO/IEC 9072-1 are supported, in table A.122.

Table A.122 - ROSE association and operation class support

Index	Capability	Base Std.	Profile	Support
A.122.1	Does the implementation support ROSE association class 3?	m	m	
A.122.2	Does the implementation support ROSE operation class 1?	o.1	o	
A.122.3	Does the implementation support ROSE operation class 2?	o.1	m	
A.122.4	Does the implementation support ROSE operation class 5?	m	m	

Table A.123 - Presentation functional unit support

NOTE - The table of the presentation functional unit support is specified in ISO/IEC ISP 11183-1, annex B, B.2.3, "Functional Units".

Table A.124 - Session functional unit support

NOTE - The table of the session functional unit support is specified in ISO/IEC ISP 11183-1, annex C, C.2.1, "Supported Functions".

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A.8 List of CMISE Service Errors

The following table summarizes the valid occurrences of the CMISE errors:
"v" stands for valid in the scope of the profile AOM12,
"-" stands for not applicable.

Table A.125 - CMISE Service Errors

Error	Action 7	Cancel Get 10	Create 8	Delete 9	Event Report 1	Get 3	Set 5
accessDenied	v	-	v	v	-	v	v
classInstanceConflict	v	-	v	v	-	v	v
complexityLimitation	v	-	-	v	-	v	v
duplicateInvocation (1)	v	v	v	v	v	v	v
duplicateManagedObjectInstance	-	-	v	-	-	-	-
getListError	-	-	-	-	-	v	-
invalidArgumentValue	v	-	-	-	v	-	-
invalidAttributeValue	-	-	v	-	-	-	-
invalidFilter	v	-	-	v	-	v	v
invalidObjectInstance	-	-	v	-	-	-	-
invalidScope	v	-	-	v	-	v	v
missingAttributeValue	-	-	v	-	-	-	-
mistypedArgument (1)	v	-	v	v	v	v	v
mistypedOperation	-	v	-	-	-	-	-
noSuchAction	v	-	-	-	-	-	-
noSuchArgument	v	-	-	-	v	-	-
noSuchAttribute	-	-	v	-	-	-	-
noSuchEventType	-	-	-	-	v	-	-
noSuchInvokeId	-	v	-	-	-	-	-

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Table A.125 (Cont.) - CMISE Service Errors

Error	Action 7	Cancel Get 10	Create 8	Delete 9	Event Report 1	Get 3	Set 5
noSuchObjectClass	v	-	v	v	v	v	v
noSuchObjectInstance	v	-	v	v	v	v	v
noSuchReferenceObject	-	-	v	-	-	-	-
operationCancelled	-	-	-	-	-	v	-
processingFailure	v	v	v	v	v	v	v
resourceLimitation (1)	v	v	v	v	v	v	v
setListError	-	-	-	-	-	-	v
synchronizationNotSupported	v	-	-	v	-	v	v
unrecognizedOperation (1)	v	v	v	v	v	v	v

(1) CMISE Service errors mapped onto RORJ PDU.

A.9 List of ASN.1 elements specified with "ANY DEFINED BY" type.

actionInfoArg
actionReplyInfo
attributeValue
errorInfo
eventInfo
eventReplyInfo
namingAttributeValue
string

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UDC 681.3:621.39

Descriptors: data processing, information interchange, network interconnection, open systems interconnection, data transmission, presentation layer, session layer, communication procedure, profiles.

Price based on 101 pages

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