INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Amendment 1
X.730
(04/95)

DATA NETWORKS AND OPEN SYSTEM
COMMUNICATIONS

OSI MANAGEMENT

INFORMATION TECHNOLOGY –
OPEN SYSTEMS INTERCONNECTION –
SYSTEMS MANAGEMENT: OBJECT
MANAGEMENT FUNCTION – AMENDMENT 1:

IMPLEMENTATION CONFORMANCE
STATEMENT PROFORMAS

Amendment 1 to
ITU-T Recommendation X.730

(Previously "CCITT Recommendations")

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. Some 179 member countries, 84 telecom operating entities, 145 scientific and industrial organizations and 38 international organizations participate in ITU-T which is the body which sets world telecommunications standards (Recommendations).

The approval of Recommendations by the Members of ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, 1993). In addition, the World Telecommunication Standardization Conference (WTSC), which meets every four years, approves Recommendations submitted to it and establishes the study programme for the following period.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC. The text of ITU-T Recommendation X.730, Amendment 1, was approved on 10th of April 1995. The identical text is also published as ISO/IEC International Standard 10164-1.

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NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized private operating agency.

ITU-T X-SERIES RECOMMENDATIONS

DATA NETWORKS AND OPEN SYSTEM COMMUNICATIONS

(February 1994)

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Summary

This amendment includes tables, which document the mandatory and optional management information specific to the Object Management Function. This amendment will be used by Profile specifiers, for example those developing International Standardized Profiles (ISPs), to specify and explicit subset of capability, which will afford interoperability between implementatations. The tables also include a column for equipment vendors to state the capability of their products in terms of the Profiles or base specification. The table structures comply with the Guidelines for Implementation Conformance Statement Proformas specified in ITU-T Rec. X.724 | ISO/IEC 10165-6.

INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION – SYSTEMS MANAGEMENT: OBJECT MANAGEMENT FUNCTION

AMENDMENT 1
(to Rec. X.730 | ISO/IEC 10164-1)

Implementation conformance statement proformas

1) *Add the following footnote to the first list item in 2.1:*

"[1] As amended by ITU-T Rec. X.701/Cor.2 | ISO/IEC 10040/Cor.2"

2) *Add the following reference to 2.1:*

"– ITU-T Recommendation X.724 (1993) | ISO/IEC 10165-6:1994, *Information technology – Open Systems Interconnection – Structure of management information: Requirements and guidelines for implementation conformance statement proformas associated with OSI management.*"

3) *Add the following references to 2.2:*

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

ISO/IEC 9646-2:1994, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 2: Abstract Test Suite specification*.

– ITU-T Recommendation X.296[2], *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – Implementation conformance statements.*

ISO/IEC 9646-7[2], *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 7: Implementation conformance statements*."

And then add the following footnote:

[2] Presently at the stage of draft.

4) *Apply the following changes to 3.4:*

Add the following items to the list

"Management Information Conformance Statement (MICS)"

"Managed Object Conformance Statement (MOCS)"

"MICS proforma"

"MOCS proforma".

Delete item c) and d), re-label the list and re-arrange the list in alphabetic order.

5) *Apply the following change to 3.7:*

Replace "system conformance statement" *with the following*:

"a) PICS proforma;

b) protocol implementation conformance statement;

c) system conformance statement."

6)   *Insert the following new subclause:*

"3.8   Implementation conformance statement proforma definitions

This Recommendation | International Standard makes use of the following terms defined in ITU-T Rec. X.724 | ISO/IEC 10165-6:

      a)   Managed Relationship Conformance Statement (MRCS);

      b)   Management Conformance Summary (MCS);

      c)   MCS proforma;

      d)   MRCS proforma."

7)   *Add the following abbreviations to clause 4:*

      "ICS   Implementation Conformance Statement

      MCS   Management Conformance Summary

      MICS   Management Information Conformance Statement

      MIDS   Management Information Definition Statement

      MOCS   Managed Object Conformance Statement

      MRCS   Managed Relationship Conformance Statement

      PICS   Protocol Implementation Conformance Statement"

8)   *Replace clause 13 by the following:*

"13   Conformance

Implementations claiming to conform to this Recommendation | International Standard shall comply with the conformance requirements as defined in the following subclauses.

13.1   Static conformance

The implementation shall conform to the requirements of this Recommendation | International Standard in the manager role, the agent role, or both roles. A claim of conformance to at least one role shall be made in Table A.1.

If a claim of conformance is made for support in the manager role, the implementation shall support at least one of the notifications or at least one of the management operations specified in this Recommendation | International Standard. The conformance requirements in the manager role for those management operations and notifications, are identified in Table A.3 and further tables referenced by Annex A.

If a claim of conformance is made for support in the agent role, the implementation shall support at least one of the notifications specified in this Recommendation | International Standard. The conformance requirements in the agent role are identified in Table A.4 and further tables referenced by Annex A.

The implementation shall support the transfer syntax derived from the encoding rules specified in CCITT Rec. X.209 | ISO/IEC 8825 named {joint-iso-ccitt asn1(1) basicEncoding(1)} for the abstract data types referenced by the definitions for which support is claimed.

        NOTE – Prior to the publication of this amendment, this Recommendation | International Standard identified general and dependent conformance classes. A claim of conformance similar to general conformance class can be made by stating support in the manager role, the agent role, or both roles, for object events functional unit in Table A.2. A claim of conformance similar to dependent conformance class can be made by stating support for at least one of the items in Tables A.3 or A.4.

13.2   Dynamic conformance

Implementations claiming to conform to this Recommendation | International Standard shall support the elements of procedure and definitions of semantics corresponding to the definitions for which support is claimed.

13.3   Management implementation conformance statement requirements

Any MCS proforma, MICS proforma, MOCS proforma, and PICS proforma which conforms to this Recommendation | International Standard shall be technically identical to the proformas specified in Annexes A, B, C, E preserving table numbering and the index numbers of items, and differing only in pagination and page headers.

The supplier of an implementation which is claimed to conform to this Recommendation | International Standard shall complete a copy of the Management Conformance Summary (MCS) provided in Annex A as part of the conformance requirements together with any other ICS proformas referenced as applicable from that MCS. An ICS which conforms to this Recommendation | International Standard shall:

–   describe an implementation which conforms to this Recommendation | International Standard;

–   have been completed in accordance with the instructions for completion given in ITU-T Rec. X.724 | ISO/IEC 10165-6;

–   include the information necessary to uniquely identify both the supplier and the implementation.

Claims of conformance to the management information defined in this Recommendation | International Standard in managed object classes defined elsewhere shall include the requirements of the MIDS proforma, as specified in Annexe D, in the MOCS for the managed object class."

9)   *Apply the following change to 11.1.1.2.1:*

In the last sentence replace "11.1.2.2" *by* "11.1.1.2.2"

10)   *Apply the following change to 11.1.8.2.1:*

In the last sentence replace "11.1.6.2.2" *by* "11.1.8.2.2"

11)   *Add the following annexes:*

Annex A

MCS proforma[3]

(This annex forms an integral part of this Recommendation | International Standard)

A.1   Introduction

A.1.1   Purpose and structure

The Management Conformance Summary (MCS) is a statement by a supplier that identifies an implementation and provides information on whether the implementation claims conformance to any of the listed set of documents that specify conformance requirements to OSI management.

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

A.1.2   Instructions for completing the MCS proforma to produce an MCS

The supplier of the implementation shall enter an explicit statement in each of the boxes provided. Specific instruction is provided in the text which precedes each table.

A.1.3   Symbols, abbreviations and terms

For all annexes of this Recommendation | International Standard, the following common notations, defined in CCITT Rec. X.291 | ISO/IEC 9646-2 and ITU-T Rec. X.296 | ISO/IEC 9646-7 are used for the Status column:

    m   Mandatory;

    o   Optional;

    c   Conditional;

    x   Prohibited;

    –   Not applicable or out of scope.

    NOTES

    1 'c', 'm', and 'o' are prefixed by a 'c:' when nested under a conditional or optional item of the same table;

    2 'o' may be suffixed by '.N' (where N is a unique number) for selectable options among a set of status values. Support of at least one of the choices (from the items with the same values of N) is required.

For all annexes of this Recommendation | International Standard, the following common notations, defined in CCITT Rec. X.291 | ISO/IEC 9646-2 and ITU-T Rec. X.296 | ISO/IEC 9646-7 are used for the Support column:

    Y   Implemented;

    N   Not implemented;

    –   No answer required;

    Ig   The item is ignored (i.e. processed syntactically but not semantically).

A.1.4   Table format

Some of the tables in this Recommendation | International Standard have been split because the information is too wide to fit on the page. Where this occurs, the index number of the first block of columns are the index numbers of the corresponding rows of the remaining blocks of columns. A complete table reconstructed from the constituent parts should have the following layout:

Index	First block of columns	Second block of columns	Etc.

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[3] Users of this Recommendation | International Standard may freely reproduce the MCS proforma in this annex so that it can be used for its intended purpose, and may further publish the completed MCS. Instructions for completing the MCS proforma are specified in ITU-T Rec.X.724 | ISO/IEC 10165-6.

In this Recommendation | International Standard the constituent parts of the table appear consecutively, starting with the first block of columns.

When a table with sub-rows is too wide to fit on a page, the continuation tables(s) have been constructed with index numbers identical to the index numbers in the corresponding rows of the first table, and with sub-index numbers corresponding to the sub-rows within each indexed row. For example, if Table X.1 has 2 rows and the continuation of Table X.1 has 2 sub-rows for each row, the tables are presented as follows:

Table X.1 – Title

Index	A	B	C	D	Support		G
					E	F	
1	a	b	–				
2	a	b	–				

Table X.1 (*continued*) – Title

Index	Sub-index	H	I	J	K	L
1	1.1	h	i	j		
	1.2	h	i	j		
2	2.1	h	i	j		
	2.1	h	i	j		

A complete table reconstructed from the constituent parts should have the following layout:

Index	A	B	C	D	Support		G	Sub-index	H	I	J	K	L
					E	F							
1	a	b	–					1.1	h	i	j		
								1.2	h	i	j		
2	a	b	–					2.1	h	i	j		
								2.2	h	i	j		

References made to cells within tables shall be interpreted as references within reconstructed tabled. In the example, above, the reference X.1/1d corresponds to the blank cell in the column G for row with Index 1, and X.1/1.2b corresponds to the blank cell in column L for row with Sub-index 1.2

A.2   Identification of the implementation

A.2.1   Date of statement

The supplier of the implementation shall enter the date of this statement in the box below. Use the format DD-MM-YYYY.

Date of statement

A.2.2   Identification of the implementation

The supplier of the implementation shall enter information necessary to uniquely identify the implementation and the system(s) in which it may reside, in the box below.

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A.2.3   Contact

The supplier of the implementation shall provide information on whom to contact if there are any queries concerning the content of the MCS or any referenced implementation conformance statement, in the box below.

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A.3   Identification of the Recommendations | International Standards in which the management information is defined

The supplier of the implementation shall enter the title, reference number and date of the publication of the Recommendations | International Standards which specify the management information to which conformance is claimed, in the box below.

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Recommendations | International Standards to which conformance is claimed
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A.3.1   Technical corrigenda implemented

The supplier of the implementation shall enter the reference numbers of implemented technical corrigenda which modify the identified Recommendations | International Standards, in the box below.

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A.3.2   Amendments implemented

The supplier of the implementation shall state the titles and reference numbers of implemented amendments to the identified Recommendation | International Standard, in the box below.

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A.4 Management conformance summary

The supplier of implementation shall state the capabilities and features supported and provide a summary of conformance claims to Recommendations | International Standards using the tables in this annex.

The supplier of the implementation shall specify the roles that are supported, in Table A.1.

Table A.1 – Roles

Index	Roles supported	Status	Support	Additional information
1	Manager role support	o.1		
2	Agent role support	o.1		

The supplier of the implementation shall specify support for the systems management functional units in Table A.2.

Table A.2 – Systems management functional unit

Index	Capability	Manager		Agent		Additional information
		Status	Support	Status	Support	
1	objectEvents functional unit	c1		c2		
2	allEvents functional unit	c1		c2		
3	control functional unit	c1		c2		
4	monitor functional unit	c1		c2		

c1: if A.1/1a then o else –.

c2: if A.1/2a then o else –.

The supplier of the implementation shall specify support for management information in the manager role, in Table A.3.

Table A.3 – Manager role minimum conformance requirement

Index	Item	Status	Support	Additional information
1	Object creation notification	c3		
2	Object deletion notification	c3		
3	Attribute value change notification	c3		
4	Operations on managed objects	c4		

c3: if A.2/1a or A.2/2a then m else (if A.1/1a then o.2 else –).

c4: if A.2/3a or A.2/4a then m else (if A.2/1a or A.2/2a then o else (if A.1/1a then o.2 else –)).

NOTE - Manager role minimum conformance requires support for at least one of the items identified by this Table. Conditions c3 and c4 express both of these requirements.

The supplier of the implementation shall specify support for management information in the agent role, in Table A.4.

Table A.4 – Agent role minimum conformance requirement

Index	Item	Status	Support	Table reference	Additional information
1	Object creation notification	c5			
2	Object deletion notification	c5			
3	Attribute value change notification	c5			
4	Object creation record managed object class	c6			
5	Object deletion record managed object class	c7			
6	Attribute value change record managed object class	c8			

c5: if A.2/1b or A.2/2b then m else (if A.1/2a then o.3 else –).

c6: if A.4/1a and A.5/1a then m else –.

c7: if A.4/2a and A.5/1a then m else –.

c8: if A.4/3a and A.5/1a then m else –.

NOTE – The Table reference column in this table is the notification or managed object class table reference of the MOCS supplied by the supplier of the managed object which claims to import the notification from this Recommendation | International Standard.

Table A.5 – Logging of event records

Index		Status	Support	Additional information
1	Does the implementation support logging of event records in agent role?	c9		

c9: if A.1/2a then o else –.

NOTE – Conformance to this Recommendation | International Standard does not require conformance to CCITT Rec. X.735 | ISO/IEC 10164-6.

The supplier of the implementation shall provide information on claims of conformance to any of the Recommendation | International Standards summarized Tables A.6 to A.9. For each Recommendation | International Standard that the supplier of the implementation claims conformance to, the corresponding conformance statement(s) shall be completed, or referenced by, the MCS. The supplier of the implementation shall complete the Support, Table numbers and Additional information columns.

In Tables A.6 to A.9, the Status column is used to indicate whether the supplier of the implementation is required to complete the referenced tables or referenced items. Conformance requirements are as specified in the referenced tables or referenced items and are not changed by the value of the MCS Status column. Similarly, the Support column is used by the supplier of the implementation to indicate completion of the referenced tables or referenced items.

NOTE – Conformance to the MAPDUs defined in this Recommendation | International Standard can be claimed by completing the corresponding tables in the MICS and MOCS annexes of the referenced Recommendations | International Standards.

Table A.6 – PICS support summary

Index	Identification of the document that includes the PICS proforma	Table numbers of PICS proforma	Description	Constraints and values	Status	Support	Table numbers of PICS	Additional information
1	CCITT Rec. X.730 | ISO/IEC, 10164-1	Annex E all tables	SM application context	OBJECT IDENTIFIER	m			

Table A.7 – MOCS support summary

Index	Identification of the document that includes the MOCS proforma	Table numbers of MOCS proforma	Description	Constraints and values	Status	Support	Table numbers of MOCS	Additional information
1	CCITT Rec. X.730 | ISO/IEC 10164-1	Annex C all tables	objectCreation Record	–	c10			
2	CCITT Rec. X.730 | ISO/IEC 10164-1	Annex C all tables	objectDeletion Records	–	c11			
3	CCITT Rec. X.730 | ISO/IEC 10164-1	Annex C all tables	attributeValue Change Records	–	c12			
c10: if A.4/4a then m else –.								
c11: if A.4/5a then m else –.								
c12: if A.4/6a then m else –.								

Table A.8 – MRCS support summary

Index	Identification of the document that includes the MRCS proforma	Table numbers of PICS proforma	Description	Constraints and values	Status	Support	Table numbers of MRCS	Additional information
1	CCITT Rec. X.735 | ISO/IEC 10164-6	Item D.1/1	logRecord-log name binding	–	c13			
c13: if A.5/1a then o else –.								

Table A.9 – MICS support summary

Index	Identification of the document that includes the MICS proforma	Table numbers of MICS proforma	Description	Constraints and values	Status	Support	Table numbers of MICS	Additional information
1	CCITT Rec. X.730 | ISO/IEC 10164-1	Table B.1	notifications	–	c14			
2	CCITT Rec. X.730 | ISO/IEC 10164-1	Tables B.2 and B.3	management operations	–	c15			
c14: if A.3/1a or A.3/2a or A.3/3a then m else –.								
c15: if A.3/4a then m else –.								

Annex B

MICS proforma[4]
(This annex forms an integral part of this Recommendation | International Standard)

B.1   Introduction

The purpose of this MICS proforma is to provide a mechanism for a supplier of an implementation which claims conformance, in the manager role, to management information specified in this Recommendation | International Standard, to provide conformance information in a standard form.

B.2   Instructions for completing the MICS proforma to produce a MICS

The MICS proforma contained in this annex is comprised of information in tabular form, in accordance with ITU-T Rec. X.724 | ISO/IEC 10165-6. In addition to the general guidance given in ITU-T Rec. X.724 | ISO/IEC 10165-6, the Additional information column shall be used to identify the object classes for which the management operations are supported. The supplier of the implementation shall state which items are supported in tables below and if necessary, provide additional information.

B.3   Symbols, abbreviations and terms

The following abbreviations are used throughout the MICS proforma:

        dmi-att   joint-iso-ccitt ms(9) smi(3) part2(2) attribute(7)

        dmi-not   joint-iso-ccitt ms(9) smi(3) part2(2) notification(10)

The notations used for the Status and Support columns are specified in A.1.3.

B.4   Statement of conformance to the management information

B.4.1   Notifications

The specifier of a manager role implementation that claims to support the notifications specified in this Recommendation | International Standard shall import a copy of Table B.1 and complete it.

Table B.1 – Notification support

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support Confirmed	Support Non-confirmed	Additional information
1	objectCreation	{dmi-not 6}	–	c1			
2	objectDeletion	{dmi-not 7}	–	c2			
3	attributeValueChange	{dmi-not 1}	–	c3			

c1: if A.3/1a then m else –.

c2: if A.3/2a then m else –.

c3: if A.3/3a then m else –.

(continued)

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Table B.1 (*concluded*) – Notification support

Index	Sub-index	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
1	1.1	sourceIndicator	{dmi-att 26}	0 to 3	m		
	1.2	attributeList	{dmi-att 9}	–	m		
	1.3	notificationIdentifier	{dmi-att 16}	–	m		
	1.4	correlatedNotifications	{dmi-att 12}	–	m		
	1.4.1	correlatedNotifications	–	–	m		
	1.4.2	sourceObjectInst	–	–	m		
	1.4.2.1	distinguishedName	–	–	m		
	1.4.2.2	nonSpecificForm	–	–	m		
	1.4.2.3	localDistinguishedName	–	–	m		
	1.5	additionalText	{dmi-att 7}	–	m		
	1.6	additionalInformation	{dmi-att 6}	–	m		
2	2.1	sourceIndicator	{dmi-att 26}	0 to 3	m		
	2.2	attributeList	{dmi-att 9}	–	m		
	2.3	notificationIdentifier	{dmi-att 16}	–	m		
	2.4	correlatedNotifications	{dmi-att 12}	–	m		
	2.4.1	correlatedNotification	–	–	m		
	2.4.2	sourceObjectInst	–	–	m		
	2.4.2.1	distinguishedName	–	–	m		
	2.4.2.2	nonSpecificForm	–	–	m		
	2.4.2.3	localDistinguishedName	–	–	m		
	2.5	additionalText	{dmi-att 7}	–	m		
	2.6	additionalInformation	{dmi-att 6}	–	m		
3	3.1	sourceIndicator	{dmi-att 26}	0 to 3	m		
	3.2	attribute identifier list	{dmi-att 8}	–	m		
	3.3	attributeValueChange definition	{dmi-att 10}	–	m		
	3.3.1	attributeId	–	–	m		
	3.3.2	oldAttributeValue	–	–	m		
	3.3.3	newAttributeValue	–	–	m		
	3.4	notificationIdentifier	{dmi-att 16}	INTEGER	m		
	3.5	correlatedNotifications	{dmi-att 12}	–	m		
	3.4.1	correlatedNotification	–	–	m		
	3.4.2	sourceObjectInst	–	–	m		
	3.4.2.1	distinguishedName	–	–	m		
	3.4.2.2	nonSpecificForm	–	–	m		
	3.4.2.3	localDistinguishedName	–	–	m		
	3.6	additionalText	{dmi-att 7}	–	m		
	3.7	additionalInformation	{dmi-att 6}	–	m		

B.4.2   Attributes

The specifier of a manager role implementation that claims to support the management operations on attributes specified in this Recommendation | International Standard shall import a copy of Table B.2 and complete it.

Table B.2 – Attribute support

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by Create		Get		Replace	
				Status	Support	Status	Support	Status	Support
1	objectClass	{dmi-att 65}		–		o.4		–	
2	nameBinding	{dmi-att 63}		–		o.4		–	
3	packages	{dmi-att 66}		–		o.4		–	
4	allomorphs	{dmi-att 50}		–		o.4		–	
5	logRecordId	{dmi-att 3}		–		o.4		–	
6	loggingTime	{dmi-att 59}		–		o.4		–	
7	managedObjectClass	{dmi-att 60}		–		o.4		–	
8	managedObjectInstance	{dmi-att 61}		–		o.4		–	
9	eventType	{dmi-att 14}		–		o.4		–	
10	eventTime	{dmi-att 13}		–		o.4		–	
11	notificationIdentifier	{dmi-att 16}		–		o.4		–	
12	correlatedNotifications	{dmi-att 12}		–		o.4		–	
13	additionalText	{dmi-att 7}		–		o.4		–	
14	additionalInformation	{dmi-att 6}		–		o.4		–	
15	attributeValueChange Definition	{dmi-att 10}		–		o.4		–	
16	sourceIndicator	{dmi-att 26}		–		o.4		–	
17	attributeIdentifierList	{dmi-att 8}		–		o.4		–	
18	attributeList	{dmi-att 9}		–		o.4		–	

(continued)

Table B.2 (*concluded*) – Attribute support

Index	Add Status	Add Support	Remove Status	Remove Support	Set to default Status	Set to default Support	Additional information
1	–		–		–		
2	–		–		–		
3	–		–		–		
4	–		–		–		
5	–		–		–		
6	–		–		–		
7	–		–		–		
8	–		–		–		
9	–		–		–		
10	–		–		–		
11	–		–		–		
12	–		–		–		
13	–		–		–		
14	–		–		–		
15	–		–		–		
16	–		–		–		
17	–		–		–		
18	–		–		–		

B.4.3   Create and delete management operations

The specifier of a manager role implementation that claims to support the create or delete management operations on managed objects specified in this Recommendation | International Standard shall import a copy of Table B.3 and complete it.

Table B.3 – Create and delete support

Index	Operation	Constraints and values	Status	Support	Additional information
1	Create support	–	x		
1.1	Create with reference object	–	–		
2	Delete support	objectcreationRecord, objectDeletionRecord, attributeValueChangeRecord managed objects	o.4		

Annex C

MOCS proforma[5]

(This annex forms an integral part of this Recommendation | International Standard)

C.1   Introduction

The purpose of this MOCS proforma is to provide a mechanism for a supplier of an implementation which claims to conform to a managed object class, to provide conformance information in a standard form.

C.2   Instructions for completing the MOCS proforma to produce a MOCS

The MOCS proforma contained in this annex is comprised of information in tabular form, in accordance with ITU-T Rec. X.724 | ISO/IEC 10165-6. The supplier of the implementation shall state which items are supported in tables below and if necessary provide additional information.

C.3   Symbols, abbreviations and terms

The following abbreviations are used throughout the proformas:

dmi-att	joint-iso-ccitt ms(9) smi(3) part2(2) attribute(7)
dmi-moc	joint-iso-ccitt ms(9) smi(3) part2(2) managedObjectClass(3)
dmi-not	joint-iso-ccitt ms(9) smi(3) part2(2) notification(10)
dmi-pkg	joint-iso-ccitt ms(9) smi(3) part2(2) package(4)

The notations used in the Status and Support columns are specified in A.1.3.

The following requirement is commonly used throughout this MOCS proforma:

c1:	if C.3/3a or C.3/6a or C.3/7a or C.3/8a or C.3/9a or C.3/ 10a or C.3/12a or C.3/13a then m else –.
c2:	if C.1/1b then – else m.
c10:	if C.7/3a or C.7/6a or C.7/7a or C.7/8a or C.7/9a or C.7/ 10a or C.7/12a or C.7/13a then m else –.
c11:	if C.5/1b then – else m .
c19:	if C.11/3a or C.11/6a or C.11/7a or C.11/8a or C.11/9a or C.11/ 10a or C.11/12a or C.11/13a then m else –.
c20:	if C.9/1b then – else m.

C.4   Object creation record managed object class

C.4.1   Statement of conformance to the managed object class

See Table C.1.

Table C.1 – Managed object class support

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	objectCreationRecord	{dmi-moc 8}		

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[5] Users of this Recommendation | International Standard may freely reproduce the MOCS proforma in this annex so that it can be used for its intended purpose, and may further publish the completed MOCS. Instructions for completing the MOCS proforma are specified in ITU-T Rec. X.724 | ISO/IEC 10165-6.

If the answer to the actual class question in the managed object class support table is "N", the supplier of the implementation shall supply the actual class support details, in Table C.2.

Table C.2 – Actual class support

Index	Actual managed object class template label	Value of object identifier for managed object class	Additional information
1			

C.4.2 Packages

See Table C.3.

Table C.3 – Object creation record packages

Index	Package template lable	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	topPackage	–	–	m		
2	packagesPackage	{dmi-pkg 16}	–	c1		
3	allomorphicPackage	{dmi-pkg 17}	–	c2		
4	logRecordPackage	–	–	m		
5	eventLogRecordPackage	–	–	m		
6	eventTimePackage	{dmi-pkg 11}	–	o		
7	notificationIdentifierPackage	{dmi-pkg 24}	–	o		
8	correlatedNotificationPackage	{dmi-pkg 23}	–	o		
9	additionalTextPackage	{dmi-pkg 19}	–	o		
10	additionalInformationPackage	{dmi-pkg 18}	–	o		
11	objectCreationRecordPackage[6]	–	–	m		
12	sourceIndicatorPackage	{dmi-pkg 28}	–	o		
13	attributeListPackage	{dmi-pkg 21}	–	o		

_____

[6] This package has no attributes.

C.4.3 Attributes

See Table C.4.

Table C.4 – Object creation attribute support

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by Create		Get		Replace	
				Status	Support	Status	Support	Status	Support
1	objectClass	{dmi-att 65}	–	x		m		x	
2	nameBinding	{dmi-att 63}	–	x		m		x	
3	packages	{dmi-att 66}	–	x		c1		x	
4	allomorphs	{dmi-att 50}	–	x		c2		x	
5	logRecordId	{dmi-att 3}	–	x		m		x	
6	loggingTime	{dmi-att 59}	–	x		m		x	
7	managedObjectClass	{dmi-att 60}	–	x		m		x	
8	managedObjectInstance	{dmi-att 61}	–	x		m		x	
9	eventType	{dmi-att 14}	–	x		m		x	
10	eventTime	{dmi-att 13}	–	x		c3		x	
11	notificationIdentifier	{dmi-att 16}	–	x		c4		x	
12	correlatedNotifications	{dmi-att 12}	–	x		c5		x	
13	additionalText	{dmi-att 7}	–	x		c6		x	
14	additionalInformation	{dmi-att 6}	–	x		c7		x	
15	sourceIndicator	{dmi-att 26}	–	x		c8		x	
16	attributeList	{dmi-att 9}	–	x		c9		x	

c3: if C.3/6a then m else –.
c4: if C.3/7a then m else –.
c5: if C.3/8a then m else –.
c6: if C.3/9a then m else –.
c7: if C.3/10a then m else –.
c8: if C.3/12a then m else –.
c9: if C.3/13a then m else –.

Table C.4 (*concluded*) – Object creation attribute support

Index	Add		Remove		Set to default		Additional information
	Status	Support	Status	Support	Status	Support	
1	–		–		–		
2	–		–		–		
3	x		x		–		
4	x		x		–		
5	–		–		–		
6	–		–		–		
7	–		–		–		
8	–		–		–		
9	–		–		–		
10	–		–		–		
11	–		–		–		
12	x		x		–		
13	–		–		–		
14	x		x		–		
15	–		–		–		
16	x		x		–		

C.5 Object deletion record managed object class

C.5.1 Statement of conformance to the managed object class

See Table C.5.

Table C.5 – Managed object class support

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	objectDeletionRecord	{dmi-moc 9}		

If the answer to the actual class question in the managed object class support table is "N", the supplier of the implementation shall supply the actual class support details, in Table C.6.

Table C.6 – Actual class support

Index	Actual managed object class template label	Value of object identifier for managed object class	Additional information
1			

C.5.2 Object deletion record packages

See Table C.7.

Table C.7 – Object deletion record packages

Index	Package name	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	topPackage	–	–	m		
2	packagesPackage	{dmi-pkg 16}	–	c10		
3	allomorphicPackage	{dmi-pkg 17}	–	c11		
4	logRecordPackage	–	–	m		
5	eventLogRecordPackage	–	–	m		
6	eventTimePackage	{dmi-pkg 11}	–	o		
7	notificationIdentifierPackage	{dmi-pkg 24}	–	o		
8	correlatedNotificationPackage	{dmi-pkg 23}	–	o		
9	additionalTextPackage	{dmi-pkg 19}	–	o		
10	additionalInformationPackage	{dmi-pkg 18}	–	o		
11	objectDeletionRecordPackage[7]	–	–	m		
12	sourceIndicatorPackage	{dmi-pkg 28}	–	o		
13	attributeListPackage	{dmi-pkg 21}	–	o		

---

[7] This package has no attributes.

C.5.3   Attributes

See Table C.8.

Table C.8 – Object deletion record attribute support

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by Create Status	Set by Create Support	Get Status	Get Support	Replace Status	Replace Support
1	objectClass	{dmi-att 65}	–	x		m		x	
2	name Bnding	{dmi-att 63}	–	x		m		x	
3	packages	{dmi-att 66}	–	x		c10		x	
4	allomorphs	{dmi-att 50}	–	x		c11		x	
5	logRecordId	{dmi-att 3}	–	x		m		x	
6	loggingTime	{dmi-att 59}	–	x		m		x	
7	managedObjectClass	{dmi-att 60}	–	x		m		x	
8	managedObjectInstance	{dmi-att 61}	–	x		m		x	
9	eventType	{dmi-att 14}	–	x		m		x	
10	eventTime	{dmi-att 13}	–	x		c12		x	
11	notificationIdentifier	{dmi-att 16}	–	x		c13		x	
12	correlatedNotifications	{dmi-att 12}	–	x		c14		x	
13	additionalText	{dmi-att 7}	–	x		c15		x	
14	additionalInformation	{dmi-att 6}	–	x		c16		x	
15	sourceIndicator	{dmi-att 26}	–	x		c17		x	
16	attributeList	{dmi-att 9}	–	x		c18		x	

c12: if C.7/6a then m else–.

c13: if C.7/7a then m else –.

c14: if C.7/8a then m else –.

c15: if C.7/9a then m else –.

c16: if C.7/10a then m else –.

c17: if C.7/12a then m else –.

c18: if C.7/13a then m else–.

(continued)

Table C.8 (*concluded*) – Object deletion record attribute support

	Add		Remove		Set to default		
Index	Status	Support	Status	Support	Status	Support	Additional information
1	–		–		–		
2	–		–		–		
3	x		x		–		
4	x		x		–		
5	–		–		–		
6	–		–		–		
7	–		–		–		
8	–		–		–		
9	–		–		–		
10	–		–		–		
11	–		–		–		
12	x		x		–		
13	–		–		–		
14	x		x		–		
15	–		–		–		
16	x		x		–		

C.6   Attribute value change record managed object class

C.6.1   Statement of conformance to the managed object class

See Table C.9.

Table C.9 – Managed object class support

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	attributeValueChangeRecord	{dmi-moc 2}		

If the answer to the actual class question in the managed object class support table is "N", the supplier of the implementation shall supply the actual class support details, in Table C.10.

Table C.10 – Actual class support

Index	Actual managed object class template label	Value of object identifier for managed object class	Additional information
1			

C.6.2 Attribute value change record packages

See Table C.11.

Table C.11 – Attribute value change record packages

Index	Package name	Value of object identifier	Constraints and values	Status	Support	Additional information
1	topPackage	–	–	m		
2	packagesPackage	{dmi-pkg 16}	–	c19		
3	allomorphicPackage	{dmi-pkg 17}	–	c20		
4	logRecordPackage	–	–	m		
5	eventLogRecordPackage	–	–	m		
6	eventTimePackage	{dmi-pkg 11}	–	o		
7	notificationIdentifierPackage	{dmi-pkg 24}	–	o		
8	correlatedNotificationPackage	{dmi-pkg 23}	–	o		
9	additionalTextPackage	{dmi-pkg 19}	–	o		
10	additionalInformationPackage	{dmi-pkg 18}	–	o		
11	attributeValueChangeRecordPackage	–	–	m		
12	sourceIndicatorPackage	{dmi-pkg 28}	–	o		
13	attributeIdentifierListPackage	{dmi-pkg 20}	–	o		

C.6.3 Attributes

See Table C.12.

Table C.12 – Attribute value change record attribute support

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by Create Status	Set by Create Support	Get Status	Get Support	Replace Status	Replace Support
1	objectClass	{dmi-att 65}	–	x		m		x	
2	nameBinding	{dmi-att 63}	–	x		m		x	
3	packages	{dmi-att 66}	–	x		c19		x	
4	allomorphs	{dmi-att 50}	–	x		c20		x	
5	logRecordId	{dmi-att 3}	–	x		m		x	
6	loggingTime	{dmi-att 59}	–	x		m		x	
7	managedObjectClass	{dmi-att 60}	–	x		m		x	
8	managedObjectInstance	{dmi-att 61}	–	x		m		x	
9	eventType	{dmi-att 14}	–	x		m		x	
10	eventTime	{dmi-att 13}	–	x		c21		x	
11	notificationIdentifier	{dmi-att 16}	–	x		c22		x	
12	correlatedNotifications	{dmi-att 12}	–	x		c23		x	
13	additionalText	{dmi-att 7}	–	x		c24		x	
14	additionalInformation	{dmi-att 6}	–	x		c25		x	
15	attributeValueChange Definition	{dmi-att 10}	–	x		m		x	
16	sourceIndicator	{dmi-att 26}	–	x		c26		x	
17	attributeIdentifierList	{dmi-att 8}	–	x		c27		x	

c21: iIf C.11/6a then m else –.
c22: if C.11/7a then m else –.
c23: if C.11/8a then m else –.
c24: if C.11/9a then m else –.
c25: if C.11/10a then m else –.
c26: if C.11/12a then m else –.
c27: if C.11/13a then m else –.

(continued)

Table C.12 (*concluded*) – Attribute value change record attribute support

	Add		Remove		Set to default		
Index	Status	Support	Status	Support	Status	Support	Additional information
1	–		–		–		
2	–		–		–		
3	x		x		–		
4	x		x		–		
5	–		–		–		
6	–		–		–		
7	–		–		–		
8	–		–		–		
9	–		–		–		
10	–		–		–		
11	–		–		–		
12	x		x		–		
13	–		–		–		
14	x		x		–		
15	x		x		–		
16	–		–		–		
17	x		x		–		

Annex D

MIDS (notification) proforma[8]

(This annex forms an integral part of this Recommendation | International Standard)

D.1   Symbols, abbreviations and terms

The following abbreviations are used throughout the proformas:

dmi-att   joint-iso-ccitt ms(9) smi(3) part2(2) attribute(7)

dmi-not   joint-iso-ccitt ms(9) smi(3) part2(2) notification(10)

The notations used in the Status and Support columns are specified in A.1.3.

D.2   Notifications

The specifier of a managed object class that claims to support the notifications specified by CCITT Rec. X.730 | ISO/IEC 10164-1 shall import a copy of Table D.1 and complete it according to the instructions specified in ITU-T Rec. X.724 | ISO/IEC 10165-6.

Table D.1 – Notification support

| Index | Notification type template label | Value of object identifier for notification type | Constraints and values | Status | Support | | Additional information |
					Confirmed	Non-confirmed	
1	objectCreation	{dmi-not 6}	–				
2	objectDeletion	{dmi-not 7}	–				
3	attributeValueChange	{dmi-not 1}	–				

(continued)

Table D.1 (*concluded*) – Notification support

Index	Sub-index	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
1	1.1	sourceIndicator	{dmi-att 26}	0 to 3	o		
	1.2	attributeList	{dmi-att 9}	–	o		
	1.3	notificationIdentifier	{dmi-att 16}	INTEGER	c1		
	1.4	correlatedNotifications	{dmi-att 12}	–	o		
	1.4.1	correlatedNotifications	–	–	c:m		
	1.4.2	sourceObjectInst	–	–	c:o		
	1.4.2.1	distinguishedName	–	–	c:o.5		
	1.4.2.2	nonSpecificForm	–	–	c:o.5		
	1.4.2.3	localDistinguishedName	–	–	c:o.5		
	1.5	additionalText	{dmi-att 7}	–	o		
	1.6	additionalInformation	{dmi-att 6}	–	o		
2	2.1	sourceIndicator	{dmi-att 26}	0 to 3	o		
	2.2	attributeList	{dmi-att 9}	–	o		
	2.3	notificationIdentifier	{dmi-att 16}	INTEGER	c2		
	2.4	correlatedNotifications	{dmi-att 12}	–	o		
	2.4.1	correlatedNotification	–	–	c:m		
	2.4.2	sourceObjectInst	–	–	c:o		
	2.4.2.1	distinguishedName	–	–	c:o.6		
	2.4.2.2	nonSpecificForm	–	–	c:o.6		
	2.4.2.3	localDistinguishedName	–	–	c:o.6		
	2.5	additionalText	{dmi-att 7}	–	o		
	2.6	additionalInformation	{dmi-att 6}	–	o		
3	3.1	sourceIndicator	{dmi-att 26}	0 to 3	o		
	3.2	attribute identifier list	{dmi-att 8}	–	o		
	3.3	attributeValueChange definition	{dmi-att 10}	–	m		
	3.3.1	attributeId	–	–	m		
	3.3.2	oldAttributeValue	–	–	o		
	3.3.3	newAttributeValue	–	–	m		
	3.4	notificationIdentifier	{dmi-att 16}	INTEGER	c3		
	3.5	correlatedNotifications	{dmi-att 12}	–	o		
	3.4.1	correlatedNotification	–	–	c:m		
	3.4.2	sourceObjectInst	–	–	c:o		
	3.4.2.1	distinguishedName	–	–	c:o.7		
	3.4.2.2	nonSpecificForm	–	–	c:o.7		
	3.4.2.3	localDistinguishedName	–	–	c:o.7		
	3.6	additionalText	{dmi-att 7}	–	o		
	3.7	additionalInformation	{dmi-att 6}	–	o		i

c1: if D.1/1.4a then m else o.

c2: if D.1/2.4a then m else o.

c2: if D.1/3.5a then m else o.

Annex E

Systems Management Application Context PICS proforma[9]
(This annex forms an integral part of this Recommendation | International Standard)

E.1   Symbols, abbreviations and terms

The PICS proforma contained in this annex is comprised of information in a tabular form in accordance with the guidelines presented in CCITT Rec. X.291 | ISO/IEC 9646-2.

The notations used in the Status and Support columns are specified in A.1.3.

The following requirement is commonly used throughout this MOCS proforma:

   c1:   if E.2/1a then m else o.

E.2   Application context

The systems management application context is defined in Annex A of CCITT Rec. X.701 | ISO/IEC 10040. A conforming implementation shall be able to request and/or accept the systems management application context.

The PICS tables corresponding to the systems management application context are specified in this annex and shall be referenced by any PICS of any standard that supports the systems management application context.

Table E.1 – Systems management application context

Index	Application context identifier	Sending		Receiving	
		Status	Support	Status	Support
1	systems management application context {joint-iso-ccitt ms(9) smo(0) application-context(0) systems-management(2)}	o.8		o.8	

E.3   Functional unit negotiation mechanism

The negotiation of functional unit is optional. If functional unit negotiation is supported the supplier shall use Table E.2 to indicate support. The rules for negotiating functional units are described in CCITT Rec. X.701 | ISO/IEC 10040.

The parameters are carried by an EXTERNAL in the "user information" field of AARQ and AARE APDUs.

Table E.2 – SMFU negotiation support

Index	Negotiation capability	Status	Support	Additional information
1	Does the implementation support the negotiation of the systems management functional unit?	o		

If support for SMFU negotiation is claimed, then the supplier of the implementation shall state whether or not each parameter of SMASEUserData is supported in Tables E.3 to E.6.

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[9] Users of this Recommendation | International Standard may freely reproduce the PICS proforma in this annex so that it can be used for its intended purpose, and may further publish the completed PICS.

Table E.3 – SMASEUserData parameters carried by AARQ APDU-Sending

Index	Parameter name	Status	Support	Additional information
1	SMASEUserData	c1		
1.1	smfuPackages	c:o		
1.1.1	functionalUnitPackageId	c:m		
1.1.2	managerRoleFunctionalUnit	c:o.9		
1.1.3	agentRoleFunctionalUnit	c:o.9		
1.2	reason	–		
1.3	systemsManagementUserInformation[10]	c:o		

Table E.4 – SMASEUserData parameters carried by AARE APDU-Sending

Index	Parameter name	Status	Support	Additional information
1	SMASEUserData	c1		
1.1	smfuPackages	c:o		
1.1.1	functionalUnitPackageId	c:m		
1.1.2	managerRoleFunctionalUnit	c:o.10		
1.1.3	agentRoleFunctionalUnit	c:o.10		
1.2	reason	c:o		
1.3	systemsManagementUserInformation[10]	c:o		

Table E.5 – SMASEUserData parameters carried by AARQ APDU-Receiving

Index	Parameter name	Status	Support	Additional information
1	SMASEUserData	m		
1.1	smfuPackages	m		
1.1.1	functionalUnitPackageId	m		
1.1.2	managerRoleFunctionalUnit	m		
1.1.3	agentRoleFunctionalUnit	m		
1.2	reason	–		
1.3	systemsManagementUserInformation[10]	m		

Table E.6 – SMASEUserData parameters carried by AARE APDU-Receiving

Index	Parameter name	Status	Support	Additional information
1	SMASEUserData	m		
1.1	smfuPackages	m		
1.1.1	functionalUnitPackageId	m		
1.1.2	managerRoleFunctionalUnit	m		
1.1.3	agentRoleFunctionalUnit	m		
1.2	reason	m		
1.3	systemsManagementUserInformation[10]	m		

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[10] This parameter is provided solely for the convenience of the implementation needing to distinguish between different implementation environments, it shall not be subject to conformance testing.