INTERNATIONAL STANDARD

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AMENDMENT 1
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Information technology — Open Systems Interconnection — Systems Management: Usage metering function for accounting purposes

AMENDMENT 1: Implementation conformance statement proformas

Technologies de l'information — Interconnexion de systèmes ouverts (OSI) — Gestion-systèmes: Fonction de comptage d'utilisation aux fins de comptabilité

AMENDEMENT 1: Proformes de déclaration de conformité de mise en œuvre

Reference number
ISO/IEC 10164-10:1995/Amd.1:1998(E)

Contents

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. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Amendment 1 to ISO/IEC 10164-10:1995 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 33, *Distributed application services*, in collaboration with ITU-T. The identical text is published as ITU-T Rec. X.742/Amd.1.

INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION – SYSTEMS MANAGEMENT: USAGE METERING FUNCTION FOR ACCOUNTING PURPOSES

AMENDMENT 1
Implementation conformance statement proformas

1) Subclause 2.1

Replace the existing reference X.724 by:

– ITU-T Recommendation X.724 (1996) | ISO/IEC 10165-6:1997, *Information technology – Open Systems Interconnection – Structure of management information: Requirements and guidelines for implementation conformance statement proformas associated with OSI management*.

2) Subclause 2.2

Add the following references:

– ITU-T Recommendation X.290 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – General concepts*.

ISO/IEC 9646-1:1994, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 1: General concepts*.

– ITU-T Recommendation X.291 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T 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 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – Implementation conformance statements*.

ISO/IEC 9646-7:1995, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 7: Implementation Conformance Statements*.

3) New subclause 3.7

Add a new subclause 3.7 and renumber the existing subclause 3.7 to 3.8:

3.7 OSI Conformance testing definitions

This Recommendation | International Standard makes use of the following terms defined in ITU-T Rec. X.290 | ISO/IEC 9646-1:

a) PICS proform;

b) protocol implementation conformance statement;

c) system conformance statement.

4) Clause 4

Insert the following abbreviations by alphabetical order:

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

5) New Annexes B, C, D and F

Add the following annexes:

Annex B[1)]

MCS proforma

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

B.1 Introduction

B.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.

B.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.

B.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.

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

NOTE 2 – 'o' may be suffixed by '.N' (where N is a unique number) for mutually exclusive or 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).

B.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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1) **Copyright release for MCS proforma**

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 subrows 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 subindex numbers corresponding to the subrows within each indexed row. For example, if Table X.1 has 2 rows and the continuation of Table X.1 has 2 subrows for each row, the tables are presented as follows:

Table X.1 – Title

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

Table X.1 *(continued)*

Index	Subindex	H	I	J	K	L
1	1.1	h	i	j		
	1.2	h	i	j		
2	2.1	h	i	j		
	2.2	h	i	j		

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

					Support								
Index	A	B	C	D	E	F	G	Subindex	H	I	J	K	L
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 tables. In the example, above, the reference X.1/1d corresponds with 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 Subindex 1.2

B.2 Identification of the implementation

B.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

B.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.

B.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, in the box below.

B.3 Identification of the Recommendation | International Standard 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 Recommendation | International Standard which specifies the management information to which conformance is claimed, in the box below.

Recommendation | International Standard to which conformance is claimed

B.3.1 Technical corrigenda implemented

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

B.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.

B.4 Management conformance summary

The supplier of implementation shall state the capabilities and features supported and provide 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 B.1.

Table B.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 management information in the manager role, in Table B.2.

Table B.2 – Manager role minimum conformance requirement

Index	Item	Status	Support	Additional information
1	Operations on managed objects	c1		
2	Object creation notification from at least one usage metering managed object	c1		
3	Object deletion notification from at least one usage metering managed object	c1		
4	Attribute value change notification from at least one usage metering managed object	c1		
5	State change notification from at least usage metering managed object	c1		
6	Resume metering action to usage metering control object managed object	c1		
7	Start metering action to usage metering control object managed object	c1		
8	Suspend metering action to usage metering control object managed object	c1		
9	Metering resumed notification from usage metering control object managed object	c1		
10	Metering started notification from usage metering control object managed object	c1		
11	Metering suspended notification from usage metering control object managed object	c1		
12	Usage report notification from usage metering data object managed object	c1		
c1: if B.1/1a then o.2 else –				

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

Table B.3 – Agent role minimum conformance requirement

Index	Item	Status	Support	Additional information
1	Usage metering control object object class	c2		
2	Usage metering data object object class	c2		
3	Usage metering record object class	c2		
c2: if B.1/2a then o.3 else –				

Table B.4 – Logging of event records

Index	Item	Status	Support	Additional information
1	Does the implementation support logging of event records in agent role?	c3		
c3: if B.1/2a then o.3 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 in Tables B.5 to B.8. 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 B.6 to B.8, 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.

Table B.5 – 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		o			

Table B.6 – 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	objectCreation and objectDeletion records	–	c4			
2	CCITT Rec. X.730 | ISO/IEC 10164-1	Annex C	attribute valueChange record	–	c5			
3	CCITT Rec. X.731 | ISO/IEC 10164-2	Annex C all tables	stateChangeRecord	–	c5			
4	ITU-T Rec. X.742 | ISO/IEC 10164-10	Annex D.4	usageMetering ControlObject	–	c6			
5	ITU-T Rec. X.742 | ISO/IEC 10164-10	Annex D.5	usageMetering DataObject	–	c7			
6	ITU-T Rec. X.742 | ISO/IEC 10164-10	Annex D.6	usageMeteringRecord	–	c8			

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

c5: if B.3/1a and B.4/1a then m else –

c6: if B.3/1a then m else –

c7: if B.3/2a then m else –

c8: if (B.3/1a or B.3/3a) and B.4/1a then m else –

Table B.7 – MRCS support summary

Index	Identification of the document that includes the MRCS proforma	Table numbers of MRCS proforma	Description	Constraints and values	Status	Support	Table numbers of MRCS	Additional information
1	ITU-T Rec. X.742 | ISO/IEC 10164-10	Annex F all tables	usageMeter Control-system	–	c9			
2	CCITT Rec. X.735 | ISO/IEC 10164-6	Annex D Item D.1/1	logRecord-log	–	c10			
c9: if B.3/1a then o else – c10: if B.3/3a then o else –								

Table B.8 – MICS support summary

Index	Identification of the document that includes the MRCS proforma	Table numbers of MICS proforma	Description	Constraints and values	Status	Support	Table numbers of MICS	Additional information
1	ITU-T Rec. X.742 | ISO/IEC 10164-10	Tables C.1 and C.4	management operations	–	c11			
2	ITU-T Rec. X.742 | ISO/IEC 10164-10	Table C.5	attributeValueChange, objectCreation, objectDeletion meteringResumed, meteringStarted, meteringSuspended, and usageReport notifications	–	c12			
4	ITU-T Rec. X.742 | ISO/IEC 10164-10	Table C.6	resumeMetering, startMetering and suspendMetering actions	–	c13			
c11: if B.2/1a then m else – c12: if B.2/2a or B.2/3a or B.2/4a or B.2/5a or B.2/9a or B.2/10a or B.2/11a or B.2/12a then m else – c13: if B.2/6a or B.2/7a or B.2/8a then m else –								

Annex C[2)]

MICS proforma

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

C.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.

C.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.

C.3 Symbols, abbreviations and terms

The following abbreviations are used throughout the MICS proforma:

smi2AttributeId	{joint-iso-itu-t ms(9) smi(3) part2(2) attribute(7)
smi2Notification	{joint-iso-itu-t ms(9) smi(3) part2(2) notification(10)
smi2Package	{joint-iso-itu-t ms(9) smi(3) part2(2) package(4)
umf-act	{joint-iso-itu-t ms(9) function(2) part10(10) action(9)
umf-att	{joint-iso-itu-t ms(9) function(2) part10(10) attribute(7)
umf-mo	{joint-iso-itu-t ms(9) function(2) part10(10) managedObjectClass(3)
umf-not	{joint-iso-itu-t ms(9) function(2) part10(10) notification(10)
umf-par	{joint-iso-itu-t ms(9) function(2) part10(10) parameter(5)
umf-pkg	{joint-iso-itu-t ms(9) function(2) part10(10) package(4)

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

C.4 Statement of conformance to the management information

C.4.1 Attributes

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

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2) **Copyright release for MICS proforma**

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

Table C.1 – Attribute support

				Set by create		Get		Replace	
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Support	Status	Support	Status	Support
1	accountableObjectReference	{umf-att 1}	d	–		o.1		–	
2	accountableObjectsReference List	{umf-att 2}		c1		o.1		–	
3	additionalInformation	{smi2AttributeID 6}		–		o.1		–	
4	additionalText	{smi2AttributeID 7}		–		o.1		–	
5	allomorphs	{smi2AttributeID 50}		–		o.1		–	
6	auditInfo	{umf-att 4}		–		o.1		–	
7	controlObjectId	{umf-att 5}		–		o.1		–	
8	controlStatus	{smi2AttributeID 34}		–		o.1		–	
9	correlatedNotifications	{smi2AttributeID 12}		–		o.1		–	
10	dataErrors	{umf-att 8}		–		o.1		–	
11	dataObjectId	{umf-att 6}		–		o.1		–	
12	dataObjectsReferenceList	{umf-att 7}		c1		o.1		–	
13	eventTime	{smi2AttributeID 13}		–		o.1		–	
14	eventType	{smi2AttributeID 14}		–		o.1		–	
15	loggingTime	{smi2AttributeID 59}		–		o.1		–	
16	logRecordId	{smi2AttributeID 3}		–		o.1		–	
17	managedObjectClass	{smi2AttributeID 60}		–		o.1		–	
18	managedObjectInstance	{smi2AttributeID 61}		–		o.1		–	
19	nameBinding	{smi2AttributeID 63}		–		o.1		–	
20	notificationIdentifier	{smi2AttributeID 16}		–		o.1		–	
21	objectClass	{smi2AttributeID 65}		–		o.1		–	
22	operationalState	{smi2AttributeID 35}		–		o.1		–	
23	packages	{smi2AttributeID 66}		–		o.1		–	
24	proceduralStatus	{smi2AttributeID 36}		–		o.1		–	
25	providerId	{umf-att 10}		–		o.1		–	
26	reportingTriggers	{umf-att 11}		c1		o.1		o.1	
27	usageInfo	{umf-att 12}		–		o.1		–	
c1: if C.2/1a then o.1 else –									

Table C.1 *(concluded)*

	Add		Remove		Set to default		
Index	Status	Support	Status	Support	Status	Support	Additional information
1	–		–		–		
2	–		–		–		
3	–		–		–		
4	–		–		–		
5	–		–		–		
6	–		–		–		
7	–		–		–		
8	–		–		–		
9	–		–		–		
10	–		–		–		
11	–		–		–		
12	–		–		–		
13	–		–		–		
14	–		–		–		
15	–		–		–		
16	–		–		–		
17	–		–		–		
18	–		–		–		
19	–		–		–		
20	–		–		–		
21	–		–		–		
22	–		–		–		
23	–		–		–		
24	–		–		–		
25	o.1		o.1		–		
26	–		–		–		

C.5 Create and delete management operations

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

C.5.1 Usage metering control object managed object class

Table C.2 – Create and delete support

Index	Operation	Constraints and values	Status	Support	Additional information
1	Create support	usageMeteringControlObject	o.4		
1.1	Create with reference object	–	c:o		
2	Delete support	–	o.4		