INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.739

Amendment 1
(08/97)

SERIES X: DATA NETWORKS AND OPEN SYSTEM COMMUNICATION

OSI management – Management functions

Information technology – Open Systems Interconnection – Systems management: Metric objects and attributes

Amendment 1: Implementation conformance statement proformas

ITU-T Recommendation X.739 – Amendment 1

(Previously CCITT Recommendation)

ITU-T X-SERIES RECOMMENDATIONS

DATA NETWORKS AND OPEN SYSTEM COMMUNICATIONS

PUBLIC DATA NETWORKS	
Services and facilities	X.1–X.19
Interfaces	X.20–X.49
Transmission, signalling and switching	X.50–X.89
Network aspects	X.90–X.149
Maintenance	X.150–X.179
Administrative arrangements	X.180–X.199
OPEN SYSTEM INTERCONNECTION	
Model and notation	X.200–X.209
Service definitions	X.210–X.219
Connection-mode protocol specifications	X.220–X.229
Connectionless-mode protocol specifications	X.230–X.239
PICS proformas	X.240–X.259
Protocol Identification	X.260–X.269
Security Protocols	X.270–X.279
Layer Managed Objects	X.280–X.289
Conformance testing	X.290–X.299
INTERWORKING BETWEEN NETWORKS	
General	X.300–X.349
Satellite data transmission systems	X.350–X.399
MESSAGE HANDLING SYSTEMS	X.400–X.499
DIRECTORY	X.500–X.599
OSI NETWORKING AND SYSTEM ASPECTS	
Networking	X.600–X.629
Efficiency	X.630–X.639
Quality of service	X.640–X.649
Naming, Addressing and Registration	X.650–X.679
Abstract Syntax Notation One (ASN.1)	X.680–X.699
OSI MANAGEMENT	
Systems Management framework and architecture	X.700–X.709
Management Communication Service and Protocol	X.710–X.719
Structure of Management Information	X.720–X.729
Management functions and ODMA functions	**X.730–X.799**
SECURITY	X.800–X.849
OSI APPLICATIONS	
Commitment, Concurrency and Recovery	X.850–X.859
Transaction processing	X.860–X.879
Remote operations	X.880–X.899
OPEN DISTRIBUTED PROCESSING	X.900–X.999

For further details, please refer to ITU-T List of Recommendations.

INTERNATIONAL STANDARD 10164-11

ITU-T RECOMMENDATION X.739

INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION – SYSTEMS MANAGEMENT: METRIC OBJECTS AND ATTRIBUTES

AMENDMENT 1
Implementation conformance statement proformas

Summary

ITU-T Rec. X.739 | ISO/IEC 10164-11 provides many possible options for implementors to choose from in the development of a product. This means that an Operations System (OS) product from one vendor needing to interwork with an OS product from another vendor must be developed to some common and explicit agreement both developers use concerning the actual options to be developed in their software products for X.739 based messages. This Amendment provides a means to specify message options in such a way that the later documentation of actual options chosen for the product can be more explicit. The result is that the time to carry out interoperability tests between a management system from one vendor and a management system from another vendor, may be reduced because product developers can be provided with more explicit message specification.

Source

The ITU-T Recommendation X.739, Amendment 1 was approved on the 9th of August 1997. The identical text is also published as ISO/IEC International Standard 10164-11.

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. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1.

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.

NOTE

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

INTELLECTUAL PROPERTY RIGHTS

The ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. The ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, the ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

© ITU 1998

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the ITU, except as noted in footnotes 1) to 10) in Annexes E to N respectively.

CONTENTS

		Page
1)	Subclause 2.1	1
2)	Subclause 2.2	1
3)	Subclause 3.7	1
4)	Clause 4	2
5)	Clause 13	2
13	Conformance	2
6)	New Annexes E to N	4
Annex E –	MCS proforma	4
Annex F –	MICS proforma	10
Annex G –	MOCS proforma For "Mean and variance monitor" managed object class	15
Annex H –	MOCS proforma For "Mean and percentile monitor" managed object class	23
Annex I –	MOCS proforma For "Mean and min max monitor" managed object class	28
Annex J –	MOCS proforma For "Moving average mean monitor" managed object class	33
Annex K –	MOCS proforma For "Algorithm indicating mean monitor" managed object class	38
Annex L –	MOCS proforma For "Mean monitor" managed object class	43
Annex M –	MOCS proforma For "Monitor metric" managed object class	48
Annex N –	MRCS proforma for name binding	53

INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION – SYSTEMS MANAGEMENT: METRIC OBJECTS AND ATTRIBUTES

AMENDMENT 1
Implementation conformance statement proformas

1) Subclause 2.1

Add the following reference by numerical order:

- 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.*
- CCITT Recommendation X.735 (1992) | ISO/IEC 10164-6:1993, *Information technology – Open Systems Interconnection – Systems management: Log control function.*
- ITU-T Recommendation X.738 (1993) | ISO/IEC 10164-13:1995, *Information technology – Open Systems Interconnection – Systems management: Summarization function.*

2) Subclause 2.2

Add the following reference by numerical order:

- CCITT Recommendation X.290 (1992), *OSI conformance testing methodology and framework for protocol Recommendations for CCITT applications – General concepts.*

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

- 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 (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) Subclause 3.7

Add the following before the existing 3.7 and renumber the rest of the subclause:

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

Add the following abbreviations by alphabetical order:

ICS Implementation Conformance Statement

MCS Management Conformance Summary

MICS Management Information Conformance Summary

MIDS Management Information Definition Statement

MOCS Managed Object Conformance Statement

MRCS Managed Relationship Conformance Statement

PICS Protocol Implementation Conformance Statement

5) Clause 13

Replace this clause 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 E.1.

If a claim of conformance is made for support in the manager role, the implementation shall support at least one management operation or notification of the managed objects specified by this Recommendation | International Standard. The conformance requirements in the manager role for those management operations and notifications are identified in Table E.2 and further tables referenced by Annex E.

If a claim of conformance is made for support in the agent role, the implementation shall support one or more instances of the managed object classes identified in Table E.3 and further tables referenced by Annex E.

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

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 MRCS proforma which conforms to this Recommendation | International Standard shall be technically identical to the proformas specified in Annexes E, F, G, H 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 E 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.

6) New Annexes E to N

Add the following annexes:

Annex E[1)]

MCS proforma

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

E.1 Introduction

E.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.

E.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.

E.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).

---

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.

E.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.

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 – Title *(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.

E.2 Identification of the implementation

E.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

E.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.

E.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.

E.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

E.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.

E.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.

E.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 E.1.

Table E.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 E.2.

Table E.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 metric managed object	c1		
3	Object deletion notification from at least one metric managed object	c1		
4	Attribute value change notification from at least one metric managed object	c1		
5	State change notification from at least one metric managed object	c1		
6	Quality of service alarm notification from at least one metric managed object	c1		
c1: if E.1/1a then o.2 else –.				

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

Table E.3 – Agent role minimum conformance requirement

Index	Item	Status	Support	Additional information
1	Algorithm indicating mean monitor object class	c2		
2	Mean and minmax monitor object class	c2		
3	Mean and percentile monitor object class	c2		
4	Mean and variance monitor object class	c2		
5	Mean monitor object class	c2		
6	Monitor metric object class	c2		
7	Moving average mean monitor object class	c2		
c2: if E.1/2a then o.3 else –.				

Table E.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 E.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 the Tables E.5 to E.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 E.6 to E.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 E.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 E.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.733 | ISO/IEC 10164-4	Annex C all tables	alarmRecord	–	c4			
2	CCITT Rec. X.730 | ISO/IEC 10164-1	Annex C all tables	objectCreation, objectDeletion and attribute valueChange records	–	c4			
3	CCITT Rec. X.731 | ISO/IEC 10164-2	Annex C all tables	stateChange Record	–	c4			
4	CCITT Rec. X.739 | ISO/IEC 10164-11	Annex G	meanAndVarianceMonitor	–	c5			
5	CCITT Rec. X.739 | ISO/IEC 10164-11	Annex H	meanAndPercentileMonitor	–	c7			
6	CCITT Rec. X.739 | ISO/IEC 10164-11	Annex I	meanAndMinMaxMonitor	–	c6			
7	CCITT Rec. X.739 | ISO/IEC 10164-11	Annex J	movingAverageMeanMonitor	–	c11			
8	CCITT Rec. X.739 | ISO/IEC 10164-11	Annex K	algorithmIndicatingMeanMonitor	–	c8			

Table E.6 *(concluded)*

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
9	CCITT Rec. X.739 | ISO/IEC 10164-11	Annex L	meanMonitor	–	c9			
10	CCITT Rec. X.739 | ISO/IEC 10164-11	Annex M	monitorMetric	–	c10			

c4: if (E.3/1a or E.3/2a or E.3/3a or E.3/4a or E.3/5a or E.3/6a or E.3/7a) and E.4/1a then m else –.

c5: if E.3/4a then m else –.

c6: if E.3/2a then m else –.

c7: if E.3/3a then m else –.

c8: if E.3/1a then m else –.

c9: if E.3/5a then m else –.

c10: if E.3/6a then m else –.

c11: if E.3/7a then m else –.

Table E.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.739 | ISO/IEC 10164-11	Annex N all tables	scanner-system	–	c12			
1	ITU-T Rec. X.738 | ISO/IEC 10164-13	Annex O all tables	conflictingPackagesScanner-system	–	c12			
1	CCITT Rec. X.735 | ISO/IEC 10164-6	Annex D Item D.1/1	logRecord-log	–	c12			

c12: if E.3/1a or E.3/2a or E.3/3a or E.3/4a or E.3/5a or E.3/6a or E.3/7a then o else –.

Table E.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	CCITT Rec. X.739 | ISO/IEC 10164-11	Tables F.1 and F.2	management operations	–	c13			
2	CCITT Rec. X.730 | ISO/IEC 10164-1	Table B.1	objectCreation, objectDeletion and attributeValueChange notifications	–	c14			
3	CCITT Rec. X.731 | ISO/IEC 10164-2	Table B.1	stateChange notification	–	c15			
4	CCITT Rec. X.733 | ISO/IEC 10164-4	Annex B Item B.1/1	qualityOfServiceAlarm notification	–	c16			

c13: if E.2/1a then m else –.

c14: if E.2/2a or E.2/3a or E.3/4a then m else –.

c15: if E.2/5a then m else –.

c16: if E.2/6a then m else –.

Annex F[2)]

MICS proforma

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

F.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.

F.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 the tables below and if necessary, provide additional information.

F.3 Symbols, abbreviations and terms

The following abbreviations are used throughout the MICS proforma:

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

moa-att joint-iso-itu-t ms(9) function(2) part11(11) attribute(7)

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

F.4 Statement of conformance to the management information

F.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.

Table F.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	objectClass	{dmi-att 65}	–	c1		o.4		–	
2	nameBinding	{dmi-att 63}	–	c1		o.4		–	
3	packages	{dmi-att 66}	–	c1		o.4		–	
4	allomorphs	{dmi-att 50}	–	c1		o.4		–	
5	scannerId	{moa-att 25}	–	c1		o.4		–	
6	granularityPeriod	{moa-att 23}	–	c1		o.4		o.4	
7	administrativeState	{dmi-att 31}	–	c1		o.4		o.4	
8	operationalState	{dmi-att 35}	–	–		o.4		–	
9	availabilityStatus	{dmi-att 33}	–	–		o.4		–	

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 F.1 *(continued)*

				Set by create		Get		Replace	
10	periodSynchronizationTime	{moa-att 24}	–	c1		o.4		o.4	
11	startTime	{dmi-att 68}	–	c1		o.4		o.4	
12	stopTime	{dmi-att 69}	DMI default	c1		o.4		o.4	
13	intervalsOfDay	{dmi-att 57}	DMI default	c1		o.4		o.4	
14	weekMask	{dmi-att 71}	DMI default	c1		o.4		o.4	
15	schedulerName	{dmi-att 67}	–	c1		o.4		–	
16	observedObjectInstance	{moa-att 16}	–	c1		o.4		–	
17	observedAttributeId	{moa-att 15}	–	c1		o.4		–	
18	derivedGauge	{moa-att 2}	–	–		o.4		–	
19	previousScanCounterValue	{moa-att 1}	–	c1		o.4		o.4	
20	proceduralStatus	{dmi-att 36}	–	–		o.4		–	
21	modulusValue	{moa-att 1}	–	c1		o.4		o.4	
22	previousScanGaugeValue	{moa-att 20}	–	c1		o.4		o.4	
23	severityIndicatingGaugeThreshold	{moa-att 18}	–	c1		o.4		o.4	
24	specificProblemIndicator	{moa-att 19}	–	c1		o.4		o.4	
25	derivedGaugeTimestamp	{moa-att 3}	–	–		o.4		–	
26	estimateOfMean	{moa-att 7}	–	c2		o.4		o.4	
27	movingTimePeriod	{moa-att 13}	–	c2		o.4		o.4	
28	estimateOfMeanSeverityIndicatingGaugeThreshold	{moa-att 6}	–	c2		o.4		o.4	
29	algorithmIdentifier	{moa-att 26}	–	c3		o.4		o.4	
30	estimateOfLargest	{moa-att 4}	–	c4		o.4		o.4	
31	estimateOfSmalest	{moa-att 9}	–	c4		o.4		o.4	
32	secondMovingTimePeriod	{moa-att 17}	–	c5		o.4		o.4	
33	estimateOfVariance	{moa-att 10}	–	c6		o.4		o.4	
34	estimateOfLargestInReplication	{moa-att 21}	–	c7		o.4		o.4	
35	estimateOfSmallestInReplication	{moa-att 22}	–	c7		o.4		o.4	
36	estimateOfMedian	{moa-att 7}	–	c7		o.4		o.4	
37	estimateOf100-PCTPercentile	{moa-att 11}	–	c7		o.4		o.4	
38	estimateOfPCTPercentile	{moa-att 8}	–	c7		o.4		o.4	
39	numberOfReplications	{moa-att 14}	–	c7		o.4		o.4	
40	configurablePCT	{moa-att 0}	–	c7		o.4		o.4	

c1: if F.2/1a or F.3/1a or F.4/1a or F.5/1a or F.6/1a or F.7/1a or F.8/1a then o.4 else –.

c2: if F.2/1a or F.3/1a or F.4/1a or F.5/1a or F.6/1a or F.7/1a then o.4 else –.

c3: if F.6/1a then o.4 else –.

c4: if F.4/1a then o.4 else –.

c5: if F.2/1a or F.3/1a then o.4 else –.

c6: if F.2/1a then o.4 else –.

c7: if F.3/1a then o.4 else –.

Table F.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	o.4		o.4		o.4		
12	–		–		o.4		
13	o.4		o.4		o.4		
14	o.4		o.4		o.4		
15	–		–		–		
16	–		–		–		
17	–		–		–		
18	–		–		–		
19	–		–		–		
20	–		–		–		
21	–		–		–		
22	–		–		–		
23	o.4		o.4		–		
24	–		–		–		
25	–		–		–		
26	–		–		–		
27	–		–		–		
28	o.4		o.4		–		
29	–		–		–		
30	–		–		–		
31	–		–		–		
32	–		–		–		
33	–		–		–		
34	–		–		–		
35	–		–		–		
36	–		–		–		
37	–		–		–		
38	–		–		–		
39	–		–		–		
40	–		–		–		

F.4.2 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.

F.4.2.1 Mean and variance monitor managed object class

Table F.2 – Create and delete support

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

F.4.2.2 Mean and percentile monitor managed object class

Table F.3 – Create and delete support

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

F.4.2.3 Mean and min max monitor managed object class

Table F.4 – Create and delete support

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

F.4.2.4 Moving average mean monitor managed object class

Table F.5 – Create and delete support

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

F.4.2.5 Algorithm indicating mean monitor managed object class

Table F.6 – Create and delete support

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

F.4.2.6 Mean monitor managed object class

Table F.7 – Create and delete support

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

F.4.2.7 Monitor metric managed object class

Table F.8 – Create and delete support

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

Annex G[3)]
MOCS proforma

For "Mean and variance monitor" managed object class

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

G.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.

G.1.1 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 the tables below and if necessary, provide additional information.

G.1.2 Symbols, abbreviations and terms

The MOCS proforma contained in this annex is comprised of information in tabular form, in accordance with CCITT Rec. X.291 | ISO/IEC 9646-2.

The following abbreviations are used throughout this proforma:

dmi-att	joint-iso-itu-t ms(9) smi(3) part2(2) attribute(7)
dmi-not	joint-iso-itu-t ms(9) smi(3) part2(2) notification(10)
dmi-pkg	joint-iso-itu-t ms(9) smi(3) part2(2) package(4)
moa-mo	joint-iso-itu-t ms(9) function(2) part11(11) managedObjectClass(3)
moa-att	joint-iso-itu-t ms(9) function(2) part11(11) attribute(7)
moa-pkg	joint-iso-itu-t ms(9) function(2) part11(11) package(4)
m3100-pkg	itu-t recommendation(0) m(13) gnm(3100) m3100InformationModel(0) package(4)

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

G.2 Statement of conformance to the managed object class

Table G.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	meanAndVarianceMonitor	{moa-mo 3}		

If the answer to the actual class question in the managed object class support Table G.1 is no, then the supplier of the implementation shall fill in the actual class support Table G.2 below.

Table G.2 – Actual class support

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

3) **Copyright release for MOCS proforma**

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.

G.3 Packages

Table G.3 – Package support

Index	Package template label	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	scannerPackage	–	–	m		
5	availabilityStatusPackage	{dmi-pkg 22}	–	c3		
6	duration	{dmi-pkg 26}	–	o		
7	dailyScheduling	{dmi-pkg 25}	–	o		
8	weeklyScheduling	{dmi-pkg 29}	–	o		
9	externalScheduler	{dmi-pkg 27}	–	o		
10	periodSynchronizationPackage	{moa-pkg 10}	–	o		
11	createDeleteNotificationPackage	{m3100-pkg 10}	–	o		
12	attributeValueChangeNotificationPackage	{m3100 pkg 4}	–	o		
13	stateChangeNotificationPackage	{m3100-pkg 28}	–	o		
14	monitorMetricPackage	–	–	m		
15	counterDifferencePackage	{moa-pkg 2}	–	o		
16	counterOverflowPackage	{moa-pkg 3}	–	o		
17	gaugeDifferencePackage	{moa-pkg 8}	–	o		
18	derivedGaugeThresholdPackage	{moa-pkg 4}	–	o		
19	specificProblemsIndicationPackage	{moa-pkg 9}	–	o		
20	derivedGaugeTimestampPackage	{moa-pkg 5}	–	o		
21	meanMonitorPackage	–	–	m		
22	estimateOfMeanThresholdPackage	{moa-pkg 6}	–	o		
23	movingAverageMeanMonitorPackage	–	–	m		
24	meanAndVarianceMonitorPackage	–	–	m		

c1: if G.3/3a or G.3/5a or G.3/6a or G.3/7a or G.3/8a or G.3/9a or G.3/10a or G.3/11a or G.3/12a or G.3/13a or G.3/15a or G.3/16a or G.3/17a or G.3/18a or G.3/19a or G.3/20a or G.3/22a then m else –.

c2: if G.1/1b then m else –.

c3: if G.3/6a or G.3/7a or G.3/8a or G.3/9a then m else –.

G.4 Attributes

Table G.4 – 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	objectClass	{dmi-att 65}	–	m		m		x	
2	nameBinding	{dmi-att 63}	–	o		m		c4	
3	packages	{dmi-att 66}	–	c5		c6		c7	
4	allomorphs	{dmi-att 50}	–	c8		c9		c4	
5	scannerId	{moa-att 25}	–	o		m		c4	
6	granularityPeriod	{moa-att 23}	–	m		m		m	
7	administrativeState	{dmi-att 31}	–	m		m		m	
8	operationalState	{dmi-att 35}	–	x		m		x	
9	availabilityStatus	{dmi-att 33}	off-duty required	c10		c11		c10	
10	periodSynchronizationTime	{moa-att 24}	–	c12		c12		c12	
11	startTime	{dmi-att 68}	–	c13		c13		c13	
12	stopTime	{dmi-att 69}	DMI default	c13		c13		c13	
13	intervalsOfDay	{dmi-att 57}	DMI default	c14		c14		c14	
14	weekMask	{dmi-att 71}	DMI default	c15		c15		c15	
15	schedulerName	{dmi-att 67}	–	c16		c17		c18	
16	observedObjectInstance	{moa-att 16}	–	m		m		x	
17	observedAttributeId	{moa-att 15}	–	m		m		x	
18	derivedGauge	{moa-att 2}	–	x		m		x	
19	previousScanCounterValue	{moa-att 1}	–	c19		c19		c19	
20	proceduralStatus	{dmi-att 36}	–	c20		c21		c20	
21	modulusValue	{moa-att 1}	–	c22		c22		c22	
22	previousScanGaugeValue	{moa-att 20}	–	c23		c23		c23	
23	severityIndicatingGaugeThreshold	{moa-att 18}	–	c24		c24		c24	
24	specificProblemIndicator	{moa-att 19}	–	c25		c25		c25	
25	derivedGaugeTimestamp	{moa-att 3}	–	c26		c27		c26	
26	estimateOfMean	{moa-att 7}	–	m		m		m	
27	movingTimePeriod	{moa-att 13}	–	m		m		m	
28	estimateOfMeanSeverityIndicatingGaugeThreshold	{moa-att 6}	–	c28		c28		c28	
29	secondMovingTimePeriod	{moa-att 17}	–	m		m		m	
30	estimateOfVariance	{moa-att 10}	–	m		m		m	

Table G.4 *(continued)*

	Add		Remove		Set to default		
Index	Status	Support	Status	Support	Status	Support	Additional information
1	–		–		x		
2	–		–		c4		
3	c7		c7		c7		
4	c4		c4		c4		
5	–		–		c4		
6	–		–		c4		
7	–		–		c4		
8	–		–		x		
9	c10		c10		c10		
10	–		–		c4		
11	–		–		c4		
12	–		–		c13		
13	c14		c14		c14		
14	c15		c15		c15		
15	–		–		c18		
16	–		–		x		
17	–		–		x		
18	–		–		x		
19	–		–		c4		
20	–		–		c20		
21	–		–		c4		
22	–		–		c4		
23	c24		c24		c4		
24	–		–		c4		
25	–		–		c26		
26	–		–		c4		
27	–		–		c4		
28	c28		c28		c4		
29	–		–		c4		
30	–		–		c4		

c4: if G.1/1b then x else –.
c5: if G.3/2a then o else –.
c6: if G.3/2a then m else –.
c7: if G.3/2a then x else –.
c8: if G.3/3a then o else –.
c9: if G.3/5a then m else –.

Table G.4 *(concluded)*

c10: if G.3/5a then x else –.
c11: if G.3/5a then m else –.
c12: if G.3/10a then m else –.
c13: if G.3/6a then m else –.
c14: if G.3/7a then m else –.
c15: if G.3/8a then m else –.
c16: if G.3/9a then o else –.
c17: if G.3/9a then m else –.
c18: if G.3/9a then x else –.
c19: if G.3/15a then m else –.
c20: if G.3/15a or G.3/17a then x else –.
c21: if G.3/15a or G.3/17a then m else –.
c22: if G.3/16a then m else –.
c23: if G.3/17a then m else –.
c24: if G.3/18a then m else –.
c25: if G.3/19a then m else –.
c26: if G.3/20a then x else –.
c27: if G.3/20a then m else –.
c28: if G.3/22a then m else –.

G.5 Notifications

Table G.5 – Notification support

					Support		
Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Con-firmed	Non-con-firmed	Additional information
1	objectCreation	{dmi-not 6}	–	c29			
2	objectDeletion	{dmi-not 7}	–	c29			
3	attributeValueChange	{dmi-not 1}	–	c30			
4	stateChange	{dmi-not 14}	–	c31			
5	qualityofServiceAlarm	{dmi-not 11}	–	c32			
c29: if G.3/11a then m else –. c30: if G.3/12a then m else –. c31: if G.3/13a then m else –. c32: if G.3/18a or G.3/22a then m else –.							

Table G.5 *(continued)*

Index	Subindex	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 2	o		
	1.2	attributeList	{dmi-att 9}	–	o		
	1.3	notificationIdentifier	{dmi-att 16}	–	c33		
	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.1		
	1.4.2.2	nonSpecificForm		–	c:o.1		
	1.4.2.3	localDistinguishedName		–	c:o.1		
	1.5	additionalText	{dmi-att 7}	–	o		
	1.6	additionalInformation	{dmi-att 6}	–	o		
2	2.1	sourceIndicator	{dmi-att 26}	0 to 2	o		
	2.2	attributeList	{dmi-att 9}	–	o		
	2.3	notificationIdentifier	{dmi-att 16}	–	c34		
	2.4	correlatedNotifications	{dmi-att 12}	–	o		
	2.4.1	correlatedNotifications		–	c:m		
	2.4.2	sourceObjectInst		–	c:o		
	2.4.2.1	distinguishedName		–	c:o.2		
	2.4.2.2	nonSpecificForm		–	c:o.2		
	2.4.2.3	localDistinguishedName		–	c:o.2		
	2.5	additionalText	{dmi-att 7}	–	o		
	2.6	additionalInformation	{dmi-att 6}	–	o		
3	3.1	sourceIndicator	{dmi-att 26}	0 to 2	o		
	3.2	attributeIdentifierList	{dmi-att 8}	–	o		
	3.3	attributeValueChangeDefinition	{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}	–	c35		
	3.5	correlatedNotifications	{dmi-att 12}	–	o		
	3.5.1	correlatedNotifications		–	c:m		
	3.5.2	sourceObjectInst		–	c:o		
	3.5.2.1	distinguishedName		–	c:o.3		
	3.5.2.2	nonSpecificForm		–	c:o.3		
	3.5.2.3	localDistinguishedName		–	c:o.3		
	3.6	additionalText	{dmi-att 7}	–	o		
	3.7	additionalInformation	{dmi-att 6}	–	o		

c33: if G.5/1.4a then m else o.

c34: if G.5/2.4a then m else o.

c35: if G.5/3.5a then m else o.

Table G.5 *(continued)*

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
4	4.1	sourceIndicator	{dmi-att 26}	0 to 2	o		
	4.2	attribute identifier list	{dmi-att 8}	–	o		
	4.3	stateChangeDefinition	{dmi-att 28}	–	m		
	4.3.1	attributeId		–	m		
	4.3.2	oldAttributeValue		–	o		
	4.3.3	newAttributeValue		–	m		
	4.4	notificationIdentifier	{dmi-att 16}	–	c36		
	4.5	correlatedNotifications	{dmi-att 12}	–	o		
	4.5.1	correlatedNotifications		–	c:m		
	4.5.2	sourceObjectInst		–	c:o		
	4.5.2.1	distinguishedName		–	c:o.4		
	4.5.2.2	nonSpecificForm		–	c:o.4		
	4.5.2.3	localDistinguishedName		–	c:o.4		
	4.6	additionalText	{dmi-att 7}	–	o		
	4.7	additionalInformation	{dmi-att 6}	–	o		
5	5.1	probableCause	{dmi-att 18}	threshold Crossed	m		
	5.1.1	globalValue	–	–	o.41		
	5.1.2	localValue	–	–	o.41		
	5.2	specificProblems	{dmi-att 27}	–	c21		
	5.2.1	global	–	–	c:o.42		
	5.2.2	local	–	–	c:o.42		
	5.3	perceivedSeverity	{dmi-att 17}	defined on a per object basis	m		
	5.4	backedupStatus	{dmi-att 11}	–	o		
	5.5	backupObject	{dmi-att 40}	for backUp relationships	o		
	5.5.1	distinguishedName	–	–	c:o.43		
	5.5.2	nonSpecificForm	–	–	c:o.43		
	5.5.3	localDistinguishedName	–	–	c:o.43		
	5.6	trendIndication	{dmi-att 30}	–	o		
	5.7	thresholdInfo	{dmi-att 29}	–	m		
	5.7.1	triggeredThreshold	–	–	m		
	5.7.2	observedValue	–	–	m		
	5.7.2.1	integer	–	–	o.44		
	5.7.2.2	real	–	–	o.44		
	5.7.3	thresholdLevel	–	–	o		
	5.7.3.1	up	–	–	c:o.45		
	5.7.3.1.1	high	–	–	c:m		
	5.7.3.1.1.1	integer	–	–	c:o.46		
	5.7.3.1.1.2	real	–	–	c:o.46		
	5.7.3.1.2	low	–	–	c:o		
	5.7.3.1.2.1	integer	–	–	c:o.47		
	5.7.3.1.2.2	real	–	–	c:o.47		

c36: if G.5/4.5a then m else o.

Table G.5 *(concluded)*

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
	5.7.3.2	down	–	–	c:o.45		
	5.7.3.2.1	high	–	–	c:m		
	5.7.3.2.1.1	integer	–	–	c:o.48		
	5.7.3.2.1.2	real	–	–	c:o.48		
	5.7.3.2.2	low	–	–	c:m		
	5.7.3.2.2.1	integer	–	–	c:o.49		
	5.7.3.2.2.2	real	–	–	c:o.49		
	5.7.4	armTime	–	–	c:o		
	5.8	notificationIdentifier	{dmi-att 16}	–	c37		
	5.9	correlatedNotifications	{dmi-att 12}	–	o		
	5.9.1	correlatedNotificationIds	–	–	c:m		
	5.9.2	sourceObjectInst	–	–	c:o		
	5.9.2.1	distinguishedName	–	–	c:o.55		
	5.9.2.2	nonSpecificForm	–	–	c:o.55		
	5.9.2.3	localDistinguishedName	–	–	c:o.55		
	5.10	stateChangeDefinition	{dmi-att 28}	–	m		
	5.10.1	attributeId	–	–	c:m		
	5.10.2	oldAttributeValue	–	–	c:o		
	5.10.3	newAttributeValue	–	–	c:m		
	5.11	monitoredAttributes	{dmi-att 15}	observed Object Instance, observed AttributeId, other attributes which are metrics	m		
	5.12	proposedRepairActions	{dmi-att 19}	–	o		
	5.12.1	global	–	–	c:o.50		
	5.12.2	local	–	–	c:o.50		
	5.13	additionalText	{dmi-att 7}	–	o		
	5.14	additionalInformation	{dmi-att 6}	required for some objects	o		
c37: if G.5/5.9a then m else o.							

Annex H[4)]
MOCS proforma

For "Mean and percentile monitor" managed object class

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

H.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.

H.1.1 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 the tables below and if necessary, provide additional information.

H.1.2 Symbols, abbreviations and terms

The MOCS proforma contained in this annex is comprised of information in tabular form, in accordance with CCITT Rec. X.291 | ISO/IEC 9646-2.

The following abbreviations are used throughout this proforma:

dmi-att	joint-iso-itu-t ms(9) smi(3) part2(2) attribute(7)
dmi-not	joint-iso-itu-t ms(9) smi(3) part2(2) notification(10)
dmi-pkg	joint-iso-itu-t ms(9) smi(3) part2(2) package(4)
moa-mo	joint-iso-itu-t ms(9) function(2) part11(11) managedObjectClass(3)
moa-att	joint-iso-itu-t ms(9) function(2) part11(11) attribute(7)
moa-pkg	joint-iso-itu-t ms(9) function(2) part11(11) package(4)
m3100-pkg	itu-t recommendation(0) m(13) gnm(3100) m3100InformationModel(0) package(4)

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

H.2 Statement of conformance to the managed object class

Table H.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	meanAndPercentileMonitor	{moa-mo 2}		

If the answer to the actual class question in the managed object class support Table H.1 is no, then the supplier of the implementation shall fill in the actual class support Table H.2 below.

Table H.2 – Actual class support

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

4) **Copyright release for MOCS proforma**

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.

H.3 Packages

Table H.3 – Package support

Index	Package template label	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	scannerPackage	–	–	m		
5	availabilityStatusPackage	{dmi-pkg 22}	–	c3		
6	duration	{dmi-pkg 26}	–	o		
7	dailyScheduling	{dmi-pkg 25}	–	o		
8	weeklyScheduling	{dmi-pkg 29}	–	o		
9	externalScheduler	{dmi-pkg 27}	–	o		
10	periodSynchronizationPackage	{moa-pkg 10}	–	o		
11	createDeleteNotificationPackage	{m3100-pkg 10}	–	o		
12	attributeValueChangeNotificationPackage	{m3100 pkg 4}	–	o		
13	stateChangeNotificationPackage	{m3100-pkg 28}	–	o		
14	monitorMetricPackage	–	–	m		
15	counterDifferencePackage	{moa-pkg 2}	–	o		
16	counterOverflowPackage	{moa-pkg 3}	–	o		
17	gaugeDifferencePackage	{moa-pkg 8}	–	o		
18	derivedGaugeThresholdPackage	{moa-pkg 4}	–	o		
19	specificProblemsIndicationPackage	{moa-pkg 9}	–	o		
20	derivedGaugeTimestampPackage	{moa-pkg 5}	–	o		
21	meanMonitorPackage	–	–	m		
22	estimateOfMeanThresholdPackage	{moa-pkg 6}	–	o		
23	movingAverageMeanMonitorPackage	–	–	m		
24	meanAndPercentileMonitorPackage	–	–	m		
25	configurablePercentilePackage	{moa-pkg 1}	–	o		

c1: if H.3/3a or H.3/5a or H.3/6a or H.3/7a or H.3/8a or H.3/9a or H.3/10a or H.3/11a or H.3/12a or H.3/13a or H.3/15a or H.3/16a or H.3/17a or H.3/18a or H.3/19a or H.3/20a or H.3/22a or H.3/25a then m else –.

c2: if H.1/1b then m else –.

c3: if H.3/6a or H.3/7a or H.3/8a or H.3/9a then m else –.

H.4 Attributes

Table H.4 – 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	objectClass	{dmi-att 65}	–	m		m		x	
2	nameBinding	{dmi-att 63}	–	o		m		c4	
3	packages	{dmi-att 66}	–	c5		c6		c7	
4	allomorphs	{dmi-att 50}	–	c8		c9		c4	
5	scannerId	{moa-att 25}	–	o		m		c4	
6	granularityPeriod	{moa-att 23}	–	m		m		m	
7	administrativeState	{dmi-att 31}	–	m		m		m	
8	operationalState	{dmi-att 35}	–	x		m		x	
9	availabilityStatus	{dmi-att 33}	off-duty required	c10		c11		c10	
10	periodSynchronizationTime	{moa-att 24}	–	c12		c12		c12	
11	startTime	{dmi-att 68}	–	c13		c13		c13	
12	stopTime	{dmi-att 69}	DMI default	c13		c13		c13	
13	intervalsOfDay	{dmi-att 57}	DMI default	c14		c14		c14	
14	weekMask	{dmi-att 71}	DMI default	c15		c15		c15	
15	schedulerName	{dmi-att 67}	–	c16		c17		c18	
16	observedObjectInstance	{moa-att 16}	–	m		m		x	
17	observedAttributeId	{moa-att 15}	–	m		m		x	
18	derivedGauge	{moa-att 2}	–	x		m		x	
19	previousScanCounterValue	{moa-att 1}	–	c19		c19		c19	
20	proceduralStatus	{dmi-att 36}	–	c20		c21		c20	
21	modulusValue	{moa-att 1}	–	c22		c22		c22	
22	previousScanGaugeValue	{moa-att 20}	–	c23		c23		c23	
23	severityIndicatingGaugeThreshold	{moa-att 18}	–	c24		c24		c24	
24	specificProblemIndicator	{moa-att 19}	–	c25		c25		c25	
25	derivedGaugeTimestamp	{moa-att 3}	–	c26		c27		c26	
26	estimateOfMean	{moa-att 7}	–	m		m		m	
27	movingTimePeriod	{moa-att 13}	–	m		m		m	
28	estimateOfMeanSeverityIndicatingGaugeThreshold	{moa-att 6}	–	c28		c28		c28	
29	secondMovingTimePeriod	{moa-att 17}	–	m		m		m	
30	estimateOfLargestInReplication	{moa-att 21}	–	m		m		m	
31	estimateOfSmallestInReplication	{moa-att 22}	–	m		m		m	
32	estimateOfMedian	{moa-att 7}	–	m		m		m	
33	estimateOf100-PCTPercentile	{moa-att 11}	–	m		m		m	
34	estimateOfPCTPercentile	{moa-att 8}	–	m		m		m	
35	numberOfReplications	{moa-att 14}	–	m		m		m	
36	configurablePCT	{moa-att 0}	–	c29		c29		c29	

Table H.4 *(continued)*

	Add		Remove		Set to default		
Index	Status	Support	Status	Support	Status	Support	Additional information
1	–		–		x		
2	–		–		c4		
3	c7		c7		c7		
4	c4		c4		c4		
5	–		–		c4		
6	–		–		c4		
7	–		–		c4		
8	–		–		x		
9	c10		c10		c10		
10	–		–		c4		
11	–		–		c4		
12	–		–		c13		
13	c14		c14		c14		
14	c15		c15		c15		
15	–		–		c18		
16	–		–		x		
17	–		–		x		
18	–		–		x		
19	–		–		c4		
20	–		–		c20		
21	–		–		c4		
22	–		–		c4		
23	c24		c24		c4		
24	–		–		c4		
25	–		–		c26		
26	–		–		c4		
27	–		–		c4		
28	c28		c28		c4		
29	–		–		c4		
30	–		–		c4		
31	–		–		c4		
32	–		–		c4		
33	–		–		c4		
34	–		–		c4		
35	–		–		c4		
36	–		–		c4		

c4: if H.1/1b then x else –.
c5: if H.3/2a then o else –.
c6: if H.3/2a then m else –.
c7: if H.3/2a then x else –.

Table H.4 *(concluded)*

c8: if H.3/3a then o else –.
c9: if H.3/5a then m else –.
c10: if H.3/5a then x else –.
c11: if H.3/5a then m else –.
c12: if H.3/10a then m else –.
c13: if H.3/6a then m else –.
c14: if H.3/7a then m else –.
c15: if H.3/8a then m else –.
c16: if H.3/9a then o else –.
c17: if H.3/9a then m else –.
c18: if H.3/9a then x else –.
c19: if H.3/15a then m else –.
c20: if H.3/15a or H.3/17a then x else –.
c21: if H.3/15a or H.3/17a then m else –.
c22: if H.3/16a then m else –.
c23: if H.3/17a then m else –.
c24: if H.3/18a then m else –.
c25: if H.3/19a then m else –.
c26: if H.3/20a then x else –.
c27: if H.3/20a then m else –.
c28: if H.3/22a then m else –.
c29: if H.3/25a then m else –.

H.5 Notifications

Table H.5 – Notification support

					Support		
Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Con-firmed	Non-con-firmed	Additional information
1	objectCreation	{dmi-not 6}	–	c30			
2	objectDeletion	{dmi-not 7}	–	c30			
3	attributeValueChange	{dmi-not 1}	–	c31			
4	stateChange	{dmi-not 14}	–	c32			
5	qualityofServiceAlarm	{dmi-not 11}	–	c33			

c30: if H.3/11a then m else –.
c31: if H.3/12a then m else –.
c32: if H.3/13a then m else –.
c33: if H.3/18a or H.8/22a then m else –.

The detailed requirements for each of the above notifications for this managed object class are as specified in Table G.5. For this reason the table is not repeated here. The supplier of the implementation needs to complete a copy of Table G.5 for this managed object class if the support is different.

Annex I[5)]
MOCS proforma

For "Mean and min max monitor" managed object class

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

I.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.

I.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 the tables below and if necessary, provide additional information.

I.3 Symbols, abbreviations and terms

The MOCS proforma contained in this annex is comprised of information in tabular form, in accordance with CCITT Rec. X.291 | ISO/IEC 9646-2.

The following abbreviations are used throughout this proforma:

dmi-att	joint-iso-itu-t ms(9) smi(3) part2(2) attribute(7)
dmi-not	joint-iso-itu-t ms(9) smi(3) part2(2) notification(10)
dmi-pkg	joint-iso-itu-t ms(9) smi(3) part2(2) package(4)
moa-mo	joint-iso-itu-t ms(9) function(2) part11(11) managedObjectClass(3)
moa-att	joint-iso-itu-t ms(9) function(2) part11(11) attribute(7)
moa-pkg	joint-iso-itu-t ms(9) function(2) part11(11) package(4)
m3100-pkg	itu-t recommendation(0) m(13) gnm(3100) m3100InformationModel(0) package(4)

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

I.4 Mean and min max monitor managed object class

I.4.1 Statement of conformance to the managed object class

Table I.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	meanAndMinMaxMonitor	{moa-mo 1}		

5) **Copyright release for MOCS proforma**

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 I.1 is no, then the supplier of the implementation shall fill in the actual class support Table I.2 below.

Table I.2 – Actual class support

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

I.4.2 Packages

Table I.3 – Package support

Index	Package template label	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	scannerPackage	–	–	m		
5	availabilityStatusPackage	{dmi-pkg 22}	–	c3		
6	duration	{dmi-pkg 26}	–	o		
7	dailyScheduling	{dmi-pkg 25}	–	o		
8	weeklyScheduling	{dmi-pkg 29}	–	o		
9	externalScheduler	{dmi-pkg 27}	–	o		
10	periodSynchronizationPackage	{moa-pkg 10}	–	o		
11	createDeleteNotificationPackage	{m3100-pkg 10}	–	o		
12	attributeValueChangeNotificationPackage	{m3100 pkg 4}	–	o		
13	stateChangeNotificationPackage	{m3100-pkg 28}	–	o		
14	monitorMetricPackage	–	–	m		
15	counterDifferencePackage	{moa-pkg 2}	–	o		
16	counterOverflowPackage	{moa-pkg 3}	–	o		
17	gaugeDifferencePackage	{moa-pkg 8}	–	o		
18	derivedGaugeThresholdPackage	{moa-pkg 4}	–	o		
19	specificProblemsIndicationPackage	{moa-pkg 9}	–	o		
20	derivedGaugeTimestampPackage	{moa-pkg 5}	–	o		
21	meanMonitorPackage	–	–	m		
22	estimateOfMeanThresholdPackage	{moa-pkg 6}	–	o		
23	movingAverageMeanMonitorPackage	–	–	m		
24	meanAndMinMaxMonitorPackage	–	–	m		

c1: if I.3/3a or I.3/5a or I.3/6a or I.3/7a or I.3/8a or I.3/9a or I.3/10a or I.3/11a or I.3/12a or I.3/13a or I.3/15a or I.3/16a or I.3/17a or I.3/18a or I.3/19a or I.3/20a or I.3/22a then m else –.

c2: if I.1/1b then m else –.

c3: if I.3/6a or I.3/7a or I.3/8a or I.3/9a then m else –.

I.4.3 Attributes

Table I.4 – 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	objectClass	{dmi-att 65}	–	m		m		x	
2	nameBinding	{dmi-att 63}	–	o		m		c4	
3	packages	{dmi-att 66}	–	c5		c6		c7	
4	allomorphs	{dmi-att 50}	–	c8		c9		c4	
5	scannerId	{moa-att 25}	–	o		m		c4	
6	granularityPeriod	{moa-att 23}	–	m		m		m	
7	administrativeState	{dmi-att 31}	–	m		m		m	
8	operationalState	{dmi-att 35}	–	x		m		x	
9	availabilityStatus	{dmi-att 33}	off-duty required	c10		c11		c10	
10	periodSynchronizationTime	{moa-att 24}	–	c12		c12		c12	
11	startTime	{dmi-att 68}	–	c13		c13		c13	
12	stopTime	{dmi-att 69}	DMI default	c13		c13		c13	
13	intervalsOfDay	{dmi-att 57}	DMI default	c14		c14		c14	
14	weekMask	{dmi-att 71}	DMI default	c15		c15		c15	
15	schedulerName	{dmi-att 67}	–	c16		c17		c18	
16	observedObjectInstance	{moa-att 16}	–	m		m		x	
17	observedAttributeId	{moa-att 15}	–	m		m		x	
18	derivedGauge	{moa-att 2}	–	x		m		x	
19	previousScanCounterValue	{moa-att 1}	–	c19		c19		c19	
20	proceduralStatus	{dmi-att 36}	–	c20		c21		c20	
21	modulusValue	{moa-att 1}	–	c22		c22		c22	
22	previousScanGaugeValue	{moa-att 20}	–	c23		c23		c23	
23	severityIndicatingGaugeThreshold	{moa-att 18}	–	c24		c24		c24	
24	specificProblemIndicator	{moa-att 19}	–	c25		c25		c25	
25	derivedGaugeTimestamp	{moa-att 3}	–	c26		c27		c26	
26	estimateOfMean	{moa-att 7}	–	m		m		m	
27	movingTimePeriod	{moa-att 13}	–	m		m		m	
28	estimateOfMeanSeverityIndicatingGaugeThreshold	{moa-att 6}	–	c28		c28		c28	
29	estimateOfLargest	{moa-att 4}	–	m		m		m	
30	estimateOfSmallest	{moa-att 9}	–	m		m		m	

Table I.4 *(continued)*

	Add		Remove		Set to default		
Index	Status	Support	Status	Support	Status	Support	Additional information
1	–		–		x		
2	–		–		c4		
3	c7		c7		c7		
4	c4		c4		c4		
5	–		–		c4		
6	–		–		c4		
7	–		–		c4		
8	–		–		x		
9	c10		c10		c10		
10	–		–		c4		
11	–		–		c4		
12	–		–		c13		
13	c14		c14		c14		
14	c15		c15		c15		
15	–		–		c18		
16	–		–		x		
17	–		–		x		
18	–		–		x		
19	–		–		c4		
20	–		–		c20		
21	–		–		c4		
22	–		–		c4		
23	c24		c24		c4		
24	–		–		c4		
25	–		–		c26		
26	–		–		c4		
27	–		–		c4		
28	c28		c28		c4		
29	–		–		c4		
30	–		–		c4		

c4: if I.1/1b then x else –.
c5: if I.3/2a then o else –.
c6: if I.3/2a then m else –.
c7: if I.3/2a then x else –.
c8: if I.3/3a then o else –.
c9: if I.3/5a then m else –.
c10: if I.3/5a then x else –.

Table I.4 *(concluded)*

c11: if I.3/5a then m else –.
c12: if I.3/10a then m else –.
c13: if I.3/6a then m else –.
c14: if I.3/7a then m else –.
c15: if I.3/8a then m else –.
c16: if I.3/9a then o else –.
c17: if I.3/9a then m else –.
c18: if I.3/9a then x else –.
c19: if I.3/15a then m else –.
c20: if I.3/15a or I.3/17a then x else –.
c21: if I.3/15a or I.3/17a then m else –.
c22: if I.3/16a then m else –.
c23: if I.3/17a then m else –.
c24: if I.3/18a then m else –.
c25: if I.3/19a then m else –.
c26: if I.3/20a then x else –.
c27: if I.3/20a then m else –.
c28: if I.3/22a then m else –.

I.4.4 Notifications

Table I.5 – Notification support

					Support		
Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Con-firmed	Non-con-firmed	Additional information
1	objectCreation	{dmi-not 6}	–	c29			
2	objectDeletion	{dmi-not 7}	–	c29			
3	attributeValueChange	{dmi-not 1}	–	c30			
4	stateChange	{dmi-not 14}	–	c31			
5	qualityofServiceAlarm	{dmi-not 11}	–	c32			

c29: if I.3/11a then m else –.
c30: if I.3/12a then m else –.
c31: if I.3/13a then m else –.
c32: if I.3/18a or I.12/22a then m else –.

The detailed requirements for each of the above notifications for this managed object class are as specified in Table G.5. For this reason the table is not repeated here. The supplier of the implementation needs to complete a copy of Table G.5 for this managed object class if the support is different.

Annex J[6)]
MOCS proforma

For "Moving average mean monitor" managed object class

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

J.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.

J.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 the tables below and if necessary, provide additional information.

J.3 Symbols, abbreviations and terms

The MOCS proforma contained in this annex is comprised of information in tabular form, in accordance with CCITT Rec. X.291 | ISO/IEC 9646-2.

The following abbreviations are used throughout this proforma:

dmi-att	joint-iso-itu-t ms(9) smi(3) part2(2) attribute(7)
dmi-not	joint-iso-itu-t ms(9) smi(3) part2(2) notification(10)
dmi-pkg	joint-iso-itu-t ms(9) smi(3) part2(2) package(4)
moa-mo	joint-iso-itu-t ms(9) function(2) part11(11) managedObjectClass(3)
moa-att	joint-iso-itu-t ms(9) function(2) part11(11) attribute(7)
moa-pkg	joint-iso-itu-t ms(9) function(2) part11(11) package(4)
m3100-pkg	itu-t recommendation(0) m(13) gnm(3100) m3100InformationModel(0) package(4)

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

J.4 Moving average mean monitor managed object class

J.4.1 Statement of conformance to the managed object class

Table J.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	movingAverageMeanMonitor	{moa-mo 6}		

6) **Copyright release for MOCS proforma**

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 J.1 is no, then the supplier of the implementation shall fill in the actual class support Table J.2 below.

Table J.2 – Actual class support

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

J.4.2 Packages

Table J.3 – Package support

Index	Package template label	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	scannerPackage	–	–	m		
5	availabilityStatusPackage	{dmi-pkg 22}	–	c3		
6	duration	{dmi-pkg 26}	–	o		
7	dailyScheduling	{dmi-pkg 25}	–	o		
8	weeklyScheduling	{dmi-pkg 29}	–	o		
9	externalScheduler	{dmi-pkg 27}	–	o		
10	periodSynchronizationPackage	{moa-pkg 10}	–	o		
11	createDeleteNotificationPackage	{m3100-pkg 10}	–	o		
12	attributeValueChangeNotificationPackage	{m3100 pkg 4}	–	o		
13	stateChangeNotificationPackage	{m3100-pkg 28}	–	o		
14	monitorMetricPackage	–	–	m		
15	counterDifferencePackage	{moa-pkg 2}	–	o		
16	counterOverflowPackage	{moa-pkg 3}	–	o		
17	gaugeDifferencePackage	{moa-pkg 8}	–	o		
18	derivedGaugeThresholdPackage	{moa-pkg 4}	–	o		
19	specificProblemsIndicationPackage	{moa-pkg 9}	–	o		
20	derivedGaugeTimestampPackage	{moa-pkg 5}	–	o		
21	meanMonitorPackage	–	–	m		
22	estimateOfMeanThresholdPackage	{moa-pkg 6}	–	o		
23	movingAverageMeanMonitorPackage	–	–	m		

c1: if J.3/3a or J.3/5a or J.3/6a or J.3/7a or J.3/8a or J.3/9a or J.3/10a or J.3/11a or J.3/12a or J.3/13a or J .3/15a or J.3/16a or J.3/17a or J.3/18a or J.3/19a or J.3/20a or J.3/22a then m else –.

c2: if J.1/1b then m else –.

c3: if J.3/6a or J.3/7a or J.3/8a or J.3/9a then m else –.

J.4.3 Attributes

Table J.4 – 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	objectClass	{dmi-att 65}	–	m		m		x	
2	nameBinding	{dmi-att 63}	–	o		m		c4	
3	packages	{dmi-att 66}	–	c5		c6		c7	
4	allomorphs	{dmi-att 50}	–	c8		c9		c4	
5	scannerId	{moa-att 25}	–	o		m		c4	
6	granularityPeriod	{moa-att 23}	–	m		m		m	
7	administrativeState	{dmi-att 31}	–	m		m		m	
8	operationalState	{dmi-att 35}	–	x		m		x	
9	availabilityStatus	{dmi-att 33}	off-duty required	c10		c11		c10	
10	periodSynchronizationTime	{moa-att 24}	–	c12		c12		c12	
11	startTime	{dmi-att 68}	–	c13		c13		c13	
12	stopTime	{dmi-att 69}	DMI default	c13		c13		c13	
13	intervalsOfDay	{dmi-att 57}	DMI default	c14		c14		c14	
14	weekMask	{dmi-att 71}	DMI default	c15		c15		c15	
15	schedulerName	{dmi-att 67}	–	c16		c17		c18	
16	observedObjectInstance	{moa-att 16}	–	m		m		x	
17	observedAttributeId	{moa-att 15}	–	m		m		x	
18	derivedGauge	{moa-att 2}	–	x		m		x	
19	previousScanCounterValue	{moa-att 1}	–	c19		c19		c19	
20	proceduralStatus	{dmi-att 36}	–	c20		c21		c20	
21	modulusValue	{moa-att 1}	–	c22		c22		c22	
22	previousScanGaugeValue	{moa-att 20}	–	c23		c23		c23	
23	severityIndicatingGaugeThreshold	{moa-att 18}	–	c24		c24		c24	
24	specificProblemIndicator	{moa-att 19}	–	c25		c25		c25	
25	derivedGaugeTimestamp	{moa-att 3}	–	c26		c27		c26	
26	estimateOfMean	{moa-att 7}	–	m		m		m	
27	movingTimePeriod	{moa-att 13}	–	m		m		m	
28	estimateOfMeanSeverityIndicatingGaugeThreshold	{moa-att 6}	–	c28		c28		c28	

Table J.4 *(continued)*

	Add		Remove		Set to default		
Index	Status	Support	Status	Support	Status	Support	Additional information
1	–		–		x		
2	–		–		c4		
3	c7		c7		c7		
4	c4		c4		c4		
5	–		–		c4		
6	–		–		c4		
7	–		–		c4		
8	–		–		x		
9	c10		c10		c10		
10	–		–		c4		
11	–		–		c4		
12	–		–		c13		
13	c14		c14		c14		
14	c15		c15		c15		
15	–		–		c18		
16	–		–		x		
17	–		–		x		
18	–		–		x		
19	–		–		c4		
20	–		–		c20		
21	–		–		c4		
22	–		–		c4		
23	c24		c24		c4		
24	–		–		c4		
25	–		–		c26		
26	–		–		c4		
27	–		–		c4		
28	c28		c28		c4		

c4: if J.1/1b then x else –.
c5: if J.3/2a then o else –.
c6: if J.3/2a then m else –.
c7: if J.3/2a then x else –.
c8: if J.3/3a then o else –.
c9: if J.3/5a then m else –.
c10: if J.3/5a then x else –.
c11: if J.3/5a then m else –.
c12: if J.3/10a then m else –.
c13: if J.3/6a then m else –.

Table J.4 *(concluded)*

c14: if J.3/7a then m else –.
c15: if J.3/8a then m else –.
c16: if J.3/9a then o else –.
c17: if J.3/9a then m else –.
c18: if J.3/9a then x else –.
c19: if J.3/15a then m else –.
c20: if J.3/15a or J.3/17a then x else –.
c21: if J.3/15a or J.3/17a then m else –.
c22: if J.3/16a then m else –.
c23: if J.3/17a then m else –.
c24: if J.3/18a then m else –.
c25: if J.3/19a then m else –.
c26: if J.3/20a then x else –.
c27: if J.3/20a then m else –.
c28: if J.3/22a then m else –.

J.4.4 Notifications

Table J.5 – Notification support

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Additional information
					Con-firmed	Non-con-firmed	
1	objectCreation	{dmi-not 6}	–	c29			
2	objectDeletion	{dmi-not 7}	–	c29			
3	attributeValueChange	{dmi-not 1}	–	c30			
4	stateChange	{dmi-not 14}	–	c31			
5	qualityofServiceAlarm	{dmi-not 11}	–	c32			

c29: if J.3/11a then m else –.
c30: if J.3/12a then m else –.
c31: if J.3/13a then m else –.
c32: if J.3/18a or J.16/22a then m else –.

The detailed requirements for each of the above notifications for this managed object class are as specified in Table J.5. For this reason the table is not repeated here. The supplier of the implementation needs to complete a copy of Table J.5 for this managed object class if the support is different.

Annex K[7)]
MOCS proforma

For "Algorithm indicating mean monitor" managed object class

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

K.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.

K.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 the tables below and if necessary, provide additional information.

K.3 Symbols, abbreviations and terms

The MOCS proforma contained in this annex is comprised of information in tabular form, in accordance with CCITT Rec. X.291 | ISO/IEC 9646-2.

The following abbreviations are used throughout this proforma:

dmi-att	joint-iso-itu-t ms(9) smi(3) part2(2) attribute(7)
dmi-not	joint-iso-itu-t ms(9) smi(3) part2(2) notification(10)
dmi-pkg	joint-iso-itu-t ms(9) smi(3) part2(2) package(4)
moa-mo	joint-iso-itu-t ms(9) function(2) part11(11) managedObjectClass(3)
moa-att	joint-iso-itu-t ms(9) function(2) part11(11) attribute(7)
moa-pkg	joint-iso-itu-t ms(9) function(2) part11(11) package(4)
m3100-pkg	itu-t recommendation(0) m(13) gnm(3100) m3100InformationModel(0) package(4)

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

K.4 Algorithm indicating mean monitor managed object class

K.4.1 Statement of conformance to the managed object class

Table K.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	algorithmIndicating MeanMonitor	{moa-mo 8}		

7) **Copyright release for MOCS proforma**

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 K.1 is no, then the supplier of the implementation shall fill in the actual class support Table K.2 below.

Table K.2 – Actual class support

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

K.4.2 Packages

Table K.3 – Package support

Index	Package template label	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	scannerPackage	–	–	m		
5	availabilityStatusPackage	{dmi-pkg 22}	–	c3		
6	duration	{dmi-pkg 26}	–	o		
7	dailyScheduling	{dmi-pkg 25}	–	o		
8	weeklyScheduling	{dmi-pkg 29}	–	o		
9	externalScheduler	{dmi-pkg 27}	–	o		
10	periodSynchronizationPackage	{moa-pkg 10}	–	o		
11	createDeleteNotificationPackage	{m3100-pkg 10}	–	o		
12	attributeValueChangeNotificationPackage	{m3100 pkg 4}	–	o		
13	stateChangeNotificationPackage	{m3100-pkg 28}	–	o		
14	monitorMetricPackage	–	–	m		
15	counterDifferencePackage	{moa-pkg 2}	–	o		
16	counterOverflowPackage	{moa-pkg 3}	–	o		
17	gaugeDifferencePackage	{moa-pkg 8}	–	o		
18	derivedGaugeThresholdPackage	{moa-pkg 4}	–	o		
19	specificProblemsIndicationPackage	{moa-pkg 9}	–	o		
20	derivedGaugeTimestampPackage	{moa-pkg 5}	–	o		
21	meanMonitorPackage	–	–	m		
22	estimateOfMeanThresholdPackage	{moa-pkg 6}	–	o		
23	algorithmIndicatingMeanMonitorPackage	–	–	m		

c1: if K.3/3a or K.3/5a or K.3/6a or K.3/7a or K.3/8a or K.3/9a or K.3/10a or K.3/11a or K.3/12a or K.3/13a or K.3/15a or K.3/16a or K.3/17a or K.3/18a or K.3/19a or K.3/20a or K.3/22a then m else –.

c2: if K.1/1b then m else –.

c3: if K.3/6a or K.3/7a or K.3/8a or K.3/9a then m else –.

K.4.3 Attributes

Table K.4 – 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	objectClass	{dmi-att 65}	–	m		m		x	
2	nameBinding	{dmi-att 63}	–	o		m		c4	
3	packages	{dmi-att 66}	–	c5		c6		c7	
4	allomorphs	{dmi-att 50}	–	c8		c9		c4	
5	scannerId	{moa-att 25}	–	o		m		c4	
6	granularityPeriod	{moa-att 23}	–	m		m		m	
7	administrativeState	{dmi-att 31}	–	m		m		m	
8	operationalState	{dmi-att 35}	–	x		m		x	
9	availabilityStatus	{dmi-att 33}	off-duty required	c10		c11		c10	
10	periodSynchronizationTime	{moa-att 24}	–	c12		c12		c12	
11	startTime	{dmi-att 68}	–	c13		c13		c13	
12	stopTime	{dmi-att 69}	DMI default	c13		c13		c13	
13	intervalsOfDay	{dmi-att 57}	DMI default	c14		c14		c14	
14	weekMask	{dmi-att 71}	DMI default	c15		c15		c15	
15	schedulerName	{dmi-att 67}	–	c16		c17		c18	
16	observedObjectInstance	{moa-att 16}	–	m		m		x	
17	observedAttributeId	{moa-att 15}	–	m		m		x	
18	derivedGauge	{moa-att 2}	–	x		m		x	
19	previousScanCounterValue	{moa-att 1}	–	c19		c19		c19	
20	proceduralStatus	{dmi-att 36}	–	c20		c21		c20	
21	modulusValue	{moa-att 1}	–	c22		c22		c22	
22	previousScanGaugeValue	{moa-att 20}	–	c23		c23		c23	
23	severityIndicatingGaugeThreshold	{moa-att 18}	–	c24		c24		c24	
24	specificProblemIndicator	{moa-att 19}	–	c25		c25		c25	
25	derivedGaugeTimestamp	{moa-att 3}	–	c26		c27		c26	
26	estimateOfMean	{moa-att 7}	–	m		m		m	
27	movingTimePeriod	{moa-att 13}	–	m		m		m	
28	estimateOfMeanSeverityIndicatingGaugeThreshold	{moa-att 6}	–	c28		c28		c28	
29	algorithmIdentifier	{moa-att 26}	–	m		m		m	

Table K.4 *(continued)*

	Add		Remove		Set to default		
Index	Status	Support	Status	Support	Status	Support	Additional information
1	–		–		x		
2	–		–		c4		
3	c7		c7		c7		
4	c4		c4		c4		
5	–		–		c4		
6	–		–		c4		
7	–		–		c4		
8	–		–		x		
9	c10		c10		c10		
10	–		–		c4		
11	–		–		c4		
12	–		–		c13		
13	c14		c14		c14		
14	c15		c15		c15		
15	–		–		c18		
16	–		–		x		
17	–		–		x		
18	–		–		x		
19	–		–		c4		
20	–		–		c20		
21	–		–		c4		
22	–		–		c4		
23	c24		c24		c4		
24	–		–		c4		
25	–		–		c26		
26	–		–		c4		
27	–		–		c4		
28	c28		c28		c4		
29	–		–		c4		

c4: if K.1/1b then x else –.
c5: if K.3/2a then o else –.
c6: if K.3/2a then m else –.
c7: if K.3/2a then x else –.
c8: if K.3/3a then o else –.
c9: if K.3/5a then m else –.
c10: if K.3/5a then x else –.
c11: if K.3/5a then m else –.

Table K.4 *(concluded)*

c12: if K.3/10a then m else –.
c13: if K.3/6a then m else –.
c14: if K.3/7a then m else –.
c15: if K.3/8a then m else –.
c16: if K.3/9a then o else –.
c17: if K.3/9a then m else –.
c18: if K.3/9a then x else –.
c19: if K.3/15a then m else –.
c20: if K.3/15a or K.3/17a then x else –.
c21: if K.3/15a or K.3/17a then m else –.
c22: if K.3/16a then m else –.
c23: if K.3/17a then m else –.
c24: if K.3/18a then m else –.
c25: if K.3/19a then m else –.
c26: if K.3/20a then x else –.
c27: if K.3/20a then m else –.
c28: if K.3/22a then m else –.

K.4.4 Notifications

Table K.5 – Notification support

					Support		
Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Con-firmed	Non-con-firmed	Additional information
1	objectCreation	{dmi-not 6}	–	c29			
2	objectDeletion	{dmi-not 7}	–	c29			
3	attributeValueChange	{dmi-not 1}	–	c30			
4	stateChange	{dmi-not 14}	–	c31			
5	qualityofServiceAlarm	{dmi-not 11}	–	c32			

c29: if K.3/11a then m else –.
c30: if K.3/12a then m else –.
c31: if K.3/13a then m else –.
c32: if K.3/18a or K.3/22a then m else –.

The detailed requirements for each of the above notifications for this managed object class are as specified in Table G.5. For this reason the table is not repeated here. The supplier of the implementation needs to complete a copy of Table G.5 for this managed object class if the support is different.

Annex L[8)]
MOCS proforma

For "Mean monitor" managed object class

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

L.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.

L.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 the tables below and if necessary, provide additional information.

L.3 Symbols, abbreviations and terms

The MOCS proforma contained in this annex is comprised of information in tabular form, in accordance with CCITT Rec. X.291 | ISO/IEC 9646-2.

The following abbreviations are used throughout this proforma:

dmi-att	joint-iso-itu-t ms(9) smi(3) part2(2) attribute(7)
dmi-not	joint-iso-itu-t ms(9) smi(3) part2(2) notification(10)
dmi-pkg	joint-iso-itu-t ms(9) smi(3) part2(2) package(4)
moa-mo	joint-iso-itu-t ms(9) function(2) part11(11) managedObjectClass(3)
moa-att	joint-iso-itu-t ms(9) function(2) part11(11) attribute(7)
moa-pkg	joint-iso-itu-t ms(9) function(2) part11(11) package(4)
m3100-pkg	itu-t recommendation(0) m(13) gnm(3100) m3100InformationModel(0) package(4)

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

L.4 Mean monitor managed object class

L.4.1 Statement of conformance to the managed object class

Table L.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	MeanMonitor	{moa-mo 4}		

8) **Copyright release for MOCS proforma**

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 L.1 is no, then the supplier of the implementation shall fill in the actual class support Table L.2 below.

Table L.2 – Actual class support

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

L.4.2 Packages

Table L.3 – Package support

Index	Package template label	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	scannerPackage	–	–	m		
5	availabilityStatusPackage	{dmi-pkg 22}	–	c3		
6	duration	{dmi-pkg 26}	–	o		
7	dailyScheduling	{dmi-pkg 25}	–	o		
8	weeklyScheduling	{dmi-pkg 29}	–	o		
9	externalScheduler	{dmi-pkg 27}	–	o		
10	periodSynchronizationPackage	{moa-pkg 10}	–	o		
11	createDeleteNotificationPackage	{m3100-pkg 10}	–	o		
12	attributeValueChangeNotificationPackage	{m3100 pkg 4}	–	o		
13	stateChangeNotificationPackage	{m3100-pkg 28}		o		
14	monitorMetricPackage	–	–	m		
15	counterDifferencePackage	{moa-pkg 2}	–	o		
16	counterOverflowPackage	{moa-pkg 3}	–	o		
17	gaugeDifferencePackage	{moa-pkg 8}	–	o		
18	derivedGaugeThresholdPackage	{moa-pkg 4}	–	o		
19	specificProblemsIndicationPackage	{moa-pkg 9}	–	o		
20	derivedGaugeTimestampPackage	{moa-pkg 5}	–	o		
21	meanMonitorPackage	–		m		
22	estimateOfMeanThresholdPackage	{moa-pkg 6}	–	o		

c1: if L.3/3a or L.3/5a or L.3/6a or L.3/7a or L.3/8a or L.3/9a or L.3/10a or L.3/11a or L.3/12a or L.3/13a or L.3/15a or L.3/16a or L.3/17a or L.3/18a or L.3/19a or L.3/20a or L.3/22a then m else –.

c2: if L.1/1b then m else –.

c3: if L.3/6a or L.3/7a or L.3/8a or L.3/9a then m else –.

L.4.3 Attributes

Table L.4 – 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	objectClass	{dmi-att 65}	–	m		m		x	
2	nameBinding	{dmi-att 63}	–	o		m		c4	
3	packages	{dmi-att 66}	–	c5		c6		c7	
4	allomorphs	{dmi-att 50}	–	c8		c9		c4	
5	scannerId	{moa-att 25}	–	o		m		c4	
6	granularityPeriod	{moa-att 23}	–	m		m		m	
7	administrativeState	{dmi-att 31}	–	m		m		m	
8	operationalState	{dmi-att 35}	–	x		m		x	
9	availabilityStatus	{dmi-att 33}	off-duty required	c10		c11		c10	
10	periodSynchronizationTime	{moa-att 24}	–	c12		c12		c12	
11	startTime	{dmi-att 68}	–	c13		c13		c13	
12	stopTime	{dmi-att 69}	DMI default	c13		c13		c13	
13	intervalsOfDay	{dmi-att 57}	DMI default	c14		c14		c14	
14	weekMask	{dmi-att 71}	DMI default	c15		c15		c15	
15	schedulerName	{dmi-att 67}	–	c16		c17		c18	
16	observedObjectInstance	{moa-att 16}	–	m		m		x	
17	observedAttributeId	{moa-att 15}	–	m		m		x	
18	derivedGauge	{moa-att 2}	–	x		m		x	
19	previousScanCounterValue	{moa-att 1}	–	c19		c19		c19	
20	proceduralStatus	{dmi-att 36}	–	c20		c21		c20	
21	modulusValue	{moa-att 1}	–	c22		c22		c22	
22	previousScanGaugeValue	{moa-att 20}	–	c23		c23		c23	
23	severityIndicatingGaugeThreshold	{moa-att 18}	–	c24		c24		c24	
24	specificProblemIndicator	{moa-att 19}	–	c25		c25		c25	
25	derivedGaugeTimestamp	{moa-att 3}	–	c26		c27		c26	
26	estimateOfMean	{moa-att 7}	–	m		m		m	
27	movingTimePeriod	{moa-att 13}	–	m		m		m	
28	estimateOfMeanSeverityIndicatingGaugeThreshold	{moa-att 6}	–	c28		c28		c28	

Table L.4 *(continued)*

	Add		Remove		Set to default		
Index	Status	Support	Status	Support	Status	Support	Additional information
1	–		–		x		
2	–		–		c4		
3	c7		c7		c7		
4	c4		c4		c4		
5	–		–		c4		
6	–		–		c4		
7	–		–		c4		
8	–		–		x		
9	c10		c10		c10		
10	–		–		c4		
11	–		–		c4		
12	–		–		c13		
13	c14		c14		c14		
14	c15		c15		c15		
15	–		–		c18		
16	–		–		x		
17	–		–		x		
18	–		–		x		
19	–		–		c4		
20	–		–		c20		
21	–		–		c4		
22	–		–		c4		
23	c24		c24		c4		
24	–		–		c4		
25	–		–		c26		
26	–		–		c4		
27	–		–		c4		
28	c28		c28		c4		

c4: if L.1/1b then x else –.
c5: if L.3/2a then o else –.
c6: if L.3/2a then m else –.
c7: if L.3/2a then x else –.
c8: if L.3/3a then o else –.
c9: if L.3/5a then m else –.
c10: if L.3/5a then x else –.
c11: if L.3/5a then m else –.

Table L.4 *(concluded)*

c12: if L.3/10a then m else –.
c13: if L.3/6a then m else –.
c14: if L.3/7a then m else –.
c15: if L.3/8a then m else –.
c16: if L.3/9a then o else –.
c17: if L.3/9a then m else –.
c18: if L.3/9a then x else –.
c19: if L.3/15a then m else –.
c20: if L.3/15a or L.3/17a then x else –.
c21: if L.3/15a or L.3/17a then m else –.
c22: if L.3/16a then m else –.
c23: if L.3/17a then m else –.
c24: if L.3/18a then m else –.
c25: if L.3/19a then m else –.
c26: if L.3/20a then x else –.
c27: if L.3/20a then m else –.
c28: if L.3/22a then m else –.

L.4.4 Notifications

Table L.5 – Notification support

					Support		
Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Con-firmed	Non-con-firmed	Additional information
1	objectCreation	{dmi-not 6}	–	c29			
2	objectDeletion	{dmi-not 7}	–	c29			
3	attributeValueChange	{dmi-not 1}	–	c30			
4	stateChange	{dmi-not 14}	–	c31			
5	qualityofServiceAlarm	{dmi-not 11}	–	c32			

c29: if L.3/11a then m else –.
c30: if L.3/12a then m else –.
c31: if L.3/13a then m else –.
c32: if L.3/18a or L.3/22a then m else –.

The detailed requirements for each of the above notifications for this managed object class are as specified in Table G.5. For this reason the table is not repeated here. The supplier of the implementation needs to complete a copy of Table G.5 for this managed object class if the support is different.

Annex M[9)]
MOCS proforma

For "Monitor metric" managed object class

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

M.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.

M.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 the tables below and if necessary, provide additional information.

M.3 Symbols, abbreviations and terms

The MOCS proforma contained in this annex is comprised of information in tabular form, in accordance with CCITT Rec. X.291 | ISO/IEC 9646-2.

The following abbreviations are used throughout this proforma:

dmi-att	joint-iso-itu-t ms(9) smi(3) part2(2) attribute(7)
dmi-not	joint-iso-itu-t ms(9) smi(3) part2(2) notification(10)
dmi-pkg	joint-iso-itu-t ms(9) smi(3) part2(2) package(4)
moa-mo	joint-iso-itu-t ms(9) function(2) part11(11) managedObjectClass(3)
moa-att	joint-iso-itu-t ms(9) function(2) part11(11) attribute(7)
moa-pkg	joint-iso-itu-t ms(9) function(2) part11(11) package(4)
m3100-pkg	itu-t recommendation(0) m(13) gnm(3100) m3100InformationModel(0) package(4)

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

M.4 Monitor metric managed object class

M.4.1 Statement of conformance to the managed object class

Table M.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	monitorMetric	{moa-mo 5}		

9) **Copyright release for MOCS proforma**

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 M.1 is no, then the supplier of the implementation shall fill in the actual class support Table M.2 below.

Table M.2 – Actual class support

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

M.4.2 Packages

Table M.3 – Package support

Index	Package template label	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	scannerPackage	–	–	m		
5	availabilityStatusPackage	{dmi-pkg 22}	–	c3		
6	duration	{dmi-pkg 26}	–	o		
7	dailyScheduling	{dmi-pkg 25}	–	o		
8	weeklyScheduling	{dmi-pkg 29}	–	o		
9	externalScheduler	{dmi-pkg 27}	–	o		
10	periodSynchronizationPackage	{moa-pkg 10}	–	o		
11	createDeleteNotificationPackage	{m3100-pkg 10}	–	o		
12	attributeValueChangeNotificationPackage	{m3100 pkg 4}	–	o		
13	stateChangeNotificationPackage	{m3100-pkg 28}	–	o		
14	monitorMetricPackage	–	–	m		
15	counterDifferencePackage	{moa-pkg 2}	–	o		
16	counterOverflowPackage	{moa-pkg 3}	–	o		
17	gaugeDifferencePackage	{moa-pkg 8}	–	o		
18	derivedGaugeThresholdPackage	{moa-pkg 4}	–	o		
19	specificProblemsIndicationPackage	{moa-pkg 9}	–	o		
20	derivedGaugeTimestampPackage	{moa-pkg 5}	–	o		

c1: if M.3/3a or M.3/5a or M.3/6a or M.3/7a or M.3/8a or M.3/9a or M.3/10a or M.3/11a or M.3/12a or M.3/13a or M.3/15a or M.3/16a or M.3/17a or M.3/18a or M.3/19a or M.3/20a or M.3/22a then m else –.

c2: if M.1/1b then m else –.

c3: if M.3/6a or M.3/7a or M.3/8a or M.3/9a then m else –.

M.4.3 Attributes

Table M.4 – 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	objectClass	{dmi-att 65}	–	m		m		x	
2	nameBinding	{dmi-att 63}	–	o		m		c4	
3	packages	{dmi-att 66}	–	c5		c6		c7	
4	allomorphs	{dmi-att 50}	–	c8		c9		c4	
5	scannerId	{moa-att 25}	–	o		m		c4	
6	granularityPeriod	{moa-att 23}	–	m		m		m	
7	administrativeState	{dmi-att 31}	–	m		m		m	
8	operationalState	{dmi-att 35}	–	x		m		x	
9	availabilityStatus	{dmi-att 33}	off-duty required	c10		c11		c10	
10	periodSynchronizationTime	{moa-att 24}	–	c12		c12		c12	
11	startTime	{dmi-att 68}	–	c13		c13		c13	
12	stopTime	{dmi-att 69}	DMI default	c13		c13		c13	
13	intervalsOfDay	{dmi-att 57}	DMI default	c14		c14		c14	
14	weekMask	{dmi-att 71}	DMI default	c15		c15		c15	
15	schedulerName	{dmi-att 67}	–	c16		c17		c18	
16	observedObjectInstance	{moa-att 16}	–	m		m		x	
17	observedAttributeId	{moa-att 15}	–	m		m		x	
18	derivedGauge	{moa-att 2}	–	x		m		x	
19	previousScanCounterValue	{moa-att 1}	–	c19		c19		c19	
20	proceduralStatus	{dmi-att 36}	–	c20		c21		c20	
21	modulusValue	{moa-att 1}	–	c22		c22		c22	
22	previousScanGaugeValue	{moa-att 20}	–	c23		c23		c23	
23	severityIndicatingGaugeThreshold	{moa-att 18}	–	c24		c24		c24	
24	specificProblemIndicator	{moa-att 19}	–	c25		c25		c25	
25	derivedGaugeTimestamp	{moa-att 3}	–	c26		c27		c26	

Table M.4 *(continued)*

	Add		Remove		Set to default		
Index	Status	Support	Status	Support	Status	Support	Additional information
1	–		–		x		
2	–		–		c4		
3	c7		c7		c7		
4	c4		c4		c4		
5	–		–		c4		
6	–		–		c4		
7	–		–		c4		
8	–		–		x		
9	c10		c10		c10		
10	–		–		c4		
11	–		–		c4		
12	–		–		c13		
13	c14		c14		c14		
14	c15		c15		c15		
15	–		–		c18		
16	–		–		x		
17	–		–		x		
18	–		–		x		
19	–		–		c4		
20	–		–		c20		
21	–		–		c4		
22	–		–		c4		
23	c24		c24		c4		
24	–		–		c4		
25	–		–		c26		

c4: if M.1/1b then x else –.
c5: if M.3/2a then o else –.
c6: if M.3/2a then m else –.
c7: if M.3/2a then x else –.
c8: if M.3/3a then o else –.
c9: if M.3/5a then m else –.
c10: if M.3/5a then x else –.
c11: if M.3/5a then m else –.
c12: if M.3/10a then m else –.
c13: if M.3/6a then m else –.
c14: if M.3/7a then m else –.

Table M.4 *(concluded)*

c15: if M.3/8a then m else –.
c16: if M.3/9a then o else –.
c17: if M.3/9a then m else –.
c18: if M.3/9a then x else –.
c19: if M.3/15a then m else –.
c20: if M.3/15a or M.3/17a then x else –.
c21: if M.3/15a or M.3/17a then m else –.
c22: if M.3/16a then m else –.
c23: if M.3/17a then m else –.
c24: if M.3/18a then m else –.
c25: if M.3/19a then m else –.
c26: if M.3/20a then x else –.
c27: if M.3/20a then m else –.

M.4.4 Notifications

Table M.5 – Notification support

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Additional information
					Con-firmed	Non-con-firmed	
1	objectCreation	{dmi-not 6}	–	c28			
2	objectDeletion	{dmi-not 7}	–	c28			
3	attributeValueChange	{dmi-not 1}	–	c29			
4	stateChange	{dmi-not 14}	–	c30			
5	qualityofServiceAlarm	{dmi-not 11}	–	c31			

c28: if M.3/11a then m else –.
c29: if M.3/12a then m else –.
c30: if M.3/13a then m else –.
c31: if M.3/18a then m else –.

The detailed requirements for each of the above notifications for this managed object class are as specified in Table G.5. For this reason the table is not repeated here. The supplier of the implementation needs to complete a copy of Table G.5 for this managed object class if the support is different.

Annex N[10)]

MRCS proforma for name binding

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

N.1 Introduction

The purpose of this MRCS proforma for name bindings is to provide a mechanism for a supplier which claims conformance to a name binding to provide conformance information in a standard form.

The following abbreviation is used in this proforma:

moa-nb joint-iso-itu-t ms(9) function(2) part11(11) nameBinding(6)

N.2 Instructions for completing the MRCS proforma for name binding to produce a MRCS

The supplier of the implementation shall state which items are supported in the tables below and if necessary provide additional information.

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

N.3 Statement of conformance to the name binding

Table N.1 – Name binding support

Index	Name binding template label	Value of object identifier for name binding	Constraints and values	Status	Support	Additional information
1	scanner–system	{moa-nb 0}	–	o		

Table N.1 *(concluded)*

Index	Subindex	Operation	Constraints and values	Status	Support	Additional information
1	1.1	Create support	–	c:m		
	1.1.1	Create with reference object	–	c:m		
	1.1.2	Create with automatic instance naming	–	c:m		
	1.2	Delete support	–	c:m		
	1.2.1	Delete only if no contained objects	–	c:m		
	1.2.2	Delete contained objects	–	c:x		

NOTE – The conflictingPackageScanner-system name binding in ITU-T Rec. X.738 | ISO/IEC 10164-13 is equivalent to the scanner-system name binding, and, in addition, provides for indicating errors.

10) **Copyright release for MRCS proforma**

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

ITU-T RECOMMENDATIONS SERIES

Series A	Organization of the work of the ITU-T
Series B	Means of expression: definitions, symbols, classification
Series C	General telecommunication statistics
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	**Data networks and open system communication**
Series Z	Programming languages