INTERNATIONAL TELECOMMUNICATION UNION

ITU-T X.467

(10/96)

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

SERIES X: DATA NETWORKS AND OPEN SYSTEM COMMUNICATION

Message Handling Systems

Information technology – Message Handling Systems (MHS) management: Message transfer agent management

ITU-T Recommendation X.467

(Previously "CCITT Recommendation")

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FOREWORD

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

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

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC. The text of ITU-T Recommendation X.467 was approved on 5th of October 1996. The identical text is also published as ISO/IEC International Standard 11588-8.

NOTE

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

CONTENTS

Summary

This Recommendation | International Standard provides the specification of management information related to a Message Transfer Agent (MTA). The modelling of this information is done in accordance with CCITT Rec. X.722 | ISO/IEC 10165-4.

INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

INFORMATION TECHNOLOGY – MESSAGE HANDLING SYSTEMS (MHS) MANAGEMENT: MESSAGE TRANSFER AGENT MANAGEMENT

SECTION 1 – INTRODUCTION

1 Scope

This Recommendation | International Standard provides the specification of management information related to a Message Transfer Agent (MTA). The modelling of this information is done in accordance with CCITT Rec. X.722 | ISO/IEC 10165-4: the Guidelines for the Definition of Managed Objects.

2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of ITU maintains a list of currently valid ITU-T Recommendations.

2.1 Identical Recommendations International Standards

- ITU-T Recommendation X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model*.
- ITU-T Recommendation X.217 (1995) | ISO/IEC 8649:1996, *Information technology – Open Systems Interconnection – Service definition for the association control service element*.
- ITU-T Recommendation X.402 (1995) | ISO/IEC 10021-2:1996, *Information technology – Message Handling Systems (MHS): Overall architecture*.
- ITU-T Recommendation X.411 (1995) | ISO/IEC 10021-4:1997, *Information technology – Message Handling Systems (MHS): Message transfer system : Abstract service definition and procedures*.
- ITU-T Recommendation X.460 (1995) | ISO/IEC 11588-1:1995, *Information technology – Message Handling Systems (MHS) management: Model and architecture*.
- ITU-T Recommendation X.462 (1996) | ISO/IEC 11588-3:1997, *Information technology – Message Handling Systems (MHS) management: Logging information*.
- ITU-T Recommendation X.501 (1993) | ISO/IEC 9594-2:1995, *Information technology – Open Systems Interconnection – The Directory: Models*.
- ITU-T Recommendation X.509 (1993) | ISO/IEC 9594-8:1995, *Information technology – Open Systems Interconnection – The Directory: Authentification framework*.
- CCITT Recommendation X.701 (1993) | ISO/IEC 10040:1992, *Information technology – Open Systems Interconnection – System management overview*.
- CCITT Recommendation X.720 (1992) | ISO/IEC 10165-1:1993, *Information technology – Open Systems Interconnection – Structure of management information: Management Information Model*.
- CCITT Recommendation X.721 (1992) | ISO/IEC 10165-2:1992, *Information technology – Open Systems Interconnection – Structure of management information: Definition of management information*.
- CCITT Recommendation X.722 (1992) | ISO/IEC 10165-4:1992, *Information technology – Open Systems Interconnection – Structure of management information: Guidelines for the definition of managed objects*.

- CCITT Recommendation X.731 (1992) | ISO/IEC 10164-2:1992, *Information technology – Open Systems Interconnection – Systems management: State management function*.
- CCITT Recommendation X.733 (1992) | ISO/IEC 10164-4:1992, *Information technology – Open Systems Interconnection – Systems management: Alarm reporting function*.
- CCITT Recommendation X.736 (1992) | ISO/IEC 10164-7:1992, *Information technology – Open Systems Interconnection – Systems Management: Security alarm reporting function*.

2.2 Paired Recommendations | International Standards equivalent in technical content

- ITU-T Recommendation F. 400/X.400 (1996), *Message handling: System and service overview*.

  ISO/IEC 10021-1[1)], *Information technology – Message Handling Systems (MHS) – Part 1: System and Service Overview*.
- CCITT Recommendation X.700 (1992), *Management framework for Open Systems Interconnection (OSI) for CCITT applications*.

  ISO/IEC 7498-4:1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model – Part 4: Management framework*.
- CCITT Recommendation X.710 (1991), *Common management information service definition for CCITT applications*.

  ISO/IEC 9595:1991, *Information technology – Open Systems Interconnection – Common management information service definition*.

2.3 Additional references

- CCITT Recommendation X.408 (1988), *Message handling systems: Encoded information type conversion rules*.
- ITU-T Recommendation M. 3010 (1996), *Principles for a telecommunications management network*.
- ITU-T Recommendation Q.822 (1994), *Stage 1, Stage 2 and Stage 3 description for the Q3 interface – Performance management*.

3 Definitions

For the purposes of this Recommendation | International Standard, the following definitions apply.

3.1 Basic Reference Model definitions

This Recommendation | International Standard makes use of the following term defined in ITU-T Rec. X.200 | ISO/IEC 7498-1:

- application service element.

3.2 ACSE definitions

This Recommendation | International Standard makes use of the following terms defined in ITU-T Rec. X.217 | ISO/IEC 8649:

a) association;

b) application context;

c) association initiator;

d) association responder.

3.3 Telecommunication management network definitions

This Recommendation | International Standard makes use of the following term defined in Recommendation M. 3010:

- network element.

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1) To be published. (Revision of ISO/IEC 10021-1:1990)

3.4 OSI system management definitions

This Recommendation | International Standard makes use of the following terms defined in CCITT Rec. X.700 and ISO/IEC 7498-4:

a) managed object;

b) managed information base.

This Recommendation | International Standard makes use of the following terms defined in CCITT Rec. X.701 | ISO/IEC 10040:

a) managed object class;

b) management information.

This Recommendation | International Standard makes use of the following terms defined in CCITT Rec. X.710 and ISO/IEC 9595:

a) attribute;

b) common management information service element.

This Recommendation | International Standard makes use of the following terms defined in CCITT Rec. X.720 | ISO/IEC 10165-1:

a) behaviour;

b) conditional package;

c) inheritance;

d) naming tree;

e) package;

f) subclass;

g) super class.

3.5 Message handling systems management definitions

This Recommendation | International Standard makes use of the following terms defined in ITU-T Rec. X.460 | ISO/IEC 11588-1:

a) MHS management domain;

b) MHS system;

c) MIS management domain.

3.6 Message Handling Systems definitions

This Recommendation | International Standard makes use of the following term defined in ITU-T Rec. X.400 and ISO/IEC 10021-1:

– alternate recipient assignment.

This Recommendation | International Standard makes use of the following terms defined in ITU-T Rec. X.411 | ISO/IEC 10021-4 (MTS abstract service definition):

a) content;

b) content-integrity-check;

c) content-type;

d) controls;

e) credentials;

f) deferred-delivery-time;

g) delivery-controls;

h) encoded-information-type;

i) explicit-conversion;

j) global-domain-identifier;

k) initiator-bind-token;

l) initiator-certificate;
m) message-origin-authentication-check;
n) message-security-label;
o) message-token;
p) MTA-name;
q) MTS-Identifier;
r) OR-name;
s) originator-certificate;
t) password;
u) priority;
v) probe-origin-authentication-check;
w) PSAP-address;
x) recipient-certificate;
y) report-origin-authentication-check;
z) security-context;
aa) simple-credentials;
bb) strong credentials;
cc) submission-controls;
dd) permissible-operations;
ee) permissible-lowest-priority;
ff) permissible-encoded-information-types;
gg) permissible-content-types;
hh) permissible-maximum-content-length.

This Recommendation | International Standard makes use of the following terms defined in ITU-T Rec. X.411 | ISO/IEC 10021-4 (MTA abstract service definition):

a) trace-information-elements;
b) internal-trace-information-elements.

4 Abbreviations

For the purposes of this Recommendation | International Standard, the following abbreviations apply:

AU	Access Unit
ASE	Application Service Entity
BM	Business Management
CMISE	Common Management Information Service Element
DIB	Directory Information Base
DL	Distribution List
EIT	Encoded Information Type
GDMO	Guidelines for the Definition of Managed Objects
MD	MHS Management Domain
MHS	Message Handling System
MIB	Management Information Base
MIM	Management Information Model
MPR	Message Probe or Report
MS	Message Store
MTA	Message Transfer Agent

MTS	Message Transfer Service
NEM	Network Element Management
NM	Network Management
OSI	Open System Interconnection
SM	Service Management
SMASE	System Management Application Service Entity
TMN	Telecommunications Management Network
UA	User Agent

5 Conventions

This Recommendation | International Standard makes use of the following conventions:

a) the term MTS User is used to denote an AU, MS or UA;

b) the term MTS User name is used to denote a Directory name and an MTS User address or both.

SECTION 2 – MTA MANAGEMENT PRINCIPLES

6 Requirements

An MHS system manager may express requirements on MTA management. An MHS system manager is a corporation, organisation or individual which is responsible for the management of the resources of an MHS system.

Table 1 provides a summary of MTA management requirements.

Table 1 – Users requirements

Requirements	Detailed requirements
Management of MTA overall operability and availability	
Management of MTA functions	– Management of MTA Conversion function – Management of MTA Distribution List Expansion function – Management of MTA Routing function – Management of MTA Security function
Management of associations	– Management of MTS User associations – Management of Adjacent MTA associations
Management of MPR	– Management of messages – Management of probes – Management of reports
Management of MTS Users capabilities assessments	
Management of Adjacent MTA capabilities assessments	

6.1 Management of MTA overall operability and availability

The requirement to be satisfied is to provide the MHS system manager the ability to control and monitor the overall operability and availability of each managed MTA within the MIS management domain.

If Directory services are used by MHS entities of the MIS management domain to get access to MTA capabilities, then consistency between the Directory and MHS management information bases is required.

6.2 Management of MTA functions

6.2.1 Management of MTA Conversion function

The requirement to be satisfied is to provide the MHS system manager, for each managed MTA which can perform content conversion within the MIS management domain, the ability:

a) To control and monitor:

   1) the conversions on messages;

   2) the indications of those conversions that would have been performed on probes.

b) To examine and modify information on the supported conversions.

6.2.2 Management of MTA Distribution List Expansion function

The requirement to be satisfied is to provide the MHS system manager, for each managed MTA which can perform distribution list expansion within the MIS management domain, the ability to control and monitor:

a) the distribution lists expansions on messages;

b) the verifications whether distribution list expansion would occur, if requested, on probes.

6.2.3 Management of MTA Routing function

The requirement to be satisfied is to provide the MHS system manager, for each managed MTA within the MIS management domain, the ability:

a) to control and monitor the routing and rerouting of MPR;

b) to examine and modify routing information.

This Specification describes how to monitor the operational state and usage state of the Routing Function of an MTA. The current version of this Specification does not describe the information to be maintained by MTA to provide routing and loop detection capabilities nor the model to examine and modify such information.

6.3 Management of associations

The requirement to be satisfied is to provide the MHS system manager the ability to control and monitor the associations established with each managed MTA within the MIS management domain.

6.4 Management of MPR

The requirement to be satisfied is to provide the MHS system manager the ability to control and monitor the MPR being processed by each managed MTA within the MIS management domain.

6.5 Management of MTS Users capabilities assessments

The requirement to be satisfied is to provide the MHS system manager the ability to examine and update information on capabilities assessments of the MTS Users of each managed MTA within the MIS management domain.

If Directory services are used by MHS entities of the MIS management domain to get access to MTS User capabilities, then consistency between Directory and MHS management information bases is required.

6.6 Management of Adjacent MTA capabilities assessments

The requirement to be satisfied is to provide the MHS system manager the ability to examine and update information on capabilities assessments of the Adjacent MTA of each managed MTA within the MIS management domain.

If Directory services are used by MHS entities of the MIS management domain to get access to MTA capabilities, the MHS system manager shall be able to maintain consistency between Directory and MHS management information bases.

7 Service definitions

7.1 Introduction

The MTA management services are provided to a MHS system manager so that he can:

a) control and monitor the behaviour of a managed MTA;

b) examine and modify MTA parameters.

Table 2 provides the list of the MTA management services that meet the MTA management requirements defined in clause 6.

The services are classified in three groups:

– MHS capabilities management (MHS);

– MHS security capabilities management (SEC);

– Performance management (PERF).

Table 2 – MTA management services overview

Requirements	Services	Service group
MTA overall availability and operability	MTA main capabilities management	MHS
management	MTA main capabilities performance	PERF
Conversion management	Conversion functions management	MHS
	Conversion performance management	PERF
(and security management)	Secure conversions management	SEC
Distribution list expansion management	Distribution list expansion function management	MHS
	Distribution list expansion performance	PERF
Routing management	Routing function management	MHS
	Routing performance	PERF
Security management	Message origin authentication function management	SEC
	Probe origin authentication function management	SEC
	Report origin authentication function management	SEC
Logging of a managed MTA	MHS events logging	MHS
Management of associations	MTS Users associations management	MHS
	Adjacent MTA associations management	MHS
(and security management)	Secure MTS Users associations management	SEC
	Secure Adjacent MTA associations management	SEC
Management of MPR	MPR management	MHS
(and security management)	Secure messages management	SEC
	Secure probes management	SEC
	Secure reports management	SEC
Management of MTS Users capabilities assessments	MTS Users capabilities assessments management	MHS
(and security management)	MTS Users security assessments management	SEC
Management of Adjacent MTA capabilities assessments	Adjacent MTA capabilities assessments management	MHS
(and security management)	Adjacent MTA security assessments management	SEC

7.2 MTA main capabilities management

7.2.1 Description

The MTA main capabilities management service provides primitives:

a) to create and delete a management view of the main capabilities of a managed MTA;

b) to retrieve and modify main capabilities parameters of a managed MTA;

c) to suspend or resume a managed MTA activity;

d) to receive operability change notifications from a managed MTA;

e) to receive equipment alarms from a managed MTA;

7.2.2 Main parameters

7.2.2.1 Alarm Status

This attribute indicates the occurrence of an abnormal condition relating to the managed MTA. It is used to indicate the existence of an equipment alarm on the managed MTA. This attribute is described in details in Recommendation M.3100.

NOTE – This attribute is inherited from the equipmentEquipmentsAlarm package defined in Recommendation M.3100.

7.2.2.2 Default Non Urgent MPR Expiry Duration

This attribute defines the default duration in seconds from the arrival time of a non-urgent MPR after which the managed MTA determines that the MTS cannot deliver the message or report or affirm the probe.

7.2.2.3 Default Normal MPR Expiry Duration

This attribute defines the default duration in seconds from the arrival time of a normal MPR after which the managed MTA determines that the MTS cannot deliver the message or report or affirm the probe.

7.2.2.4 Default Urgent MPR Expiry Duration

This attribute defines the default duration in seconds from the arrival time of an urgent MPR after which the managed MTA determines that the MTS cannot deliver the message or report or affirm the probe.

7.2.2.5 Equipment Identifier

This attribute is used to name the MTA managed object instance. This attribute is described in details in Recommendation M.3100.

NOTE – This attribute is inherited from the equipment object class defined in Recommendation M.3100.

7.2.2.6 Global Domain Identifier

This attribute provides the identification of the management domain used by the managed MTA to create MTS-identifiers, trace-information-elements and internal-trace-information-elements. This attribute may have one of the possible values of a **global-domain-identifier** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'Generic Global Domain Identifier' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.2.2.7 Maximum Adjacent MTA Inbound Associations

This attribute defines the maximum number of associations that may be simultaneously established, at the initiative of adjacent MTA, between the managed MTA and its adjacent MTA.

7.2.2.8 Maximum Adjacent MTA Outbound Associations

This attribute defines the maximum number of associations that may be simultaneously established, at the initiative of the managed MTA, between the managed MTA and its adjacent MTA.

7.2.2.9 Maximum MTS User Inbound Associations

This attribute defines the maximum number of associations that may be simultaneously established, at the initiative of MTS Users, between the managed MTA and its MTS Users.

7.2.2.10 Maximum MTS User Outbound Associations

This attribute defines the maximum number of associations that may be simultaneously established, at the initiative of MTS Users, between the managed MTA and its MTS Users.

7.2.2.11 MTA Name

This attribute specifies the name of the managed MTA. This attribute may have one of the possible values of an **MTA-name** MTS abstract service parameter defined in Recommendation X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MTA name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.2.2.12 Replaceable

This attribute indicates if the managed MTA is replaceable or non-replaceable. This attribute is described in details in Recommendation M.3100.

NOTE – This attribute is inherited from the equipment object class defined in Recommendation M.3100.

7.2.2.13 Supported Application Contexts

This attribute defines the MHS application contexts that are supported by the managed MTA.

7.2.3 State parameters

7.2.3.1 Administrative State

The Administrative State enables the MHS system manager to suspend or resume the managed MTA activity. The Administrative state parameter has three possible values: locked, shutting down and unlocked. These are described in CCITT Rec. X.731 | ISO/IEC 10164-2.

NOTE – This attribute is inherited from the equipment object class defined in Recommendation M.3100.

7.2.3.2 Operational State

The Operational State parameter describes the operability of the managed MTA. The Operational State attribute has two possible values: disabled and enabled. These are described in CCITT Rec. X.731 | ISO/IEC 10164-2.

NOTE – This attribute is inherited from the equipment object class defined in Recommendation M.3100.

7.2.4 MD alternate recipient assignment parameters

7.2.4.1 MD Assigned Alternate Recipient

If the MD alternate recipient assignment service is supported by the managed MTA, this attribute indicates the MTS User Name of an alternate recipient which may be assigned by the managed MTA acting as recipient to messages where there is not exact match between the recipient attributes and the name of an MTS User of the MD. This attribute may have one of the possible values of an **OR-name** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MTS User name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

NOTE – The operation of the MD alternate recipient assignment is part of the Routing function. In some cases, the routing information will supply values for the alternate recipient address which override this attribute.

7.2.5 Directory Access parameters

If Directory is used for MHS and an **mhs-message-transfer-agent** directory object instance is present for the managed element, the directory access parameters enable to maintain consistency between the MIB and the DIB. The mhs-message-transfer-agent directory object class is described in Annex A of ITU-T Rec. X.402 | ISO/IEC 10021-2.

7.2.5.1 Directory Name

If Directory is used for MHS and a directory object instance is present for the managed element, this attribute specifies the **directory name** of the directory object instance. This attribute may have one of the possible values of a directory name parameter defined in ITU-T Rec. X.501 | ISO/IEC 9594-2. For a non-standardised implementation of a Directory, a 'generic directory name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

NOTE – The description of the use of the Directory Name parameter to maintain consistency between the MIB and the DIB is out of the scope of this Recommendation | International Standard

7.2.6 Optional parameters

7.2.6.1 Vendor Name

If vendor information is supported by the managed MTA, this attribute indicates the vendor name of the managed MTA.

NOTE – This attribute is inherited from the equipment object class defined in Recommendation M.3100.

7.2.6.2 Version

If version information is supported by the managed MTA, this attribute indicates the version of the managed MTA.

NOTE – This attribute is inherited from the equipment object class defined in Recommendation M.3100.

7.2.6.3 Location Name

If location information is supported by the managed MTA, this attribute indicates the location of the managed MTA.

NOTE – This attribute is inherited from the equipment object class defined in Recommendation M.3100.

7.2.6.4 Current Problem List

If current problem list information is supported by the managed MTA, this attribute indicates the current existing problems of the managed MTA.

NOTE – This attribute is inherited from the equipment object class defined in Recommendation M.3100.

7.2.7 Service primitives

Table 3 provides the list of the MTA main capabilities management service primitives.

Table 3 – MTA main capabilities management service primitives

Primitives	Service SMASE	CMISE	Objects
Creation of a managed MTA	PT-Create	M-Create	MTA, MPRList, routingFunction
Deletion of a managed MTA	PT-Delete	M-Delete	MTA
Retrieval of MTA parameters	PT-Get	M-Get	MTA
Modification of MTA parameters	PT-Set	M-Set	MTA
Suspension of MTA activity	State Management function	M-Set	MTA
Resumption of MTA activity	State Management function	M-Set	MTA
State change notification	State Management function	M-EventReport	MTA
Equipment alarm notification	Alarm reporting Management Function	M-EventReport	MTA

7.3 MTA main capabilities performance

7.3.1 Description

The performance management services enable the MHS system manager to collect and store at intervals performance measurement data related to each monitored capability of the managed MTA. These services provide primitives:

a) to control the collection of performance indicators;

b) to have historical data stored for a prescript duration;

c) to assign thresholds values to performance indicators and to be notified of threshold violations;

d) to receive reports on collected performance information;

e) to receive quality alarm notifications due to threshold violations;

NOTE – Performance management general mechanism is defined in Recommendation Q.822.

Performance can be measured for the processing of a selection of MPR. The selection can be done according to the following selection criteria:

- type of MPR (messages, probes or reports);
- grade of delivery (urgent, normal or non-urgent);
- next adjacent MTA name;
- last adjacent MTA name.

7.3.2 Parameters

For the purpose of MTA main capabilities performance, the following performance indicators are monitored.

NOTE – Because of inheritance some performance control parameters are defined in Recommendation Q.822.

7.3.2.1 Maximum Mta Response Time

This attribute defines the maximum response time, during the measurement interval, of those MPR that meet the selection criteria. response time is the time between arrival and departure of a MPR in the managed MTA.

7.3.2.2 Maximum Mpr Size Delivered

This attribute defines the size of the largest MPR delivered to users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria.

7.3.2.3 Maximum Mpr Size Submitted

This attribute defines the size of the largest MPR submitted by users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.

7.3.2.4 Maximum Mpr Size Transferred In

This attribute defines the size of the largest MPR the managed MTA has received from another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.

7.3.2.5 Maximum Mpr Size Transferred Out

This attribute defines the size of the largest MPR the managed MTA has sent to another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.

7.3.2.6 Mean Mta Response Time

This attribute defines the mean response time, during the measurement interval, of those MPR that meet the selection criteria. Response time is the time between arrival and departure of a MPR in the managed MTA.

7.3.2.7 Mean Number of Stored Mpr

This attribute defines the mean number of MPR stored in the managed MTA, during the measurement interval, of those MPR that meet the selection criteria.

7.3.2.8 Mean Mpr Size Delivered

This attribute defines the mean size of MPR delivered to users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria.

7.3.2.9 Mean Mpr Size Submitted

This attribute defines the mean size of MPR submitted by users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.

7.3.2.10 Mean Mpr Size Transferred In

This attribute defines the mean size of MPR the managed MTA has received from another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.

7.3.2.11 Mean Mpr Size Transferred Out

This attribute defines the mean size of MPR the managed MTA has sent to another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.

7.3.2.12 Minimum Mta Response Time

This attribute defines the minimum response time, during the measurement interval, of those MPR that meet the selection criteria. Response time is the time between arrival and departure of a MPR in the managed MTA.

7.3.2.13 Minimum Mpr Size Delivered

This attribute defines the size of the smallest MPR delivered to users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria.

7.3.2.14 Minimum Mpr Size Submitted

This attribute defines the size of the smallest MPR submitted by users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.

7.3.2.15 Minimum Mpr Size Transferred In

This attribute defines the size of the smallest MPR the managed MTA has received from another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.

7.3.2.16 Minimum Mpr Size Transferred Out

This attribute defines the size of the smallest MPR the managed MTA has sent to another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.

7.3.2.17 Mean Storage Occupied

This attribute indicates the mean percentage, during the measurement interval, of the storage available which is occupied by the MPR that meet the selection criteria.

7.3.2.18 Number of Mpr Deferred

This attribute defines the number of MPR the managed MTA has deferred to another MTA, during the measurement interval, of those MPR that meet the selection criteria.

7.3.2.19 Number of Mpr Delivered

This attribute defines the number of MPR delivered, during the measurement interval, of those MPR that meet the selection criteria.

7.3.2.20 Number of Recipient Processed

This attribute defines the number of recipient processed, during the measurement interval, of those MPR that meet the selection criteria.

7.3.2.21 Number of Mpr Redirected

This attribute defines the number of MPR the managed MTA has redirected to another mts user, during the measurement interval, of those MPR that meet the selection criteria.

7.3.2.22 Number of Mpr Rejected

This attribute defines the number of MPR rejected, during the measurement interval, of those MPR that meet the selection criteria. An MPR is considered to be rejected when the managed MTA determines that the mts cannot deliver a message or a report or affirm a probe.

7.3.2.23 Number of Mpr Submitted

This attribute defines the number of MPR submitted, during the measurement interval, of those MPR that meet the selection criteria.

7.3.2.24 Number of Mpr Transferred In

This attribute defines the number of MPR the managed MTA has received from another MTA, during the measurement interval, of those MPR that meet the selection criteria.

7.3.2.25 Number of Mpr Transferred Out

This attribute defines the number of MPR the managed MTA has transferred to another MTA, during the measurement interval, of those MPR that meet the selection criteria.

7.3.3 Service primitives

An overview of MTA performance management service primitives is provided in Table 4.

The perfMTAcurrentdata, perfMTAhistorydata and thresholdata managed objets are defined for the purpose of MTA main capabilities performance management.

Table 4 – MTA performance management service primitives overview

Primitives	Service SMASE	CMISE	Objects
Creation of performance monitoring capability	PT-Create	M-Create	CurrentData, ThresholdData
Deletion of performance monitoring capability	PT-Delete	M-Delete	CurrentData, ThresholdData
Suspension of performance data collection	State Management function	M-Set	CurrentData
Resumption of performance data collection	State Management function	M-Set	CurrentData
Modification of performance data collection conditions	Q3 interface Performance Management	M-Set	CurrentData
Modification of MPR filter	P-Set	M-Set	CurrentData
Modification of performance data storage conditions	Q3 interface Performance Management	M-Set	CurrentData
Retrieval of performance data	Q3 interface Performance Management	M-Get	CurrentData
Modification of performance data reporting conditions	Q3 interface Performance Management	M-Set	CurrentData
Performance data reporting	Q3 interface Performance Management	M-EventReport	CurrentData
Modification of thresholds	Q3 interface Performance Management	M-Set	ThresholdData
Quality of Service alarm	Q3 interface Performance Management	M-EventReport	ThresholdData

7.4 Conversion function management

7.4.1 Description

Management of conversion is provided for each type of conversion supported by the managed MTA. For the purpose of MHS management, the MTA capability to provide a specific type of conversion (e.g. TTX to IA5Text) is called a Conversion function. A Conversion function is invoked each time the corresponding type of conversion is performed by the managed MTA.

NOTE – Different Conversions functions may be called for the processing of a single message or probe. A Conversion function may be called multiple times for the processing of a single message or probe.

This service provides primitives:

a) to create and delete a management view of a Conversion function;

b) to retrieve parameters of a Conversion function;

c) to suspend or resume a Conversion function activity;

d) to receive operability and usage change notifications from a Conversion function;

e) to receive processing errors alarms from a Conversion function.

7.4.2 Main parameters

7.4.2.1 Content Types Supported

This attribute indicates the message content types the Conversion function is able to convert. This attribute may have one of the possible values of a set of **content-type** MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.4.2.2 ConversionFunction Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.4.2.3 Conversion Type

This attribute indicates the type of conversion provided by the Conversion function. This attribute may have one of the possible values of an **explicit-conversion** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic conversion type' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.4.2.4 Information Loss Suspected

This attribute indicates if there will be loss of information during conversion. Possible loss of information is described in Recommendation X.408.

7.4.3 State parameters

7.4.3.1 Administrative State

The Administrative State enables the MHS system manager to suspend or resume the activity of the managed MTA function. The Administrative state parameter has three possible values: locked, shutting down and unlocked. These are described in CCITT Rec. X.731 | ISO/IEC 10164-2.

7.4.3.2 Operational State

The Operational State parameter describes the operability of the managed MTA function. The operational state attribute has two possible values: disabled and enabled. These are described in CCITT Rec. X.731 | ISO/IEC 10164-2.

7.4.3.3 Usage State

The Usage State parameter describes the usage of the managed MTA function. The usage state attribute has three possible values: idle, active and busy. These are described in CCITT Rec. X.731 | ISO/IEC 10164-2.

7.4.4 Service primitives

Table 5 provides the list of the Conversion function management service primitives.

7.5 Conversion performance

7.5.1 Description

This service provides primitives to monitor a Conversion function. Performance management principles are described in 7.3.1.

7.5.2 Parameters

7.5.2.1 Maximum Function Processing Time

This attribute defines the maximum duration in second used to perform an MTA function, during the measurement interval, of those MPR that meet the selection criteria.

Table 5 – Conversion function management service primitives

Primitives	Service SMASE	CMISE	Objects
Creation of a Conversion function	PT-Create	M-Create	ConversionFunction
Deletion of a Conversion function	PT-Delete	M-Delete	ConversionFunction
Suspension of a Conversion function activity	State Management function	M-Set	ConversionFunction
Resumption of a Conversion function activity	State Management function	M-Set	ConversionFunction
Retrieval of parameters of a Conversion function	PT-Get	M-Get	ConversionFunction
State change notification	State Management function	M-EventReport	ConversionFunction
Processing alarm notification	Alarm reporting Management Function	M-EventReport	ConversionFunction

7.5.2.2 Maximum Size MPR Passing Function

This attribute defines the size of the largest MPR passing the MTA function, during the measurement interval, of those MPR that meet the selection criteria.

7.5.2.3 Mean Function Processing Time

This attribute defines the mean time used to perform an MTA function, during the measurement interval, of those MPR that meet the selection criteria.

7.5.2.4 Mean Size MPR Passing Function

This attribute defines the mean size of MPR passing the MTA function, during the measurement interval, of those MPR that meet the selection criteria.

7.5.2.5 Minimum Function Processing Time

This attribute defines the minimum time used to perform an MTA function, during the measurement interval, of those MPR that meet the selection criteria.

7.5.2.6 Minimum Size MPR Passing Function

This attribute defines the size of the smallest MPR passing the MTA function, during the measurement interval, of those MPR that meet the selection criteria.

7.5.2.7 Number of Invocations

This attribute defines the number of times the MTA function has been invoked, during the measurement interval, for the processing of those MPR that meet the selection criteria.

NOTE – This is not the number of MPR passing the function as a function may be invoked different times for a single MPR.

7.5.2.8 Number of Rejected Invocations

This attribute defines the number of rejected invocations of the MTA function, during the measurement interval, for the processing of those MPR that meet the selection criteria.

7.5.3 Service primitives

Performance management primitives are described in 7.3.3.

perfFunctioncurrentdata, perfFunctionhistorydata and thresholdata managed objets are defined for the purpose of Conversion performance management.

7.6 Secure Conversion function management

7.6.1 Description

Management of secure conversion may be provided for each type of conversion supported by the managed MTA. For the purpose of MHS management, the MTA capability to provide a specific type of conversion (e.g. TTX to IA5Text) in a secure context is called a Secure Conversion function. A Secure Conversion function is invoked each time the corresponding type of secure conversion is performed by the managed MTA. The Secure Conversion function enables the MHS system manager to manage the additional information necessary to extend an MHS Conversion to MHS secure mechanisms.

NOTE – This service is required because the security MHS system manager may want to separate the security management information from the other management information.

This service provides primitives:.

a) to create and delete a management view of a Secure Conversion function;

b) to retrieve and modify parameters of a Secure Conversion function;

c) to suspend or resume a Secure Conversion function activity;

d) to receive operability and usage change notifications from a Secure Conversion function;

e) to receive processing errors alarms from a Secure Conversion function;

f) to receive security alarms from a a Secure Conversion function.

7.6.2 Main parameters

7.6.2.1 Conversion Credentials

This attribute provides the credentials for the conversion. This attribute may have one of the possible values of a **credentials** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.6.2.2 Conversion Security Context

This attribute provides the security context for a secure conversion.

7.6.2.3 Conversion Security Labels

This attribute provides the security labels for a secure conversion.

7.6.2.4 SecConversion Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.6.3 State parameters

These parameters are described in 7.4.3.

7.6.4 Service primitives

An overview of Secure Conversion function management services primitives is provided in Table 6.

7.7 Distribution List Expansion function management

7.7.1 Description

For the purpose of MHS management, the MTA capability to expand distribution lists is called the DL Expansion function. This function is invoked each time a distribution list is expanded by the managed MTA.

NOTE – The DL Expansion function may be called multiple times for a single message or probe.

Table 6 – Secure Conversion function management service primitives overview

Primitives	Service SMASE	CMISE	Objects
Creation of a Secure Conversion function	PT-Create	M-Create	secConversionFunction
Deletion of a Secure Conversion function	PT-Delete	M-Delete	secConversionFunction
Suspension of a Secure Conversion function activity	State Management function	M-Set	secConversionFunction
Resumption of a Secure Conversion function activity	State Management function	M-Set	secConversionFunction
Retrieval of a Secure Conversion parameter	PT-Get	M-Get	secConversionFunction
Modification of a Secure Conversion parameter	PT-Set	M-Set	secConversionFunction
State change notification	State Management function	M-EventReport	secConversionFunction
Processing alarm notification	Alarm reporting Management Function	M-EventReport	secConversionFunction
Security alarm notification	Security alarm reporting Management Function	M-EventReport	secConversionFunction

This service provides primitives:

a) To create and delete a management view of the DL Expansion function;

b) To suspend or resume the DL Expansion function activity;

c) To receive operability and usage change notifications from the DL Expansion function;

d) To receive processing errors alarms from the DL Expansion function.

7.7.2 Main parameters

7.7.2.1 DistributionListFunction Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.7.3 State parameters

These parameters are described in 7.4.3.

7.7.4 Service primitives

Table 7 provides the list of the D. L. Expansion function management service primitives.

7.8 DL Expansion performance

7.8.1 Description

This service provides primitives to the D. L. Expansion function. The performance management principles are described in 7.3.1.

7.8.2 Parameters

The MTA functions performance attributes are described in 7.5.2.

7.8.3 Service primitives

The performance management primitives are described in 7.3.3.

perfFunctioncurrentdata, perfFunctionhistorydata and thresholdata managed objets are defined for the purpose of the DL Expansion performance management.

Table 7 – D. L. Expansion function management service primitives

Primitives	Service SMASE	CMISE	Objects
Creation of D. L. Expansion function	PT-Create	M-Create	Distribution List Function
Deletion of a D. L. Expansion function	PT-Delete	M-Delete	Distribution List Function
Suspension of the D. L. Expansion function activity	State Management function	M-Set	Distribution List Function
Resumption of the D. L. Expansion activity	State Management function	M-Set	Distribution List Function
State change notification	State Management function	M-EventReport	Distribution List Function
Processing alarm notification	Alarm reporting Management Function	M-EventReport	Distribution List Function

7.9 Routing function management

7.9.1 Description

For the purpose of MHS management, the MTA capability to determine routing actions for each message or probe recipients for which the MTA is responsible is called the Routing function. This function is invoked each time a routing instruction for a single recipient of a MPR is generated by the managed MTA.

NOTE – The Routing function may be called multiple times for a single message or probe.

This service provides primitives:

a) to receive operability and usage change notifications from the Routing function;

b) to receive processing error alarms from the Routing function.

7.9.2 Main parameters

7.9.2.1 RoutingFunction Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.9.3 State parameters

These parameters are described in 7.4.3.

7.9.4 Service primitives

Table 8 provides the list of the Routing function management service primitives.

Table 8 – Routing function management service primitives

Primitives	Service SMASE	CMISE	Objects
State change notification	State Management function	M-EventReport	RoutingFunction
Processing alarm notification	Alarm reporting Management Function	M-EventReport	RoutingFunction

7.10 Routing performance

7.10.1 Description

This service provides primitives to monitor the Routing function. The performance management principles are described in 7.3.1.

7.10.2 Parameters

The MTA functions performance attributes are described in 7.5.2.

7.10.3 Service primitives

The performance management primitives are described in 7.3.3.

perfFunctioncurrentdata, perfFunctionhistorydata and thresholdata managed objets are defined for the purpose of the Routing Function performance management.

7.11 Messages origin authentication Check function management

7.11.1 Description

For the purpose of MHS management, the MTA capability to provide the corroboration of the source of a message when an origin authentication is required is called the Message Origin Authentication function.

This service provides primitives:

a) to create and delete a management view of the Messages origin authentication function;

b) to retrieve and modify parameters of the Messages origin authentication function;

c) to suspend or resume the Messages origin authentication function activity;

d) to receive operability and usage change notifications from the Messages origin authentication function;

e) to receive processing errors alarms from the Messages origin authentication function;

f) to receive security alarms from the Messages origin authentication function.

7.11.2 Parameters

7.11.2.1 Message Origin Authentication Check Algorithm

This attribute provides the algorithm for the origin authentication.

7.11.2.2 Message Originator Certificate

This attribute provides the certificate of the originator. This attribute may have one of the possible values of an **originator-certificate** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC10021-4.

7.11.2.3 SecVerifMOAC Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.11.3 State parameters

These parameters are described in 7.4.3.

7.11.4 Service primitives

Table 9 provides the list of the Message origin authentication management service primitives.

Table 9 – Message Origin authentication management service primitives

Primitives	Service SMASE	CMISE	Objects
Creation of the Messages Origin Authentication function	PT-Create	M-Create	SecVerifMOACFunction
Deletion of the Messages Origin Authentication function	PT-Delete	M-Delete	SecVerifMOACFunction
Suspension of the Messages Origin Authentication function activity	State Management function	M-Set	SecVerifMOACFunction
Resumption of the Messages Origin Authentication function activity	State Management function	M-Set	SecVerifMOACFunction
Retrieval of parameters of the Messages Origin Authentication function	PT-Get	M-Get	SecVerifMOACFunction
Modification of parameters of the Messages Origin Authentication function	PT-Set	M-Set	SecVerifMOACFunction
State change notification	State Management function	M-EventReport	SecVerifMOACFunction
Processing alarm notification	Alarm reporting Management Function	M-EventReport	SecVerifMOACFunction
Security alarm notification	Security alarm reporting Management Function	M-EventReport	secConversionFunction

7.12 Probes origin authentication function management

This service is identical to the one described for messages in 7.11.

7.13 Reports origin authentication function management

This service is identical to the one described for messages in 7.11.

7.14 MHS event logs

The MHS events log service is described in ITU-T Rec. X.462 | ISO/IEC 11588-3.

7.15 MTS Users associations management

7.15.1 Description

The MTS Users association management enables the MHS system manager to monitor the establishment of an association between the managed MTA and one of its MTS Users.

This service provides primitives:

a) to be notified of accepted and rejected association establishment attempts;

b) to retrieve parameters of an association;

c) to be notified of an association normal or abnormal release.

NOTES

1 This service enables the MHS system manager to retrieve information of 'a dynamic nature' on current established associations. Information of 'a static nature' (i.e. information that is needed prior to the establishment of an association) may be managed through MTS User capabilities assessments management services.

2 An association establishment attempt is accepted when the result parameter of the corresponding A-ASSOCIATE request takes the value 'accepted' as described in ITU-T Rec. X.217 | ISO/IEC 8649.

7.15.2 Main parameters

7.15.2.1 Application Context

This attribute identifies the application context negotiated during association establishment.

7.15.2.2 Association Initiator

This attribute defines who initiated the current association. The values can be local (i.e. the managed MTA) or remote.

7.15.2.3 Association Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.15.2.4 Creation Time

This attribute provides the time the Managed Object instance has been created.

7.15.2.5 Initiator Access Point Address

This attribute provides the access point address used by the initiator during association establishment. This attribute may have one of the possible values of a **PSAP-address** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic address' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.15.2.6 Responder Access Point Address

This attribute provides the access point address used by the responder during association establishment. This attribute may have one of the possible values of a **PSAP-address** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic address' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.15.3 State parameters

7.15.3.1 Operational State

The Operational State parameter describes the operability of the association. The operational state attribute has two possible values: disabled and enabled. An association is disabled in no operation can be performed on the association. The operational state parameter is defined in CCITT Rec. X.731 | ISO/IEC 10164-2. Table 10 describes the status of an association for each possible value of the usage state and operational state parameters.

7.15.3.2 Usage State

The usage state attribute has two possible values: idle and active. The value idle indicates that the association was previously established but is released. The usage state parameter is defined in CCITT Rec. X.731 | ISO/IEC 10164-2. Table 10 describes the status of an association for each possible value of the usage state and operational state parameters.

NOTE – CCITT Rec. X.731 | ISO/IEC 10164-2 defined a third value for the usage state: 'busy'. The use of this value for the usage state of an association is not defined in this Recommendation | International Standard.

Table 10 – Possible states of an association

Operational state value	Usage state value	Association status
enable	active	The association is currently established
disable	active	The association establishment failed
enable	idle	The association was normally released
disable	idle	The association was abnormally released

7.15.4 Simple authentication parameters

7.15.4.1 Initiator Simple Credentials

If simple authentication is used, for the current association, this attribute provides the simple credentials used by the initiator during association establishment. This attribute may have one of the possible values of a **password** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.15.4.2 Responder Simple Credentials

If simple authentication is used for the current association, this attribute provides the simple credentials used by the responder during association establishment. This attribute may have one of the possible values of a **password** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.15.5 Service primitives

Table 11 provides the list of the MTS User association management service primitives.

Table 11 – MTS User association management service primitives

Primitives	Service SMASE	CMISE	Objects
Retrieval of parameters of an association	PT-Get	M-Get	association
Association establishment notification	Object management function	M_EventReport	association
Association release notification	Object management function	M_EventReport	association
Association abort and recovery	State Management function	M-EventReport	association

7.16 Adjacent MTA associations management

7.16.1 Description

The Adjacent MTA association management enables the MHS system manager to monitor the establishment of an association between the managed MTA and one of its adjacent MTA.

This service provides primitives:

a) to be notified of accepted and rejected association establishment attempts;

b) to retrieve parameters of an association;

c) to be notified of an association normal or abnormal release.

NOTES

1 This service enables the MHS system manager to retrieve information of 'a dynamic nature' on current established associations. Information of 'a static nature' (i.e. information that is needed prior to the establishment of an association) may be managed through Adjacent MTA capabilities assessments management services.

2 An association establishment attempt is accepted when the result parameter of the corresponding A-ASSOCIATE request takes the value 'accepted' as described in ITU-T Rec. X.217 | ISO/IEC 8649.

7.16.2 Parameters

The parameters are described in 7.15.2, 7.15.3 and 7.15.4.

7.16.3 Service primitives

Association management services primitives are described in 7.15.5.

7.17 Secure MTS Users associations management

7.17.1 Description

The Secure MTS Users association management enables the MHS system manager to monitor the establishment of a secure association between the managed MTA and one of its MTS Users.

This service provides primitives:

a) to be notified of a secure MTS User association establishment;

b) to retrieve security parameters of a secure MTS User association;

c) to be notified of a secure MTS User association release;

f) to receive security alarms.

NOTE – This services enables the MHS system manager to retrieve information of 'a dynamic nature' on current established associations. Information of 'a static nature' (i.e. information that is needed prior to the establishment of an association) may be managed through secure MTS User capabilities assessments management services.

7.17.2 Parameters

7.17.2.1 Initiator Strong Credentials

If strong authentication is used, this attribute provides the strong credentials used by the initiator during association establishment. This attribute may have one of the possible values of an **initiator-bind-token** and, optionally, an **initiator-certificate** MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic Strong Credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.17.2.2 Initiator Security Context

If strong authentication is used, this attribute provides the security context proposed by the initiator during association establishment. This attribute may have one of the possible values of a **security-context** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.17.2.3 Responder Strong Credentials

If strong authentication is used, this attribute provides the strong credentials used by the responder during association establishment. This attribute may have one of the possible values of an **initiator-bind-token** and, optionally, an **initiator-certificate** MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic Strong Credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.17.2.4 SecAssociation Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.17.3 Service primitives

Table 12 provides the list of the MTS User secure association management service primitives.

Table 12 – MTS User secure association management service primitives

Primitives	Service SMASE	CMISE	Objects
Retrieval of security parameters of an association	PT-Get	M-Get	secAssociation
Security association creation notification	Object management function	M_EventReport	secAssociation
Security association deletion notification	Object management function	M_EventReport	secAssociation
Security alarm notification	Security alarm reporting Management Function	M-EventReport	secConversionFunction

7.18 Secure adjacent MTA associations management

7.18.1 Description

The Secure adjacent MTA association management enables the MHS system manager to monitor the establishment of a secure association between the managed MTA and its adjacent mta.

This service provides primitives:

a) to be notified of a secure adjacent MTA association establishment;

b) to retrieve security parameters of a secure adjacent MTA association;

c) to be notified of a secure adjacent MTA association release;

d) to receive security alarms.

NOTE – This service enables the MHS system manager to retrieve information of 'a dynamic nature' on current established associations. Information of 'a static nature' (i.e. information that is needed prior to the establishment of an association) may be managed through secure Adjacent MTA capabilities assessments management services.

7.18.2 Parameters

The secure association parameters are described in 7.17.2.

7.18.3 Service primitives

Secure association management primitives are described in 7.17.3.

7.19 Management of MPR

7.19.1 Description

This service provides primitives:

a) to examine the list of MPR currently processed by the managed MTA;

b) to remove an MPR item from the MPR list;

c) to create, examine and delete a detailed view of an MPR currently processed by the managed MTA;

d) to control the processing of an MPR:

1) adjust expiry duration;

2) force the processing priority of an MPR;

3) hold an MPR.

NOTES

1 An MPR item is removed from the MPR list when the MHS System manager determines that the MTS cannot deliver a message or a report or affirm a probe.

2 An MPR detailed view is deleted when the MHS System manager determines that the corresponding information is not useful anymore.

7.19.2 MPR list parameters

The MPR Information parameter provides information on all MPR currently processed by the managed MTA.

7.19.2.1 MPR Information

This attribute describes, for each MPR, its arrival Time and processing state.

NOTE – Arrival Time and Processing State attributes are described in 7.19.3.

7.19.2.2 MPRList Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.19.3 MPR main parameters

7.19.3.1 Arrival Time

This attribute provides the arrival time of the MPR in the managed MTA.

7.19.3.2 Content Type

This parameter provides the content type of the MPR. This parameter may have one of the possible value of a **content-type** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.19.3.3 Deferral Time

This attribute provides the deferral time of the MPR. This parameter may have one of the possible value of a **deferred-delivery-time** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.19.3.4 EITs

This attribute defines the encoded-information-types of the MPR. This attribute may have one of the possible values of a**n encoded-information-types** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic encoded information types' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.19.3.5 Last Adjacent MTA Name

If the MPR was transferred from an adjacent MTA, this parameter provides the name of the adjacent MTA. An empty value indicates that the arrival of the MPR was not the result of a transfer operation. This attribute may have one of the possible values of an **MTA-name** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MTA name' type may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.19.3.6 Message Content Size

This parameter provides the content size of the MPR.

7.19.3.7 MPR Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.19.3.8 MTS Identifier

This parameter provides the MTS-identifier of the MPR. This attribute may have one of the possible values of an **MTS-Identifier** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MPDU identifier' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.19.3.9 Next Adjacent MTA Name

If the MPR is or will be transferred to an adjacent MTA, this parameter provides the name of the adjacent MTA. An empty value indicates that the MPR will not be transferred to an adjacent MTA or that the Routing function is not performed yet by the managed MTA for the current MPR. This attribute may have one of the possible values of an **MTA-name** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MTA name' type may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

NOTE – The processing summary attribute described in 7.19.3 enables the MHS System manager to verify, for each MPR currently being processed by the managed MTA, if the Routing Function was performed.

7.19.3.10 Originator Name

This parameter provides the originator-name of the MPR. This attribute may have one of the possible values of an **OR-name** MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.19.3.11 Priority

This parameter provides the priority of the MPR. This attribute may have one of the possible values of a **priority** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.19.3.12 Processing State

This parameter provides information on the function currently performed on the MPR. A processing state set to 'idle' indicates that the MPR is waiting to be processed. A processing state set to 'processed' indicates that the MPR was successfully processed. A processing state set to 'rejected' indicates that the MTS was not able to deliver the message or the report or affirm the probe. A processing state set to 'name-resolution', 'redirection', 'deferred-delivery', 'conversion' or 'securityContextCheck' indicates that the MPR is currently performing the corresponding function on the MPR. The value 'unknownFunction' indicates that the MTA is currently performing a function on the MPR that is not name resolution, dl expansion, redirection, deferred-delivery, conversion or security Context Check.

7.19.3.13 Processing Summary

This parameter provides information on the functions which were successfully performed on the MPR by the managed MTA since the arrival time. The following functions are monitored by this parameter: name resolution, dl expansion, redirection, deferred-delivery, conversion and security context check. If no function is performed yet by the MTA on the MPR, the processing Summary parameter is set to 'idle'.

7.19.3.14 Recipients Names

This attribute indicates the MTS User name of each recipient of the MPR. For a report this attribute indicates the actual recipients names. This attribute may have one of the possible values of a set of **OR-name** MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.19.3.15 Type of MPR

This attribute defines the type of the MPR. Possible values are message, probe or report.

7.19.4 MPR Processing Control parameters

7.19.4.1 Forced Expiry Duration

If MPR processing control is supported by the managed MTA, this attribute enables the MHS system manager to change the expiry duration of an MPR during its processing by the managed MTA. This attribute is empty unless set by the MHS system manager. If the value is empty or equal to zero, the expiry duration for the MPR is the default expiry duration value defined for the corresponding grade of delivery: Default Urgent MPR Expiry Duration, Default Non-Urgent MPR Expiry Duration or Default Normal MPR Expiry Duration.

NOTE – Default expiry duration parameters are described in 7.2.2.

7.19.4.2 Forced Processing Priority

If MPR processing control is supported by the managed MTA, this attribute enables the MHS system manager to change the processing priority of an MPR. Initial value of this attribute is the grade of delivery of the MPR.

7.19.4.3 Held by the manager

If MPR processing control is supported by the managed MTA, this attribute enables the MHS system manager to hold an MPR. Possible values are true or false (Boolean).

7.19.5 Service primitives

Table 13 provides the MPR list and MPR management service primitives.

Table 13 – MPR list and MPR management service primitives

Primitives	Service SMASE	CMISE	Objects
Retrieval of MPR list information	PT-Get	M-Get	MPRList
Removal of MPR from the MPR list	PT-Set	M-Set	MPRList
Creation of an MPR detailed view	PT-Create	M-Create	MPR
Deletion of an MPR detailed view	PT-Delete	M-Delete	MPR
Retrieval of parameters of an MPR detailed view	PT-Get	M-Get	MPR
Force expiry duration of an MPR	PT-Set	M-Set	MPR
Force processing priority of an MPR	PT-Set	M-Set	MPR
Hold of an MPR	PT-Set	M-Set	MPR

7.20 Secure messages management

7.20.1 Description

This service enables the MHS System manager to create, examine and delete a detailed view of security parameters of messages currently processed by the managed MTA.

7.20.2 Parameters

7.20.2.1 Content Integrity Check

This attribute indicates the integrity check of the content. This attribute may have one of the possible values of a **content-integrity-check** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.20.2.2 Message Origin Authentication Check

This attribute provides the authentication check to determine the origin. This attribute may have one of the possible values of a **message-origin-authentication-check** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.20.2.3 Message Originator Certificate

This attribute provides the certificate of the originator. This attribute may have one of the possible values of an **originator-certificate** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.20.2.4 Message Security Label

This attribute provides the labels for security. This attribute may have one of the possible values of a **message-security-label** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.20.2.5 Message Token

This attribute provides the security token. This attribute may have one of the possible values of a **message-token** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.20.2.6 Proof of Delivery Request

This attribute identifies if proof of Delivery is requested. This attribute may have one of the possible values of a **proof-of-delivery-request** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.20.2.7 SecMessage Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.20.3 Service primitives

Table 14 provides the secure message management service primitives.

Table 14 – Secure message management service primitives

Primitives	Service SMASE	CMISE	Objects
Creation of detailed view of an MPR security parameters	PT-Create	M-Create	secMessage
Deletion of a detailed view of an MPR security parameters	PT-Delete	M-Delete	secMessage
Retrieval of MPR security parameters	PT-Get	M-Get	secMessage

7.21 Secure probes management

7.21.1 Description

This service provides primitives to create, examine and delete a detailed view of security parameters of a probe currently processed by the managed MTA.

7.21.2 Parameters

7.21.2.1 Probe Origin Authentication Check

This attribute provides the authentication check to determine the origin. This attribute may have one of the possible values of a **probe-origin-authentication-check** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.21.2.2 Probe Originator Certificate

This attribute provides the certificate of the originator. This attribute may have one of the possible values of an **originator-certificate** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.21.2.3 Probe Security Label

This attribute provides the labels for security. This attribute may have one of the possible values of a **message-security-label** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.21.2.4 SecProbe Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.21.3 Service primitives

MPR security management primitives are described in 7.18.

The secProbe managed object class represents probe security information.

7.22 Secure reports management

7.22.1 Description

This service provides primitives to create, examine and delete a detailed view of security parameters of reports currently processed by the managed MTA.

7.22.2 Parameters

7.22.2.1 Proof of Delivery Request

This attribute identifies if proof of Delivery is requested. This attribute may have one of the possible values of **a proof-of-delivery-request** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.22.2.2 Recipient Certificate

This attribute indicates the certificate of a recipient. This attribute may have one of the possible values of a **recipient certificate** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.22.2.3 Report Origin Authentication Check

This attribute provides the authentication check to determine the origin. This attribute may have one of the possible values of a **report-origin-authentication-check** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.22.2.4 Report Security Label

This attribute provides the labels for security. This attribute may have one of the possible values of a **message-security-label** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.22.2.5 SecReport Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.22.3 Service primitives

MPR security management primitives are described in 7.20.

The secReport managed objet class represents report security information.

7.23 MTS Users capabilities assessments management

7.23.1 Description

This service provides primitives:

a) to create and delete a management view of an MTS User;

b) to retrieve and eventually modify MTS Users capabilities assessments;

c) to permit or prohibit establishment of associations and exchange of MPR between the MTS User and the managed MTA;

d) to be notified of attributes values changes due, for instance, to a Register or a Change credential MHS operation.

7.23.2 Main parameters

7.23.2.1 Collocated

This attribute indicates if the MTS User is collocated with the managed MTA.

7.23.2.2 Local MTA Simple Credentials

This attribute provides the simple password that can be used by the managed MTA during association establishment for simple authentication of itself. This attribute may have one of the possible values of a **password** MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.23.2.3 MTS User Access Point Address

This attribute defines the access point address of the MTS User. This attribute may have one of the possible values of a **PSAP address** MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic address' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.23.2.4 MTS User Deliverable Content Types

This attribute indicates which content types the MTS User is able to receive. This attribute may have one of the possible values of a set of **content-type** MTS abstract service parameters as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.23.2.5 MTS User Deliverable EITS

This attribute indicates which encoded information types the MTS User is able to receive. This attribute may have one of the possible values of an **encoded-information-types** MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic encoded information types' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.23.2.6 MTS User Deliverable Maximum Content Length

This attribute defines the maximum size of the content which can be processed by the MTS User.

7.23.2.7 MTS User Name

This attribute may have one of the possible values of the MTS User name of the MTS User. This attribute may have one of the possible values of an **OR-name** MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.23.2.8 MTSUser Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.23.2.9 MTS User Preferred Delivery Method

This attribute describes the preferred delivery method of the MTS User. This attribute may have one of the possible values of a **requested-delivery-method** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.23.2.10 MTS User Simple Credentials

This attribute provides the simple password that can be used by the MTS User during association establishment for simple authentication of itself. This attribute may have one of the possible values of a **password** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.23.2.11 MTS User Supported Application Contexts

This attribute defines the MHS application contexts that are supported by the MTS User.

7.23.2.12 MTS User Type

This attribute indicates the nature of the MTS User. The nature can be an UA, MS or AU.

7.23.2.13 Wait Time to Release

This attribute describes the duration in seconds an association established at the initiative of the managed MTA will remain idle before being closed.

7.23.3 State Parameters

7.23.3.1 Administrative State

The Administrative state enables the MHS system manager to permit or prohibit establishment of associations and exchange of MPR between the MTS User and the managed MTA. The Administrative state parameter has three possible values: locked, shutting down and unlocked. These are described in CCITT Rec. X.731 | ISO/IEC 10164-2.

7.23.4 Default Delivery Control arameters

7.23.4.1 Default Permissible Operations

If the delivery control operation is supported by the MTS User, this parameter describes the default delivery controls on permissible operations. This attribute may have one of the possible values of a **permissible-operation** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.23.4.2 Default Permissible lowest priority

If the delivery control operation is supported by the MTS User, this parameter describes the default delivery controls on permissible lowest MPR priority. This attribute may have one of the possible values of a **permissible-lowest-priority** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.23.4.3 Default Permissible EITs

If the delivery control operation is supported by the MTS User, this parameter describes the default delivery controls on permissible encoded information types. This attribute may have one of the possible values of a **permissible-encoded information-types** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic encoded information types' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.23.4.4 Default Permissible content types

If the delivery control operation is supported by the MTS User, this parameter describes the default delivery controls on permissible content types. This attribute may have one of the possible values of a **permissible-content-types** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.23.4.5 Default Permissible maximum content length

If the delivery control operation is supported by the MTS User, this parameter describes the default delivery controls on maximum content length.

7.23.5 Simple Redirection parameters

7.23.5.1 Simple Redirection Recipient

If simple redirection was subscribed by the MTS User, this parameter provides a redirection address. This attribute may have one of the possible values of an **OR-name** MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. If the redirection address has the value NULL, then redirection does not take place and the message is

non-delivered. For a non-standardised implementation of this MTS abstract service parameter a 'generic name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.23.6 Restricted Delivery parameters

7.23.6.1 Permitted messages

If restricted delivery was subscribed by the MTS User, this parameter provides the selected messages the MTS User is willing to receive. This attribute may have one of the possible values of a set of **restrictions** MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. An empty value indicates that all messages are accepted.

7.23.6.2 Disallowed messages

If restricted delivery was subscribed by the MTS User, this parameter provides the selected messages the MTS User is not willing to receive. This attribute may have one of the possible values of a set of **restrictions** MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. An empty value indicates that all messages are accepted.

7.23.7 Directory access parameters

If Directory is used for MHS and an **mhs-user-agent** directory object instance is present for the managed element, the directory access parameters enable to maintain consistency between the MIB and the DIB. The mhs-user-agent directory object class is described in Annex A of ITU-T Rec. X.402 | ISO/IEC 10021-2.

Directory access parameters are described in 7.2.5.

7.23.8 Service primitives

Table 15 provides the list of the MTS User assessment management service primitives.

Table 15 – MTS User assessment management service primitives

Primitives	Service SMASE	CMISE	Objects
Creation of an MTS User	PT-Create	M-Create	mtsUser
Deletion of an MTS User	PT-Delete	M-Delete	mtsUser
Retrieval of capabilities assessments of an MTS User	PT-Get	M-Get	mtsUser
Modification of capabilities assessments of an MTS User	PT-Set	M-Set	mtsUser
Permit association and MPR exchanges	State Management function	M-Set	mtsUser
Prohibit association and MPR exchanges	State Management function	M-Set	mtsUser
State change notification	State Management function	M-EventReport	mtsUser
Attribute value change notification	Object management	M-EventReport	mtsUser

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7.24 MTS Users security assessments management

7.24.1 Description

This service provides primitives to manage the additional information necessary to manage security with an MTS User. This service provides primitives:

a) to create and delete a management view of security assessments of an MTS User;

b) to retrieve and eventually modify the security assessments of an MTS User.

7.24.2 Parameters

7.24.2.1 Local MTA Strong Credentials

This attribute provides the strong credentials that can be used by the managed MTA during association establishment for strong authentication of itself. This attribute may have one of the possible values of an **initiator-bind-token** and, optionally, an **initiator-certificate** MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic Strong Credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.24.2.2 MTS User Strong Credentials

This attribute provides the strong credentials that can be used by the MTS User during association establishment for strong authentication of itself. This attribute may have one of the possible values of an **initiator-bind-token** and, optionally, an **initiator-certificate** MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic Strong Credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.24.2.3 SecMTSUser Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.24.2.4 Security Labels

This attribute provides the security labels that can be used by the MTS User to establish an association with the managed MTA.

7.24.3 Secure Redirection parameters

7.24.3.1 Redirections

If secure redirection was subscribed, this parameter provides, for each security label, a redirection address. If a redirection address has the value NULL, then redirection does not take place and the message is non-delivered.

7.24.4 Service primitives

Table 16 provides the list of the MTS User security assessments management service primitives.

Table 16 – MTS User security assessments management service primitives

Primitives	Service SMASE	CMISE	Objects
Creation of a secure MTS User	PT-Create	M-Create	secMtsUser
Deletion of a secure MTS User	PT-Delete	M-Delete	secMtsUser
Retrieval of security capabilities assessments of an MTS User	PT-Get	M-Get	secMtsUser
Modification of security capabilities assessments of an MTS User	PT-Set	M-Set	secMtsUser

7.25 Adjacent MTA capabilities assessments management

7.25.1 Description

This service provides primitives:

a) to create and delete a management view of an adjacent MTA;

b) to retrieve and modify adjacent MTA capabilities assessments;

c) to permit or prohibit establishment of associations and exchange of MPR between the adjacent MTA and the managed MTA;

d) to be notified of attributes values changes.

7.25.2 Parameters

7.25.2.1 Adjacent MTA Access Point Address

This attribute defines the access point address of the adjacent MTA. This attribute may have one of the possible values of a **PSAP address** MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic address' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.25.2.2 Adjacent MTA Global Domain Identifier

This attribute provides the value of the Global Domain Identifier used by the adjacent MTA to create MTS identifiers, Trace information elements and Internal trace information elements. This attribute may have one of the possible values of a **global-domain-identifier** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic global domain identifier' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.25.2.3 Adjacent MTA Maximum Message Size

This attribute defines the maximum size of messages from the managed MTA which can be processed by this adjacent MTA.

7.25.2.4 Adjacent MTA Name

This attribute identifies the name of the adjacent MTA which shall be provided by the managed MTA during association establishment. This attribute may have one of the possible values of an **MTA-name** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MTA name' type may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.25.2.5 Adjacent MTA Possible conversions

This attribute may have one of the possible values of a set of possible conversion which are supported by the adjacent MTA. This attribute may have one of the possible values of a set of **explicit-conversion** MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic conversion type' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.25.2.6 Adjacent MTA Simple Credentials

This attribute provides the simple password that can be used by the MTS User during association establishment for simple authentication of itself. This attribute may have one of the possible values of a **password** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.25.2.7 Adjacent MTA Supported Application Contexts

This attribute defines the MHS application contexts that are supported by the adjacent MTA.

7.25.2.8 Bilateral Deferral

This attribute specifies whether a bilateral agreement exists between the managed MTA and the adjacent MTA for deferring messages. If an agreement exists the MPR will be deferred.

7.25.2.9 Local MTA Maximum Message Size

This attribute defines the maximum size of messages from the adjacent MTA which can be processed by the managed MTA.

7.25.2.10 Local MTA Simple Credentials

This attribute provides the simple password that can be used by the managed MTA during association establishment for simple authentication of itself. This attribute may have one of the possible values of a **password** MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

7.25.2.11 Wait Time To Release

This attribute describes the amount of time in seconds an association established at the initiative of the managed MTA will remain idle before being closed.

7.25.3 State parameters

7.25.3.1 Administrative State

The Administrative State enables the MHS system manager to permit or prohibit establishment of associations and exchange of MPR between the adjacent MTA and the managed MTA. The Administrative state parameter has three possible values: locked, shutting down and unlocked. These are described in CCITT Rec. X.731 | ISO/IEC 10164-2.

7.25.4 Directory access parameters

If Directory is used for MHS and an **mhs-message-transfer-agent** directory object instance is present for the managed element, the directory access parameters enable to maintain consistency between the MIB and the DIB. The mhs-message-transfer-agent directory object class is described in Annex A of ITU-T Rec. X.402 | ISO/IEC 10021-2.

Directory access parameters are described in 7.2.5.

7.25.5 Service primitives

Table 17 provides the list of the Adjacent MTA assessments management service primitives.

Table 17 – Adjacent MTA assessments management service primitives

Primitives	Service SMASE	CMISE	Objects
Creation of an adjacent MTA	PT-Create	M-Create	adjMTA
Deletion of an adjacent MTA	PT-Delete	M-Delete	adjMTA
Retrieval of capabilities assessments of an adjacent MTA	PT-Get	M-Get	adjMTA
Modification of capabilities assessments of an adjacent MTA	PT-Set	M-Set	adjMTA
Permit association and MPR exchanges	State Management function	M-Set	adjMTA
Prohibit association and MPR exchanges	State Management function	M-Set	adjMTA
State change notification	State Management function	M-EventReport	adjMTA
Attribute value change notification	Object management	M-EventReport	adjMTA

7.26 Adjacent mta security assessments management

7.26.1 Description

This service provides primitives to manage the additional information necessary to manage security with an adjacent MTA.

This service provides primitives:

a) to create and delete a management view of security assessments of an adjacent MTA;

b) to retrieve and eventually modify the security assessments of an adjacent MTA.

7.26.2 Parameters

7.26.2.1 Adjacent MTA Strong Credentials

This attribute provides the strong credentials that can be used by the Adjacent MTA during association establishment for strong authentication of itself. This attribute may have one of the possible values of an **initiator-bind-token** and, optionally, an **initiator-certificate** MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

For a non-standardised implementation of this MTS abstract service parameter a 'generic Strong Credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.26.2.2 Local MTA Strong Credentials

This attribute provides the strong credentials that can be used by the managed MTA during association establishment for strong authentication of itself. This attribute may have one of the possible values of an **initiator-bind-token** and, optionally, an **initiator-certificate** MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic Strong Credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.

7.26.2.3 secAdjMTA Object Instance Identifier

This attribute is used for the naming of the managed object instance.

7.26.2.4 Security Labels

This attribute provides the security labels that can be used by the adjacent MTA during association establishment.

7.26.3 Service primitives

Table 18 provides the list of the Adjacent MTA security assessments management service primitives.

Table 18 – MTA security assessments management service primitives

Primitives	Service SMASE	CMISE	Objects
Creation of a secure MTA	PT-Create	M-Create	secAdjMTA
Deletion of a secure MTA	PT-Delete	M-Delete	secAdjMTA
Retrieval of security capabilities assessments of an MTA	PT-Get	M-Get	secAdjMTA
Modification of security capabilities assessments of an MTA	PT-Set	M-Set	secAdjMTA

8 MTA model

8.1 Introduction

This specification on MHS management describes the Management Information Model (MIM) of a Message Transfer Agent (MTA).

In principle the model covers the five OSI Management functional areas: configuration-, performance-, fault-, security- and logging information management. Other MHS management specifications deal specifically with these functional areas and parts of the MTA MIM are described in these documents. This specification will therefore make references to the functional area specifications.

NOTE – For example the mhsEventLog is defined in the MHS Logging Information Management specification ITU-T Rec. X.462 | ISO/IEC 11588-3).

8.2 Position within TMN model

The MIM for MTA management is one of a set of MIMs for Network Elements in a message handling network. Management of a User Agent (UA), an Access Unit (AU) and a Message Store (MS) is described in ITU-T Rec. X.468 | ISO/IEC 11588-9, ITU-T Rec. X.470 | ISO/IEC 11588-11, ITU-T Rec. X.469 | ISO/IEC 11588-10 respectively. These MIMs fill the Network Element Management (NEM) layer of the TMN model for MHS Management.

The MIM for Network Management (NM) is described in five separate documents, each of which describes the aspects concerning one Open System Interconnection (OSI) functional area of management (configuration, performance, accounting, fault and security.). The NM functions use the management information provided by the NEM functions. NEM information is also input for some functions in the Service Management (SM) layer and Business Management (BM) layer. For example the usage metering information available within MTA (NEM function) are used for charging purposes in the SM layer.

8.3 MTA Management information model

The MTA MIM specifies a management view of a managed MTA which can be used to control and monitor the functions of a managed MTA, its associations with Neighbouring Network Elements (i.e. MTA or MTS Users) and the MPR currently under process. A managed MTA also needs to maintain a view of its Neighbouring Network Elements. This view is required to establish associations and control operations between the managed MTA and its Neighbouring Network Elements.

Configuration-, performance-, accounting-, fault- and security management aspects apply to MTA management. Figure 1 shows the naming tree for the MTA management information model.

Some managed objects in Figure 1 represent information of a static nature to the MTA. This information reflects the possible values of MHS parameters as known by the MTA. This information is not changed except under specific management actions of the MHS system manager. Examples of such information are the credentials attributes in the mtsUser and adjMTA managed objects. Managed information in other managed objects is of a dynamic nature, which reflects the current status of information known to the MTA. Examples of dynamic information are the credentials used within active associations.

mta

The mta managed object class describes general MTA management information (e.g. MTA name, MTA version and product information) in order to provide the management of the MTA overall operability and availability. For each MTA one instance of the mta managed object class exists. Management information regarding functional parts of a managed mta is defined in separate managed object classes subordinate to the mta managed object class. These functional parts are:

a) Management of MTA functions (routingFunction, distributionListFunction and conversionFunction managed object classes).

b) Management of Security Features – Management information on security features is defined in managed object classes sec*Function (e.g. secGenROACFunction managed object class).

c) Management of associations (association managed object class).

d) Management of MPR (mprList and mpr managed object classes).

e) Management of MTS Users capabilities assessments (mtsUser managed object class).

f) Management of Adjacent mta capabilities assessments (adjMTA managed object class).

g) Logging of MTA (mhsEventLog.managed object class).

h) Performance data – The performance data of the MTA is gathered with the managed object classes perfMTACurrentData, perfMTAHistoryData and thresholdData.

mtsUser

The mtsUser managed object describes the information required to establish an association and exchange MPR with an mtsUser of the managed MTA. One instance of this managed object class exists for each MTS User of the managed MTA. The association and the secMtsUser managed object classes are subordinated to the mtsUser managed object class:

– The secMtsUser object class provides the information required to build a secure association with an MTS User of the managed MTA.

– The association object class maintains dynamic information on an association established with the managed MTA. An association object instance is created for each association established with the managed MTA. An association object instance may also be created for a rejected attempt. An association object instance needs not be deleted when the corresponding association is released. As several associations can be established at the same time between the managed MTA and an MTS User, several association object instances can exist at the same time. If a secure association is required an instance of secAssociation managed object is created.

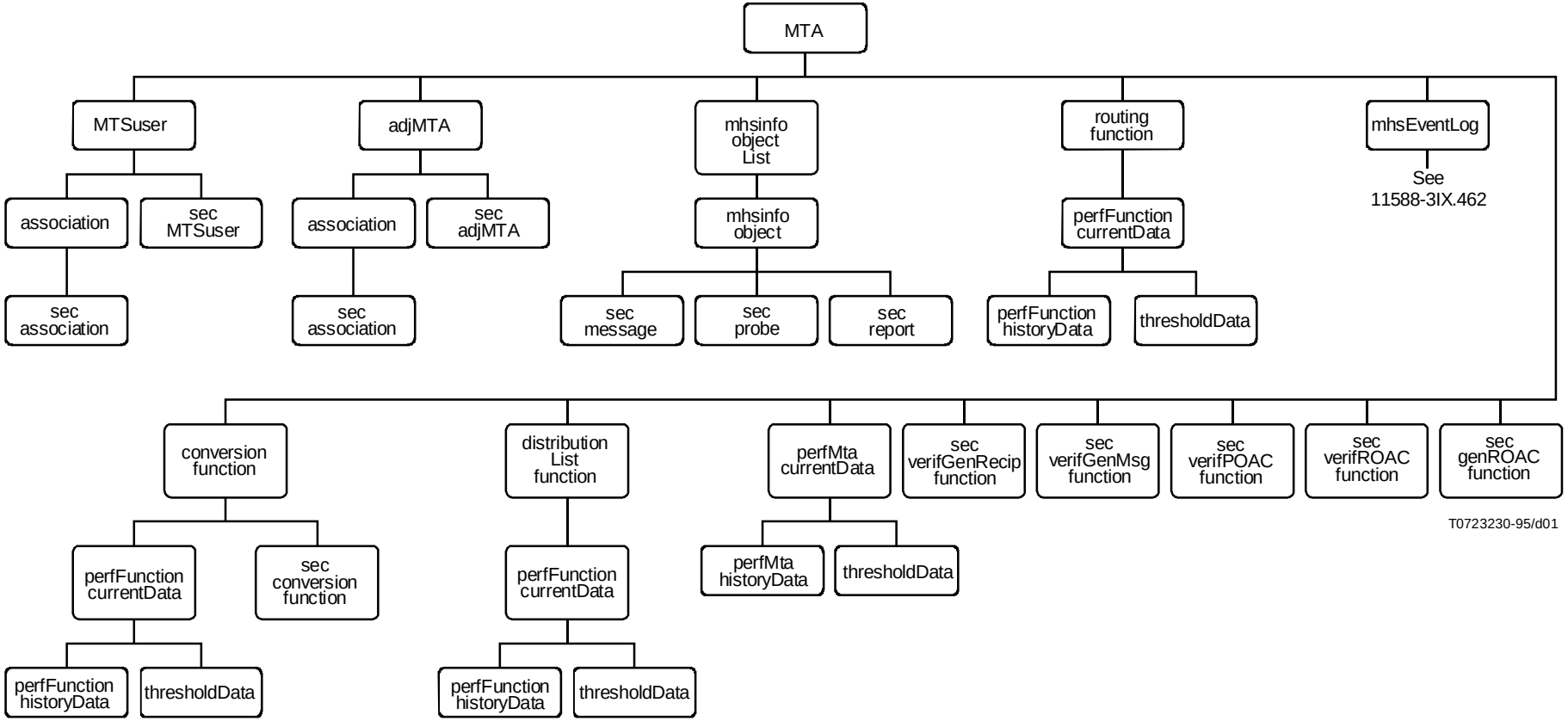

Figure 1 – Naming hierarchy for MTA management

adjMTA

The AdjMTA Managed Object class describes the information required to establish an association and exchange MPR with an adjacent MTA. For each adjacent MTA of the managed MTA, an instance of this class is created. The association and the secAdjMTA managed object classes are subordinated to the mtsUser managed object class:

– The secAdjMTA object class provides the information required to build a secure association with an adjacent MTA of the managed MTA.

mprList

The mprList Managed Object class represents a list of the MPR currently being processed by the managed MTA. An MPR item is removed from the MPR list when the MHS System manager determines that the MTS cannot deliver a message or a report or affirm a probe.The mpr managed object class is subordinated to the mprList managed object class:

– A mpr managed object instance is created on the request of the MHS system manager whenever he requires more information on a specific mpr then listed in the mprList object. A mpr object instance enables the MHS system manager to control and modify the processing of a specific mpr. If secure messages, probes or reports are supported, an instance of the managed objects secMessage, secProbe or secReport is created

NOTE 1 – The lifetime of an information object in a managed mta is normally very short. The majority of information objects are simply switched from an input port (submission, transfer in) to an output port (transfer out, delivery). It would create a lot of overhead in the MTA without any purpose to have a mpr managed object instance created for every message, probe or report. Only when a failure occurs it will be beneficial to create a mpr managed object instance.

routingFunction

The MTA capability to determine routing actions for each of a message or probes recipients for which the managed MTA is responsible is called the Routing function. This function is invoked each time a routing instruction for a single recipient of a message, a report or a probe is generated by the managed MTA.

To gather the performance data instances of the Routing functionality an instance of the perfFunctionCurrentData, perfFunctionHistoryData and thresholdData managed objects can be created.

conversionFunction

The MTA capability to provide a conversion of a specific type (e.g. from IA5Text to TTX) is called a Conversion function. This function is invoked each time a conversion of the corresponding type is performed by the managed MTA. A ConversionFunction Object instance is created for each type of conversion supported by the managed MTA. If secure conversion is offered, an instance of the secConversion managed object class will be created.

To gather the performance data of the Conversion functionality, an instance of the perfFunctionCurrentData, perfFunctionHistoryData and thresholdData managed objects can be created.

distributionListFunction

The MTA capability to expand distribution lists is called the D.L. Expansion function. This function is invoked each time a Distribution list is expanded by the managed MTA. If the managed MTA can perform the D.L. Expansion function, a distributionList object instance is created.

To gather the performance data of the distribution list functionality, an instance of the perfFunctionCurrentData, perfFunctionHistoryData and thresholdData managed objects can be created.

mhsEventLog

The mhsEventLog managed object class describes the management functionality with respect to the logging of events. The mhsEventLog is defined in ITU-T Rec. X.462 | ISO/IEC 11588-3.

perfMTACurrentData

The perfMTACurrentData managed object class describes the performance data for the superior managed object class (e.g. MTA). Zero or more instances of a perfMTACurrentData managed object class may exist and are created by the MHS system manager. The different instances may monitor different statistics. The perfMTACurrentData managed object instances monitor data for a certain adjusTable time interval. After this interval the data is copied to a history 'file', the perfMTACurrentData attributes are reset, and monitoring continues. The history 'file' is represented by instances of the perfMTAHistoryData managed object class. The perfMTAHistoryData managed object class is named

by the perfMTACurrentData managed object class. As many instances of the perfMTAHistoryData managed object class exists as time intervals are passed. The thresholdData managed object class is also named by the perfMTACurrentData managed object class. The thresholdData managed object class describes thresholds on the performance data. If thresholds are violated an alarm report is generated.

NOTE 2 – The same explanation applies for perfFunctionCurrentData and perFunctionHistorydata.

sec*Function

The sec*Function managed object classes describe optional security functionality which may be offered by the managed MTA (* = verifGenRecip, verifGenMsg, verifPOAC, verifROAC or genROAC). Zero or more instances of a sec*Function managed object class may be created by the MHS system manager.

The inheritance trees for the managed object classes which are defined in this Recommendation | International Standard are depicted in Figure 2.

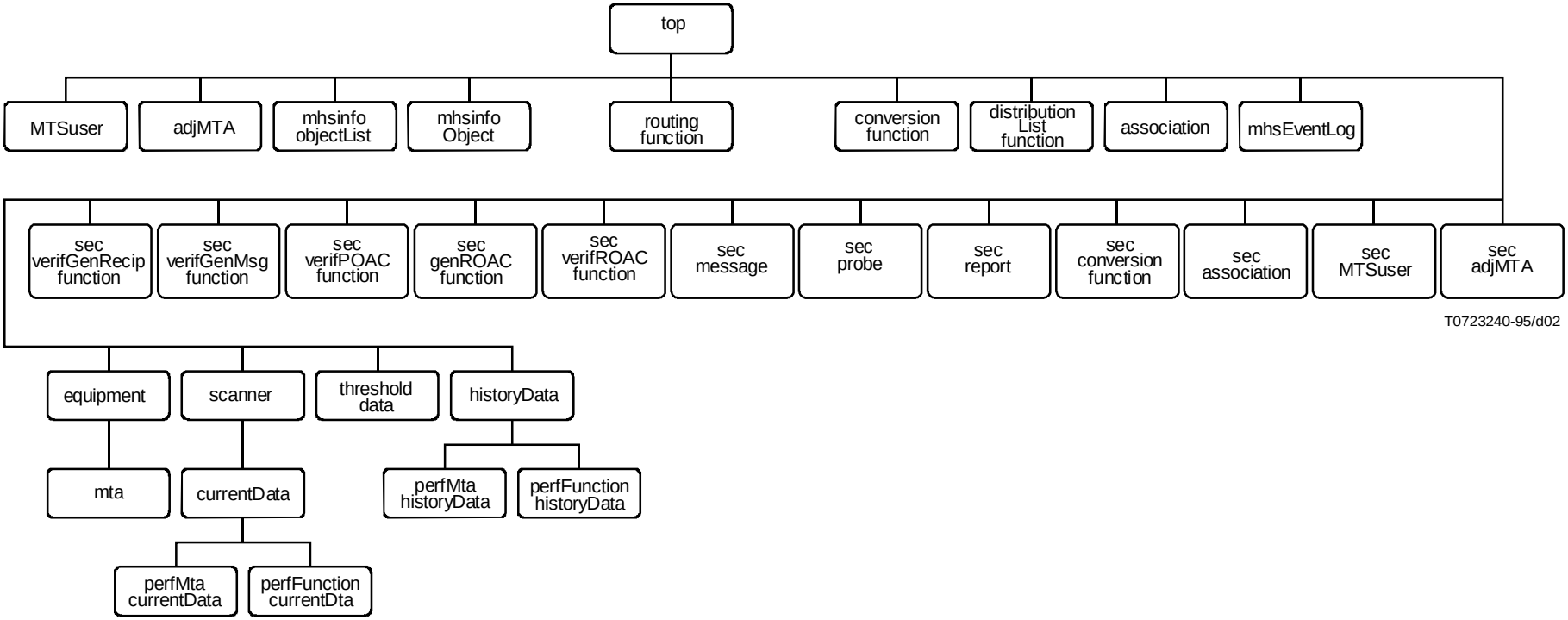

Figure 2 – Inheritance tree for MTA management

SECTION 3 – MANAGEMENT INFORMATION MODEL

9 Definition of managed object classes

This clause defines Managed Object classes for the management of an MTA.

9.1 AdjMTA

adjMTA MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
adjMTAPackage,
"Rec. M.3100":createDeleteNotificationsPackage,
"Rec. M.3100":stateChangeNotificationPackage,
"Rec. M.3100":attributeValueChangeNotificationPackage;

CONDITIONAL PACKAGES
dirServiceReferencePackage PRESENT IF "Directory is used for MHS and an mhs-message-transfer-agent directory object instance is present for the adjacent MTA";

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-adjMTA };

9.2 Association

association MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
associationPackage,
"Rec. M.3100":createDeleteNotificationsPackage,
"Rec. M.3100":stateChangeNotificationPackage;

CONDITIONAL PACKAGES
simpleCredentialsPackage PRESENT IF "Simple credentials are used for the current association";

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-association };

9.3 ConversionFunction

conversionFunction MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
conversionPackage,
StatesOfMtaFunctionPackage,
"Rec. M.3100":createDeleteNotificationsPackage,
"Rec. M.3100":stateChangeNotificationPackage,
"Rec. M.3100":processingErrorAlarmPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-conversionFunction };

9.4 DistributionListFunction

distributionListFunction MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
distributionListPackage,
StatesOfMtaFunctionPackage,
"Rec. M.3100":createDeleteNotificationsPackage,
"Rec. M.3100":stateChangeNotificationPackage,
"Rec. M.3100":processingErrorAlarmPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-distributionListFunction };

9.5 Mpr

mpr MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
mprPackage;

CONDITIONAL PACKAGES
mprProcessingControlPackage PRESENT IF " MPR processing control function is supported by the managed MTA.";

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-mpr };

9.6 MprList

mprList MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
mprListPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-mprList };

9.7 Mta

mta MANAGED OBJECT CLASS
DERIVED FROM "Rec. M.3100":equipment;

CHARACTERISED BY
mtaPackage,
"Rec. M.3100":createDeleteNotificationsPackage,
"Rec. M.3100":administrativeOperationalStatesPackage,
"Rec. M.3100":stateChangeNotificationPackage,
"Rec. M.3100":equipmentsEquipmentAlarmPackage;

CONDITIONAL PACKAGES
MdAssignedAlternateRecipient Package PRESENT IF " MD Alternate recipient assignment is supported by the managed MTA",
dirServiceReferencePackage PRESENT IF "Directory is used for MHS and an mhs-message-transfer-agent directory object instance is present for the adjacent MTA";

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-mta };

9.8 MtsUser

mtsUser MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
mtsUserPackage;
"Rec. M.3100":createDeleteNotificationsPackage,
"Rec. M.3100":stateChangeNotificationPackage,
"Rec. M.3100":attributeValueChangeNotificationPackage;

CONDITIONAL PACKAGES
defaultDeliveryControlsPackage PRESENT IF "delivery controls capability was subscribed by the MTS User",
simpleRedirectionPackage PRESENT IF "simpleRedirection was subscribed by the MTS User",
restrictedDeliveryPackage PRESENT IF "restricted delivery was subscribed by the MTS User",
dirServiceReferencePackage PRESENT IF "Directory is used for MHS and an mhs-user-agent directory object instance is present for the adjacent MTA";

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-mtsUser };

9.9 PerfFunctionCurrentData

perfFunctionCurrentData MANAGED OBJECT CLASS
DERIVED FROM "Recommendation Q.822":currentData;

CHARACTERISED BY
mtaFunctionStatisticsPackage;

CONDITIONAL PACKAGES
filterPackage PRESENT IF "Performance filtering is supported for the MTA function";

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-perfFunctionCurrentData };

9.10 PerfFunctionHistoryData

perfFunctionHistoryData MANAGED OBJECT CLASS
DERIVED FROM "Recommendation Q.822":historyData;

CHARACTERISED BY
mtaFunctionStatisticsPackage;

CONDITIONAL PACKAGES
filterPackage PRESENT IF "Performance filtering is supported for the MTA function";

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-perfFunctionHistoryData };

9.11 PerfMTACurrentData

perfMTACurrentData MANAGED OBJECT CLASS
DERIVED FROM "Recommendation Q.822":currentData;

CHARACTERISED BY
mtaStatisticsPackage;

CONDITIONAL PACKAGES
filterPackage PRESENT IF "Performance filtering is supported for the MTA function";

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-perfMTACurrentData };

9.12 PerfMTAHistoryData

perfMTAhistoryData MANAGED OBJECT CLASS
DERIVED FROM "Recommendation Q.822":historyData;

CHARACTERISED BY
mtaStatisticsPackage;

CONDITIONAL PACKAGES
filterPackage PRESENT IF "Performance filtering is supported for the MTA function";

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-perfMTAHistoryData };

9.13 RoutingFunction

routingFunction MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
routingPackage,
"Rec. M.3100":stateChangeNotificationPackage;
"Rec. M.3100":processingErrorAlarmPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-routingFunction };

9.14 SecAdjMTA

```
secAdjMTA MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
    secAdjMTAPackage,
    "Rec. M.3100":createDeleteNotificationsPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-secAdjMTA };
```

9.15 SecAssociation

```
secAssociation MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
    secAssociationPackage,
    "Rec. M.3100":createDeleteNotificationsPackage,
    SecurityAlarmPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-secAssociation };
```

9.16 SecConversion

```
secConversion MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
    secConversionPackage,
    StatesOfMtaFunctionPackage,
    "Rec. M.3100":createDeleteNotificationsPackage,
    "Rec. M.3100":stateChangeNotificationPackage,
    "Rec. M.3100":processingErrorAlarmPackage,
    SecurityAlarmPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-secConversion };
```

9.17 SecGenROACFunction

```
secGenROACFunction MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
    secGenROACFunctionPackage,
    StatesOfMtaFunctionPackage,
    "Rec. M.3100":createDeleteNotificationsPackage,
    "Rec. M.3100":stateChangeNotificationPackage,
    "Rec. M.3100":processingErrorAlarmPackage
    SecurityAlarmPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-secGenROACFunction };
```

9.18 SecMessage

```
secMessage MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
    secMessagePackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-secMessage };
```

9.19 SecMtsUser

secMtsUser MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
secMtsUserPackage,
"Rec. M.3100":createDeleteNotificationsPackage;

CONDITIONAL PACKAGES
secureRedirectionPackage PRESENT IF "secureRedirection service was subscribed by the MTS User",
"Rec. M.3100":createDeleteNotificationsPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-secMtsUser };

9.20 SecProbe

secProbe MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
secProbePackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-secProbe };

9.21 SecReport

secReport MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
secReportPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-secReport};

9.22 SecVerifGenMsgFunction

secVerifGenMsgFunction MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
SecVerifGenMsgFunctionPackage,
StatesOfMtaFunctionPackage,
"Rec. M.3100":createDeleteNotificationsPackage,
"Rec. M.3100":stateChangeNotificationPackage,
"Rec. M.3100":processingErrorAlarmPackage,
SecurityAlarmPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-SecVerifGenMsgFunction };

9.23 SecVerifGenRecipFunction

secVerifGenRecipFunction MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
SecVerifGenRecipFunctionPackage,
StatesOfMtaFunctionPackage,
"Rec. M.3100":createDeleteNotificationsPackage,
"Rec. M.3100":stateChangeNotificationPackage,
"Rec. M.3100":processingErrorAlarmPackage,
SecurityAlarmPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-SecVerifGenRecipFunction};

9.24 SecVerifMOACFunction

```
SecVerifMOACFunction MANAGED OBJECT CLASS
    DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
    SecVerifMOACFunctionPackage,
    StatesOfMtaFunctionPackage,
    "Rec. M.3100":createDeleteNotificationsPackage,
    "Rec. M.3100":stateChangeNotificationPackage,
    "Rec. M.3100":processingErrorAlarmPackage,
    SecurityAlarmPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-SecVerifMOACFunction };
```

9.25 SecVerifPOACFunction

```
SecVerifPOACFunction MANAGED OBJECT CLASS
    DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
    SecVerifPOACFunctionPackage,
    StatesOfMtaFunctionPackage,
    "Rec. M.3100":createDeleteNotificationsPackage,
    "Rec. M.3100":stateChangeNotificationPackage,
    "Rec. M.3100":processingErrorAlarmPackage,
    SecurityAlarmPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-SecVerifPOACFunction };
```

9.26 SecVerifROACFunction

```
SecVerifROACFunction MANAGED OBJECT CLASS
DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;

CHARACTERISED BY
    SecVerifROACFunctionPackage,
    StatesOfMtaFunctionPackage,
    "Rec. M.3100":createDeleteNotificationsPackage,
    "Rec. M.3100":stateChangeNotificationPackage,
    "Rec. M.3100":processingErrorAlarmPackage,
        SecurityAlarmPackage;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-moc-SecVerifROACFunction };
```

10 Definitions of packages

This clause specifies package definitions for the Managed Object class definitions of clause 9.

10.1 AdjMTAPackage

```
adjMTAPackage PACKAGE
BEHAVIOUR       adjMTABehaviour,
                creationAndDeletionNotificationBehaviour,
                administrativeStateChangeNotificationBehaviour,
                attributeValueChangeNotificationBehaviour;

ATTRIBUTES
    "Rec X.721 | ISO/IEC 10165-2":administrativeState  GET-REPLACE,
    adjMTAAccessPointAddress     GET-REPLACE,
    adjMTAGlobalDomainId  GET-REPLACE,
    adjMTAMaxMessageSize  GET-REPLACE,
    adjMtaName            GET,
    adjMTAPossibleConversions     GET-REPLACE ADD-REMOVE,
    adjMTASimpleCredentialsGET-REPLACE,
    adjMTASupportedApplicationContexts     GET-REPLACE,
```

```
    bilateralDeferral              GET-REPLACE,
    localMTAMaxMessageSize         GET-REPLACE,
    localMTASimpleCredentials      GET-REPLACE,
    waitTimeToRelease              GET-REPLACE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-adjMTAPackage };

adjMTABehaviour BEHAVIOUR
DEFINED AS
    "The AdjMTA Managed Object class describes the information required to establish an association and exchange MPR
    with an adjacent MTA. For each adjacent MTA of the managed MTA, an instance of this class shall be created. An
    AdjMTA object instance is named by the adjMtaName attribute.";
creationAndDeletionNotificationBehaviour BEHAVIOUR
DEFINED AS
    "An object creation or object deletion notification shall be generated at the creation and deletion of the object instance.";

administrativeStateChangeNotificationBehaviour BEHAVIOUR
DEFINED AS
    "A state change notification is emitted when the administrative state attribute changes in value.";

AttributeValueChangeNotificationBehaviour BEHAVIOUR
DEFINED AS
    "An attribute change notification is emitted when any of the attributes change in value.";
```

10.2 Association Package

```
associationPackage PACKAGE
BEHAVIOUR           associationBehaviour,
                    associationCreationDeletionBehaviour,
                    creationAndDeletionNotificationBehaviour,
                    operationalStateChangeNotificationBehaviour,
                    usageStateChangeNotificationBehaviour;

ATTRIBUTES
    "Rec X.721| ISO/IEC 10165-2":operationalState      GET,
    "Rec X.721 | ISO/IEC 10165-2":usageState      GET,
    applicationContext          GET,
    associationInitiator        GET,
    associationObjectInstanceId     GET,
    creationTime                GET,
    initiatorAccessPointAddress     GET,
    responderAccessPointAddress     GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-associationPackage };

associationBehaviour BEHAVIOUR
DEFINED AS
    "The association managed object maintains dynamic information on an association established with the managed MTA.
    As several associations can be established at the same time between the managed MTA and an MtsUser, several
    association object instances can exist at the same time. An association object instance is named by the
    associationObjectInstanceId attribute.";

associationCreationDeletionBehaviour BEHAVIOUR
DEFINED AS
    "An association object instance is created each time an association is established with the managed MTA. An association
    object instance may also be created for a rejected attempt to establish an association. An association object instance need
    not be deleted when the corresponding association is released.
    The operational state attribute is set to enable if the association request was accepetd. The operational state attribute is set
    to disable if the association request was rejected.
    The usage state attribute is set to active at the creation of an association object instance. The usage state attribute is set to
    idle when the association is normaly released.
    The usage state attribute is set to idle and the operational state attribute is set to disable when the association is abnormaly
    released";

operationalStateChangeNotificationBehaviour BEHAVIOUR
DEFINED AS
    "A state change notification is emitted when the operational state attribute changes in value.";

usageStateChangeNotificationBehaviour BEHAVIOUR
DEFINED AS
    "A state change notification is emitted when the usage state attribute changes in value.";
```

10.3 Conversion Package

```
conversionPackage PACKAGE
BEHAVIOUR       conversionBehaviour,
                creationAndDeletionNotificationBehaviour,
                administrativeStateChangeNotificationBehaviour,
                operationalStateChangeNotificationBehaviour,
                usageStateChangeNotificationBehaviour,
                processingErrorAlarmBehaviour;

ATTRIBUTES
    contentTypesSupported     GET,
    conversionFunctionObjectInstanceId GET,
    conversionType            GET,
    informationLossSuspected  GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-conversionPackage };

conversionBehaviour BEHAVIOUR
DEFINED AS
    "The MTA capability to provide a conversion of a specific type (e.g. from IA5Text to TTX) is called a Conversion
    function. This function is invoked each time a conversion of the corresponding type is performed by the managed MTA. A
    ConversionFunction Object instance shall be created for each type of conversion supported by the managed MTA. A
    conversion object instance is named by the conversionFunctionObjectInstanceId attribute.";

processingErrorAlarmBehaviour BEHAVIOUR
DEFINED AS
    "A processing error alarm notification shall be emitted when the entity experiences any of the processing alarms
    conditions defined in CCITT Rec. X.733 | ISO/IEC 10164-4 (e.g. storage capacity problem, version mismatch, corrupt
    data, software error, underlying ressource unavailable).";
```

10.4 DefaultDeliveryControls Package

```
defaultDeliveryControlsPackage PACKAGE
BEHAVIOUR defaultDeliveryControlsPackageBehaviour;

ATTRIBUTES
    defaultPermissibleOperations    GET-REPLACE ADD-REMOVE,
    defaultPermissibleLowestPriority    GET-REPLACE,
    defaultPermissibleEITs    GET-REPLACE ADD-REMOVE,
    defaultPermissibleContentTypes    GET-REPLACE, ADD-REMOVE
    defaultPermissibleMaxContentLength    GET-REPLACE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-defaultDeliveryControlsPackage };

defaultDeliveryControlsPackageBehaviour BEHAVIOUR
DEFINED AS
    "If the delivery control operation is supported by the MTS User, this package describes default delivery control
    information. This information may be changed by an MTS User abstract service operation or by specific management
    actions of the MHS system manager.";
```

10.5 DirServiceReference Package

```
dirServiceReferencePackage PACKAGE
BEHAVIOUR dirServiceReferencePackageBehaviour;

ATTRIBUTES
    directoryName             GET-REPLACE,
REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-dirServiceReferencePackage };

dirServiceReferencePackageBehaviour BEHAVIOUR
DEFINED AS
"This package consist of information required for using a Directory service (e.g. Recommendation X.500).";
```

10.6 DistributionList Package

```
distributionListPackage PACKAGE
BEHAVIOUR       distributionListBehaviour,
                creationAndDeletionNotificationBehaviour,
                administrativeStateChangeNotificationBehaviour,
                operationalStateChangeNotificationBehaviour,
                usageStateChangeNotificationBehaviour,
                processingErrorAlarmBehaviour;

ATTRIBUTES
    distributionListObjectInstanceId    GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-distributionListPackage };

distributionListBehaviour BEHAVIOUR
DEFINED AS
    "The MTA capability to expand distribution lists is called the D.L. Expansion function. This function is invoked each time
    a Distribution list is expanded by the managed MTA. If the managed MTA can perform the D.L. Expansion function, a
    distributionList object instance shall be created. One instance of the DistributionList object class exists for one managed
    MTA which supports D.L Expansion. The distributionListObjectInstanceId attribute is used to name a distributionList
    object instance.";
```

10.7 Filter Package

```
filterPackage PACKAGE
BEHAVIOUR filterBehaviour;

ATTRIBUTES
    lastAdjMTAName          GET-REPLACE,
    nextAdjMTAName          GET-REPLACE,
    priorityList            GET-REPLACE ADD-REMOVE,
    typeOfMpr               GET-REPLACE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-filterPackage };

filterBehaviour BEHAVIOUR
DEFINED AS
    "This package discriminates for which kind of MPR statistics should be gathered. The TypeOfMpr attribute enables the
    MHS system manager to make a distinction between a message, probe and report. The PriorityList attribute enables the
    MHS system manager to make a distinction between urgent, normal and non-urgent. The nextAdjMTAName attribute
    enables the MHS system manager to make a selection on the next MTA destination, if any, of the MPR. The
    lastAdjMTAName attribute enables the MHS system manager to make a selection on the last MTA destination, if any, of
    the MPR. This information is not changed except under specific management actions of the MHS system manager.";
```

10.8 MdAssignedAlternateRecipient Package

```
mdAssignedAlternateRecipientPackage PACKAGE
BEHAVIOUR MdAssignedAlternateRecipientPackageBehaviour;

ATTRIBUTES
    md_Assigned_Alternate_Recipient    GET-REPLACE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-mdAssignedAlternateRecipientPackage };

MdAssignedAlternateRecipientPackageBehaviour BEHAVIOUR
DEFINED AS
    "If the MD alternate recipient assignment service is supported by the managed MTA, the MdAssignedAlternateRecipient
    package indicates the MTS User Name (e.g. the OR-name) of an alternate recipient which may be assigned by the
    managed MTA.This information is not changed, except under specific management actions of the MHS system manager.";
```

10.9 Mpr Package

```
mprPackage PACKAGE
BEHAVIOUR mprBehaviour;

ATTRIBUTES
    arrivalTime             GET,
    contentType             GET,
    deferalTime             GET,
    eits                    GET,
```

lastAdjMTA Name GET,
messageContentSize GET,
mprObjectInstanceId GET,
mtsIdentifier GET,
nextAdjMTA Name GET,
originatorName GET,
priority GET,
processingState GET,
processingSummary GET,
recipientsNames GET,
typeOfMpr GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-mprPackage };

mprBehaviour BEHAVIOUR
DEFINED AS
"The mpr managed object class represents a message, probe or report in the managed MTA. A mpr object instance is created on the request of the MHS system manager whenever he requires more information then listed in the mprList object instance. A mpr object instance enables the MHS system manager to control and modify the processing of a specific mpr. A mpr object instance is named by the mprObjectInstanceId attribute.";.

10.10 MprList Package

mprListPackage PACKAGE
BEHAVIOUR mprListBehaviour;

ATTRIBUTES
mprInfo GET-REPLACE ADD-REMOVE,
mprListObjectInstanceId GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-mprListPackage };

mprListBehaviour BEHAVIOUR
DEFINED AS
"The mprList Managed Object class represents a list of the message, probes and reports currently in process in the managed MTA. A mprList object instance shall be created at the creation of the MTA object instance. One instance of the mprList object class exists for one managed MTA. An MPR item is removed from the mprInfo attribute when the MHS System manager determines that the MTS cannot deliver a message or a report or affirm a probe. A mprList object instance is named by the mprListObjectInstanceId attribute.";

10.11 MprProcessingControl Package

mprProcessingControlPackage PACKAGE
BEHAVIOUR mprProcessingControlBehaviour;

ATTRIBUTES
forcedExpiryDuration GET-REPLACE,
forcedProcessingPriority GET-REPLACE,
heldByManager GET-REPLACE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-mprProcessingControlPackage };

mprProcessingControlBehaviour BEHAVIOUR
DEFINED AS
"This package enables the MHS system manager to control the processing of an mpr. This information is not changed except under specific management actions of the MHS system manager.";

10.12 Mta Package

mtaPackage PACKAGE
BEHAVIOUR mtaBehaviour,
mtacreationBehaviour,
creationAndDeletionNotificationBehaviour,
operationalStateChangeNotificationBehaviour,
usageStateChangeNotificationBehaviour,
equipmentsEquipmentAlarmBehaviour;

ATTRIBUTES
defaultNonUrgentMprExpiryDuration GET-REPLACE,
defaultNormalMprExpiryDuration GET-REPLACE,
defaultUrgentMprExpiryDuration GET-REPLACE,

globalDomainId GET-REPLACE,
maxAdjMTAInboundAssocs GET-REPLACE,
maxAdjMTAOutboundAssocs GET-REPLACE,
maxMtsUserInboundAssocs GET-REPLACE,
maxMtsUserOutboundAssocs GET-REPLACE,
mtaName GET-REPLACE,
supportedApplicationContexts GET-REPLACE ADD-REMOVE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-mtaPackage };

mtaBehaviour BEHAVIOUR
DEFINED AS
"The MTA Managed Object class describes general MTA management information in order to provide the management of the MTA overall operability and availability. This information is not changed except under specific management actions of the MHS system manager. One instance of this object class shall be created for each managed MTA within the MIS management domain. The mta Managed Object class is inherited from the Managed Object class equipment which is defined in Recommendation M.3100. The following packages of the equipment object class shall be provided:

- **createDeleteNotificationPackage**
- **stateChangeNotificationPackage**
- **administrativeOperationalStatePackage**
- **equipmentsEquipmentAlarmPackage**

The following packages of the equipment object class may be provided:

- **vendorNamePackage**
- **versionPackage**
- **locationNamePackage**
- **currentProblemListPackage**

The equipmentId attribute is used to name an mta object instance.";

mtaCreationBehaviour BEHAVIOUR
DEFINED AS
"At the creation of an MTA managed object class, following subordinate objects shall be created:

- **mprList**
- **routingFunction.";**

equipmentsEquipmentAlarmBehaviour BEHAVIOUR
DEFINED AS
"A processing error alarm notification shall be emitted when the entity experiences any of the processing alarms conditions defined in CCITT Rec. X.733 | ISO/IEC 10164-4 (e. g. storage capacity problem, version mismatch, corrupt data, software error, underlying ressource unavailable).";

10.13 MtaFunctionStatistics Package

mtaFunctionStatisticsPackage PACKAGE
BEHAVIOUR mtaFunctionStatisticsBehaviour;

ATTRIBUTES
maxFunctionProcessingTime GET,
maxSizeMprPassingFunction GET,
meanFunctionProcessingTime GET,
meanSizeMprPassingFunction GET,
minFunctionProcessingTime GET,
minSizeMprPassingFunction GET,
nrOfInvocations GET,
nrOfRejectedInvocation GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-mtaFunctionStatisticsPackage };

mtaFunctionStatisticsBehaviour BEHAVIOUR
DEFINED AS
"This package defines the performance parameters for the functionality of the Network Element (e.g. MTA). The functions are routing, conversion, and distribution list expansion.";

10.14 MtaStatistics Package

```
mtaStatisticsPackage PACKAGE
BEHAVIOUR mtaStatisticsBehaviour;

ATTRIBUTES
    maxMTAResponseTime     GET,
    maxSizeMprDelivered    GET,
    maxSizeMprSubmitted    GET,
    maxSizeMprTransferredIn    GET,
    maxSizeMprTransferredOut   GET,
    meanMTAResponseTime    GET,
    meanNbOfStoredMpr      GET,
    meanSizeMprDelivered   GET,
    meanSizeMprSubmitted   GET,
    meanSizeMprTransferredIn   GET,
    meanSizeMprTransferredOut  GET,
    meanStorageOccupied    GET,
    minMTAResponseTime     GET,
    minSizeMprDelivered    GET,
    minSizeMprSubmitted    GET,
    minSizeMprTransferredIn GET,
    minSizeMprTransferredOut   GET,
    nrOfMprDeferred        GET,
    nrOfMprDelivered       GET,
    nrOfRecipientsProcessed GET,
    nrOfMprRedirected      GET,
    nrOfMprRejected        GET,
    nrOfMprSubmitted       GET,
    nrOfMprTransferredIn   GET,
    nrOfMprTransferredOut  GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-mtaStatisticsPackage };

mtaStatisticsBehaviour BEHAVIOUR
DEFINED AS
    "This package defines the performance parameters of the MTA.";
```

10.15 MtsUser Package

```
mtsUserPackage PACKAGE
BEHAVIOUR       mtsUserPackageBehaviour,
                creationAndDeletionNotificationBehaviour,
                administrativeStateChangeNotificationBehaviour,
                attributeValueChangeNotificationBehaviour;

ATTRIBUTES
    "Rec X.721 | ISO/IEC 10165-2":administrativeState  GET-REPLACE,
    colocated                  GET,
    LocalMTASimpleCredentials  GET-REPLACE,
    mtsUserAccessPointAddress  GET-REPLACE,
    mtsUserDeliverableContentTypes     GET-REPLACE ADD-REMOVE,
    mtsUserDeliverableEits     GET-REPLACE ADD-REMOVE,
    mtsUserDeliverableMaxContentLength     GET-REPLACE,
    mtsUserName                GET-REPLACE,
    mtsUserObjectInstanceId    GET,
    mtsUserPreferredDeliveryMethod     GET-REPLACE,
    mtsUserSimpleCredentials   GET-REPLACE,
    mtsUserSupportedApplicationContexts     GET-REPLACE ADD-REMOVE,
    mtsUserType                GET-REPLACE,
    waitTimeToRelease          GET-REPLACE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-mtsUserPackage };

mtsUserBehaviour BEHAVIOUR
DEFINED AS
    "The mtsUser Managed Object class describes the information required to establish an association and exchange MPR
    with an mtsUser of the managed MTA. For each MTS User of the managed MTA, an instance of this class shall be created.
    A mtsUser object instance is named by the attribute mtsUserObjectInstanceId.";
```

10.16 RestrictedDelivery Package

restrictedDeliveryPackage PACKAGE
BEHAVIOUR restrictedDeliveryBehaviour;

ATTRIBUTES
permissibleMessages GET-REPLACE ADD-REMOVE
disallowedMessages GET-REPLACE ADD-REMOVE

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-restrictedDeliveryPackage };

restrictedDeliveryBehaviour BEHAVIOUR
DEFINED AS
"If restricted delivery was subscribed by the MTS User, this package provides the others MTS Users from whom the MTS User is willing (or unwilling) to receive messages.";

10.17 Routing Package

routingPackage PACKAGE
BEHAVIOUR routingBehaviour,
operationalStateChangeNotificationBehaviour,
usageStateChangeNotificationBehaviour,
processingErrorAlarmBehaviour;

ATTRIBUTES
routingFunctionObjectInstanceId GET,
"Rec X.721 | ISO/IEC 10165-2":operationalState GET,
"Rec X.721 | ISO/IEC 10165-2":usageState GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-routingPackage };

routingBehaviour BEHAVIOUR
DEFINED AS
"The MTA capability to determine routing actions for each of a message or probes recipients for which the managed MTA is responsible is called the Routing function. This function is invoked each time a routing instruction for a single recipient of a message, a report or a probe is generated by the managed MTA. A routingFunction object instance shall be created at the creation of the MTA object instance. One instance of the routingFunction object class exists for one managed MTA. The routingFunctionObjectInstanceId attribute is used to name a RoutingFunction object instance.";

10.18 SecAdjMTA Package

secAdjMTAPackage PACKAGE
BEHAVIOUR secAdjMTAPackageBehaviour,
creationAndDeletionNotificationBehaviour;

ATTRIBUTES
adjMTAStrongCredentials GET-REPLACE,
localMTAStrongCredentials GET-REPLACE,
secAdjMTAObjectInstanceId GET,
securityLabels GET-REPLACE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secAdjMTAPackage};

secAdjMTABehaviour BEHAVIOUR
DEFINED AS
"The SecAdjMTA object class provides information to build a secure association with an adjacent MTA. This information is not changed except under specific management actions of the MHS system manager. For each adjacent MTA of the managed mta for which secure associations may be established, an instance of this class shall be created. Zero or one instance of the secAdjMTA object class exists for each adjacent MTA of the managed MTA. The secAdjMTAObjectInstanceId attribute is used to name a SecAdjMTA object instance";

10.19 SecAssociation Package

secAssociationPackage PACKAGE
BEHAVIOUR secAssociationPackageBehaviour,
creationAndDeletionNotificationBehaviour,
securityAlarmBehaviour;

ATTRIBUTES
initiatorSecurityContext GET-REPLACE,
initiatorStrongCredentials GET-REPLACE,

responderStrongCredentials GET-REPLACE,
secAssociationObjectInstanceId GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secAssociationPackage };

secAssociationPackageBehaviour BEHAVIOUR
DEFINED AS
"The secAssociation managed object maintains dynamic information on a secure association established with the managed MTA. A secAssociation object instance shall be created each time a secure association is established with the managed MTA. The secAssociationObjectInstanceId attribute is used to name a SecAssociation object instance.";

securityAlarmBehaviour BEHAVIOUR
DEFINED AS
"A security error alarm notification shall be emitted when the entity experiences any of the security alarms conditions defined in CCITT Rec. X.736 | ISO/IEC 10164-7 (e. g. integrity violation, operational violation, physical violation, security service or mechanism violation, time domain violation).";

10.20 SecConversion Package

secConversionPackage PACKAGE
BEHAVIOUR secConversionPackageBehaviour,
creationAndDeletionNotificationBehaviour,
administrativeStateChangeNotificationBehaviour,
operationalStateChangeNotificationBehaviour,
usageStateChangeNotificationBehaviour,
processingErrorAlarmBehaviour,
securityAlarmBehaviour;

ATTRIBUTES
conversionCredentials GET-REPLACE,
conversionSecurityContext GET-REPLACE,
conversionSecurityLabels GET-REPLACE ADD-REMOVE,
secConversionObjectInstanceId GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secConversionPackage };

secConversionPackageBehaviour BEHAVIOUR
DEFINED AS
"The MTA capability to provide a secure conversion of a specific type (e.g. from IA5Text to TTX) is called a Secure Conversion function. This function is invoked each time a secure conversion of the corresponding type is performed by the managed MTA. A secConversionFunction Object instance shall be created for each type of secure conversion supported by the managed MTA.The secConversionObjectInstanceId attribute is used to name a SecConversion object instance.";

10.21 SecGenROACFunction Package

secGenROACFunctionPackage PACKAGE
BEHAVIOUR secGenROACFunctionPackageBehaviour,
creationAndDeletionNotificationBehaviour,
administrativeStateChangeNotificationBehaviour,
operationalStateChangeNotificationBehaviour,
usageStateChangeNotificationBehaviour,
processingErrorAlarmBehaviour,
securityAlarmBehaviour;

ATTRIBUTES
reportOriginatorCertificate GET-REPLACE ADD-REMOVE,
reportROACAlg GET-REPLACE ADD-REMOVE,
secGenROACFunctionId GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secGenROACFunctionPackage};

secGenROACFunctionPackageBehaviour BEHAVIOUR
DEFINED AS
"The SecGenROACFunction object class enables the managed mta to generate the report-origin-authentication-check in a secure report. If The managed MTA is capable of generating ROAC, a SecGenROACFunction object instance holds information for the generation of a secure report on reception and relay. The secGenROACFunctionId attribute is used to name a SecGenROAC object instance.";

10.22 SecMessage Package

```
secMessagePackage PACKAGE
BEHAVIOUR secMessagePackageBehaviour;

ATTRIBUTES
    contentIntegrityCheck       GET,
    messageOriginatorCertificate    GET,
    messageOriginAuthenticationCheck  GET,
    messageSecurityLabel        GET,
    messageToken                GET,
    proofOfDeliveryRequest      GET,
    secMessageObjectInstanceId      GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secMessagePackage};

secMessageBehaviour BEHAVIOUR
DEFINED AS
    "The SecMessage object class enables the MHS system manager to secure message in the managed MTA. The
    secMessageObjectInstanceId attribute is used to name a SecMessage object instance.";
```

10.23 SecMtsUser Package

```
secMtsUserPackage PACKAGE
BEHAVIOUR           secMtsUserPackageBehaviour,
                    creationAndDeletionNotificationBehaviour;

ATTRIBUTES
    localMTAStrongCredentials     GET-REPLACE,
    mtsUserStrongCredentials GET-REPLACE,
    secMtsUserObjectInstanceId      GET,
    securityLabels              GET-REPLACE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secMtsUserPackage};

secMtsUserBehaviour BEHAVIOUR
DEFINED AS
    "The secMtsUser object class provides information to build a secure association with an MtsUser of the managed MTA.
    The secMtsUserObjectInstanceId attribute is used to name a SecMtsUser object instance.";
```

10.24 SecProbe Package

```
secProbePackage PACKAGE
BEHAVIOUR secProbePackageBehaviour;

ATTRIBUTES
    probeOriginatorCertificate      GET,
    probeOriginAuthenticationCheck      GET,
    probeSecurityLabel          GET,
    secProbeObjectInstanceId  GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secProbePackage};

secProbePackageBehaviour BEHAVIOUR
DEFINED AS
    "The SecProbe object class enables the MHS system manager to secure probe in the managed MTA. The
    secProbeObjectInstanceId attribute is used to name a SecProbe object instance.";
```

10.25 SecReport Package

```
secReportPackage PACKAGE
BEHAVIOUR secReportPackageBehaviour;

ATTRIBUTES
    proofOfDelivery             GET,
    recipientCertificate        GET,
```

```
    reportOriginAuthenticationCheck     GET,
    reportSecurityLabel         GET,
    secReportObjectInstanceId       GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secReportPackage};

SecReportPackageBehaviour BEHAVIOUR
DEFINED AS
    "The SecReport object class enables the MHS system manager to secure report in the managed MTA. The
    secReportObjectInstanceId attribute is used to name a SecReport object instance.";
```

10.26 SecureRedirection Package

```
secureRedirectionPackage PACKAGE
BEHAVIOUR secureRedirectionPackageBehaviour;

ATTRIBUTES
    redirections                GET-REPLACE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secureRedirectionPackage };

secureRedirectionPackageBehaviour BEHAVIOUR
DEFINED AS
    "The attribute redirections indicates to which UA the messages, bases on the associated security labels, the messages
    should be send.";
```

10.27 SecurityAlarmPackage

```
SecurityAlarmPackage PACKAGE
NOTIFICATIONS
    "Rec. X.721: integrityViolation,
    "Rec. X.721: operationalViolation,
    "Rec. X.721: operationalViolation,
    "Rec. X.721: physicalViolation,
    "Rec. X.721: securityServiceOrMechanismViolation,
    "Rec. X.721: TimeDomainViolation;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-SecurityAlarmPackage };
```

10.28 SecVerifGenMsgFunction Package

```
secVerifGenMsgFunctionPackage PACKAGE
BEHAVIOUR       secVerifGenMsgFunctionPackageBehaviour,
                creationAndDeletionNotificationBehaviour,
                administrativeStateChangeNotificationBehaviour,
                operationalStateChangeNotificationBehaviour,
                usageStateChangeNotificationBehaviour,
                processingErrorAlarmBehaviour,
                securityAlarmBehaviour;

ATTRIBUTES
    messageEncAlg               GET-REPLACE ADD-REMOVE,
    messageMOACAlg              GET-REPLACE ADD-REMOVE,
    messageOriginatorCertificate    GET-REPLACE ADD-REMOVE,
    newMessageEncAlg            GET-REPLACE ADD-REMOVE,
    newMessageMOACAlg       GET-REPLACE ADD-REMOVE,
    newMessageOriginatorCertificate     GET-REPLACE ADD-REMOVE,
    secVerifGenMsgObjectInstanceId      GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secVerifGenMsgFunctionPackage};

secVerifGenMsgFunctionPackageBehaviour BEHAVIOUR
DEFINED AS
    "The SecVerifGenMsgFunction object class enables the verification and generation of new security attributes within
    the MTA. For example, for secure distributionListExpansion and secure conversion. The
    secVerifGenMsgObjectInstanceId attribute is used to name a SecVerifGenMsgFunction object instance.";
```

10.29 SecVerifGenRecipFunction Package

secVerifGenRecipFunctionPackage PACKAGE
BEHAVIOUR secVerifGenRecipFunctionPackageBehaviour,
creationAndDeletionNotificationBehaviour,
administrativeStateChangeNotificationBehaviour,
operationalStateChangeNotificationBehaviour,
usageStateChangeNotificationBehaviour,
processingErrorAlarmBehaviour,
securityAlarmBehaviour;

ATTRIBUTES
newRecipientCicAlg GET-REPLACE ADD-REMOVE,
newRecipientName GET-REPLACE,
newRecipientTokenAlg GET-REPLACE ADD-REMOVE,
newRecipientTokenEncAlg GET-REPLACE ADD-REMOVE,
newRecipientTokenSigAlg GET-REPLACE ADD-REMOVE,
recipientCicAlg GET-REPLACE ADD-REMOVE,
recipientName GET-REPLACE,
recipientTokenAlg GET-REPLACE ADD-REMOVE,
recipientTokenEncAlg GET-REPLACE ADD-REMOVE,
recipientTokenSigAlg GET-REPLACE ADD-REMOVE,
SecVerifGenRecipObjectInstanceId GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secVerifGenRecipFunctionPackage};

secVerifGenRecipFunctionPackageBehaviour BEHAVIOUR
DEFINED AS
"The SecVerifGenRecipFunction object class enables the verification and generation of new security attributes within the MTA. For example, for secure distributionListExpansion and secure conversion. The SecVerifGenRecipObjectInstanceId attribute is used to name a SecVerifGenRecipFunction object instance.";

10.30 SecVerifMOACFunction Package

secVerifMOACFunctionPackage PACKAGE
BEHAVIOUR secVerifMOACFunctionPackageBehaviour,
creationAndDeletionNotificationBehaviour,
administrativeStateChangeNotificationBehaviour,
operationalStateChangeNotificationBehaviour,
usageStateChangeNotificationBehaviour,
processingErrorAlarmBehaviour,
securityAlarmBehaviour;

ATTRIBUTES
messageOriginatorCertificate GET-REPLACE ADD-REMOVE,
secVerifMOACFunctionObjectInstanceId GET,
messageMOACAlg GET-REPLACE ADD-REMOVE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secVerifMOACFunctionPackage};

secVerifMOACFunctionPackageBehaviour BEHAVIOUR
DEFINED AS
"The SecVerifMOACFunction object class enables the managed MTA to generate the message-origin-authentication-check in a secure message. An SecVerifMOACFunction object instance holds information for the verification of a secure message on reception and relay. The secVerifMOACFunctionObjectInstanceId attribute is used to name a SecVerifMOACFunction object instance.";

10.31 SecVerifPOACFunction Package

secVerifPOACFunctionPackage PACKAGE
BEHAVIOUR secVerifPOACFunctionPackageBehaviour,
creationAndDeletionNotificationBehaviour,
administrativeStateChangeNotificationBehaviour,
operationalStateChangeNotificationBehaviour,
usageStateChangeNotificationBehaviour,
processingErrorAlarmBehaviour,
securityAlarmBehaviour;

```
ATTRIBUTES
    secVerifPOACObjectInstanceId GET,
    probeOriginatorCertificate      GET-REPLACE ADD-REMOVE,
    probePOACAlg                    GET-REPLACE ADD-REMOVE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secVerifPOACFunctionPackage};

secVerifPOACFunctionPackageBehaviour BEHAVIOUR
DEFINED AS
    "The SecVerifPOACFunction object class enables the managed MTA to generate the probe-origin-authentication-check in
    a secure probe. An SecVerifPOACFunction object instance holds information for the verification of a secure probe on
    relay. The secVerifPOACObjectInstanceId attribute is used to name a SecVerifPOACFunction object instance.";
```

10.32 SecVerifROACFunction Package

```
secVerifROACFunctionPackage PACKAGE
BEHAVIOUR  secVerifROACFunctionPackageBehaviour,
           creationAndDeletionNotificationBehaviour,
           administrativeStateChangeNotificationBehaviour,
           operationalStateChangeNotificationBehaviour,
           usageStateChangeNotificationBehaviour,
           processingErrorAlarmBehaviour,
           securityAlarmBehaviour;

ATTRIBUTES
    reportOriginatorCertificate     GET-REPLACE ADD-REMOVE,
    reportROACAlg                   GET-REPLACE ADD-REMOVE,
    secVerifROACObjectInstanceId    GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-secVerifROACFunctionPackage};

secVerifROACFunctionPackageBehaviour BEHAVIOUR
DEFINED AS
    "The SecVerifROACFunction object class enables the managed MTA to generate the report-origin-authentication-check
    in a secure report. An SecVerifROACFunction object instance holds information for the verification of a secure report on
    relay and delivery. The secVerifROACObjectInstanceId attribute is used to name a SecVerifROACFunction object
    instance.";
```

10.33 SimpleCredentials Package

```
simpleCredentialsPackage PACKAGE
BEHAVIOUR simpleCredentialsBehaviour;

ATTRIBUTES
    initiatorSimpleCredentials GET-REPLACE,
    responderSimpleCredentials     GET-REPLACE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-simpleCredentialsPackage };

simpleCredentialsBehaviour BEHAVIOUR
DEFINED AS
    "If simple authentification is used during an association, this package provides the simple credentials of the initiator and
    responder of an association.";
```

10.34 SimpleRedirection Package

```
simpleRedirectionPackage PACKAGE
BEHAVIOUR simpleRedirectionPackageBehaviour;

ATTRIBUTES
    redirectionRecipient   GET-REPLACE;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-simpleRedirectionPackage };

simpleRedirectionPackageBehaviour BEHAVIOUR
DEFINED AS
    "If simple redirection was subscribed by the MTS User, this package provides a redirection address. If the redirection
    address has the value NULL, then redirection does not take place and the message is non-delivered.";
```

10.35 StatesOfMtaFunctionPackage

statesOfMtaFunctionPackagePACKAGE
BEHAVIOUR statesOfMtaFunctionPackageBehaviour;

ATTRIBUTES
"Rec X.721 | ISO/IEC 10165-2":administrativeState GET-REPLACE,
"Rec X.721 | ISO/IEC 10165-2":operationalState GET,
"Rec X.721 | ISO/IEC 10165-2":usageState GET;

REGISTERED AS { MhsMgntMTAObjectIdentifiers.id-package-statesOfMtaFunctionPackage };

statesOfMtaFunctionPackageBehaviour BEHAVIOUR
DEFINED AS
"This package provides the administrative state, operational state and usage state of an MTA function. These parameters are defined in CCITT Rec. X.731 | ISO/IEC 10164-2";

11 Definition of attributes

This clause defines attributes for the management of an MTA.

11.1 AdjMTAAccessPointAddress

adjMtaAccessPointAddress ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailAccessPointAddress;

MATCHES FOR EQUALITY;
BEHAVIOUR adjMtaAccessPointAddressBehaviour BEHAVIOUR

DEFINED AS
This attribute defines the access point address of the adjacent MTA. This attribute may have one of the possible values of a PSAP address MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic address' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-adjMtaAccessPointAddress };

11.2 AdjMTAGlobalDomainId

adjMtaGlobalDomainId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailGlobalDomainId;

MATCHES FOR EQUALITY;

BEHAVIOUR adjMtaGlobalDomainIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the value of the Global Domain Identifier used by the adjacent MTA to create MTS identifiers, Trace information elements and Internal trace information elements. This attribute may have one of the possible values of a global-domain-identifier MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic global domain identifier' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-adjMtaGlobalDomainId };

11.3 AdjMTAMaxMessageSize

adjMtaMaxMessageSize ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.SizeInOctets;

MATCHES FOR EQUALITY;

BEHAVIOUR adjMtaMaxMessageSizeBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the maximum size of messages from the managed MTA which can be processed by this adjacent MTA.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-adjMtaMaxMessageSize };

11.4 AdjMtaName

adjMtaName ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailMtaName;

MATCHES FOR EQUALITY;

BEHAVIOUR adjMtaNameBehaviour BEHAVIOUR
DEFINED AS

> **"This attribute identifies the name of the adjacent MTA which shall be provided by the managed MTA during association establishment. This attribute may have one of the possible values of an MTA-name MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MTA name' type may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;**

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-adjMtaName };

11.5 AdjMtaPossibleConversions

adjMtaPossibleConversions ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailConversionTypes;

MATCHES FOR SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR adjMtaPossibleConversionsBehaviour BEHAVIOUR
DEFINED AS

> **"This attribute may have one of the possible values of a set of possible conversion which are supported by the adjacent MTA. This attribute may have one of the possible values of a set of explicit-conversion MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic conversion type' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;**

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-adjMtaPossibleConversions };

11.6 AdjMTASimpleCredentials

adjMtaSimpleCredentials ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailSimpleCredentials;

MATCHES FOR EQUALITY;

BEHAVIOUR adjMtaSimpleCredentialsBehaviour BEHAVIOUR
DEFINED AS

> **"This attribute provides the simple password that can be used by the MTS User during association establishment for simple authentication of itself. This attribute may have one of the possible values of a password MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;**

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-adjMtaSimpleCredentials };

11.7 AdjMTAStrongCredentials

adjMtaStrongCredentials ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailStrongCredentials;

MATCHES FOR EQUALITY;

BEHAVIOUR adjMtaStrongCredentialsBehaviour BEHAVIOUR
DEFINED AS

> **"This attribute provides the strong credentials that can be used by the Adjacent MTA during association establishment for strong authentication of itself. This attribute may have one of the possible values of an initiator-bind-token and, optionally, an initiator-certificate MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic Strong Credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;**

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-adjMtaStrongCredentials };

11.8 AdjMtaSupportedApplicationContexts

adjMtaSupportedApplicationContexts ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ApplicationContexts;

MATCHES FOR EQUALITY;

BEHAVIOUR adjMtaSupportedApplicationContextsBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the MHS application contexts that are supported by the adjacent MTA.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-adjMtaSupportedApplicationContexts };

11.9 ApplicationContext

applicationContext ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ApplicationContext;

MATCHES FOR EQUALITY;

BEHAVIOUR applicationContextBehaviour BEHAVIOUR
DEFINED AS
"This attribute identifies the application context negotiated during association establishment.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-applicationContext };

11.10 ArrivalTime

arrivalTime ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.Time;

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR arrivalTimeBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the arrival time of the MPR in the managed MTA.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-arrivalTime };

11.11 AssociationInitiator

associationInitiator ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AssociationInitiator;

MATCHES FOR EQUALITY;

BEHAVIOUR associationInitiator Behaviour BEHAVIOUR
DEFINED AS
"This attribute defines who initiated the current association. The values can be local (i.e. the managed MTA) or remote.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-associationInitiator };

11.12 AssociationObjectInstanceId

associationObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR associationObjectInstanceId Behaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-associationObjectInstanceId };

11.13 BilateralDeferral

bilateralDeferral ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.BilateralDeferral;

MATCHES FOR EQUALITY;

BEHAVIOUR bilateralDeferralBehaviour BEHAVIOUR
DEFINED AS
"This attribute specifies whether a bilateral agreement exists between the managed MTA and the adjacent MTA for deferring messages. If an agreement exists the MPR will be deferred.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-bilateralDeferral };

11.14 Colocated

colocated ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.Colocated;

MATCHES FOR EQUALITY;

BEHAVIOUR colocatedBehaviour BEHAVIOUR
DEFINED AS
"This attribute indicates if the MTS User is collocated with the managed MTA.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-colocated };

11.15 ContentIntegrityCheck

contentIntegrityCheck ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ContentIntegrityCheck;

MATCHES FOR EQUALITY;

BEHAVIOUR contentIntegrityCheckBehaviour BEHAVIOUR
DEFINED AS
"This attribute indicates the integrity check of the content. This attribute may have one of the possible values of a content-integrity-check MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-contentIntegrityCheck };

11.16 ContentType

contentType ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ContentType;

MATCHES FOR EQUALITY;

BEHAVIOUR contentTypeBehaviour BEHAVIOUR
DEFINED AS
"This parameter provides the content type of the MPR. This parameter may have one of the possible value of a content-type MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-contentType };

11.17 ContentTypesSupported

contentTypesSupported ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ContentTypes;

MATCHES FOR SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR contentTypesSupportedBehaviour BEHAVIOUR
DEFINED AS
"This attribute indicates the message content types the Conversion function is able to convert. This attribute may have one of the possible values of a set of content-type MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-contentTypesSupported };

11.18 ConversionCredentials

conversionCredentials ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EmailCredentials;

MATCHES FOR EQUALITY;

BEHAVIOUR conversionCredentialsBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the credentials for the conversion. This attribute may have one of the possible values of a credentials MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-conversionCredentials };

11.19 ConversionFunctionObjectInstanceId

conversionFunctionObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR conversionFunctionObjectInstanceId Behaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-conversionFunctionObjectInstanceId };

11.20 ConversionSecurityContext

conversionSecurityContext ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.SecurityContext;

MATCHES FOR EQUALITY;

BEHAVIOUR conversionSecurityContext Behaviour BEHAVIOUR
DEFINED AS
"This attribute provides the security context for a secure conversion.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-conversionSecurityContext };

11.21 ConversionSecurityLabels

conversionSecurityLabels ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.SecurityLabels;

MATCHES FOR EQUALITY;

BEHAVIOUR conversionSecurityLabels Behaviour BEHAVIOUR
DEFINED AS
"This attribute provides the security labels for a secure conversion.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-conversionSecurityLabels };

11.22 ConversionType

conversionType ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailConversionType;

MATCHES FOR EQUALITY;

BEHAVIOUR conversionTypeBehaviour BEHAVIOUR
DEFINED AS
"This attribute indicates the type of conversion provided by the Conversion function. This attribute may have one of the possible values of an explicit-conversion MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic conversion type' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-conversionType };

11.23 CreationTime

creationTime ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.Time;

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR creationTimeBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the time the Managed Object instance has been created.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-creationTime };

11.24 DefaultNonUrgentMprExpiryDuration

defaultNonUrgentMprExpiryDuration ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.DurationInSeconds;

MATCHES FOR EQUALITY;

BEHAVIOUR defaultNonUrgentMprExpiryDurationBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the default duration in seconds from the arrival time of a non-urgent MPR after which the managed MTA determines that the MTS cannot deliver the message or report or affirm the probe.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-defaultNonUrgentMprExpiryDuration };

11.25 DefaultNormalMprExpiryDuration

defaultNormalMprExpiryDuration ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.DurationInSeconds;

MATCHES FOR EQUALITY;

BEHAVIOUR defaultNormalMprExpiryDurationBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the default duration in seconds from the arrival time of a normal MPR after which the managed MTA determines that the MTS cannot deliver the message or report or affirm the probe.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-defaultNormalMprExpiryDuration };

11.26 defaultPermissibleContentTypes

defaultPermissibleContentTypes ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EmailContentTypes;

MATCHES FOR EQUALITY;

BEHAVIOUR defaultPermissibleContentTypesBehaviour BEHAVIOUR
DEFINED AS
"If the delivery control operation is supported by the MTS User, this parameter describes the default delivery controls on permissible content types. This attribute may have one of the possible values of a permissible-content-types MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-defaultPermissibleContentTypes};

11.27 defaultPermissibleEITs

defaultPermissiblePermissibleEITs ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EmailEITs;

MATCHES FOR EQUALITY;

BEHAVIOUR defaultPermissibleEITsBehaviour BEHAVIOUR
DEFINED AS
"If the delivery control operation is supported by the MTS User, this parameter describes the default delivery controls on permissible encoded information types. This attribute may have one of the possible values of a permissible-encoded information-types MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic encoded information types' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-defaultPermissibleEITs};

11.28 defaultPermissibleLowestPriority

defaultPermissibleLowestPriority ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.Priority;

MATCHES FOR EQUALITY;

BEHAVIOUR defaultPermissibleLowestPriorityBehaviour BEHAVIOUR
DEFINED AS
"If the delivery control operation is supported by the MTS User, this parameter describes the default delivery controls on permissible lowest MPR priority. This attribute may have one of the possible values of a permissible-lowest-priority MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-defaultPermissibleLowestPriority};

11.29 defaultPermissibleMaxContentLength

defaultPermissibleMaxLength ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ContentLength;

MATCHES FOR EQUALITY;

BEHAVIOUR defaultPermissibleMaxLengthBehaviour BEHAVIOUR
DEFINED AS
"If the delivery control operation is supported by the MTS User, this parameter describes the default delivery controls on maximum content length.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-defaultPermissibleMaxContentLength};

11.30 DefaultPermissibleOperations

defaultPermissibleOperations ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.Operations;

MATCHES FOR EQUALITY;

BEHAVIOUR defaultPermissibleOperationsBehaviour BEHAVIOUR
DEFINED AS
"If the delivery control operation is supported by the MTS User, this parameter describes the default delivery controls on permissible operations. This attribute may have one of the possible values of a permissible-operation MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-defaultPermissibleOperations};

11.31 DefaultUrgentMprExpiryDuration

defaultUrgentMprExpiryDuration ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.DurationInSeconds;

MATCHES FOR EQUALITY;

BEHAVIOUR defaultUrgentMprExpiryDurationBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the default duration in seconds from the arrival time of an urgent MPR after which the managed MTA determines that the MTS cannot deliver the message or report or affirm the probe.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-defaultUrgentMprExpiryDuration };

11.32 DeferralTime

deferralTime ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.Time;

MATCHES FOR EQUALITY;

BEHAVIOUR deferralTimeBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the deferral time of the MPR. This parameter may have one of the possible value of a deferred-delivery-time MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-deferralTime };

11.33 DirectoryName

directoryName ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailDirectoryName;

MATCHES FOR EQUALITY;

BEHAVIOUR directoryNameBehaviour BEHAVIOUR
DEFINED AS
"If Directory is used for MHS and a directory object instance is present for the managed element, this attribute specifies the directory name of the directory object instance. This attribute may have one of the possible values of a directory name parameter defined in ITU-T Rec. X.501 | ISO/IEC 9594-2 . For a non-standardised implementation of a Directory, a 'generic directory name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-directoryName };

11.34 disallowedMessages

disallowedMessages ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.restrictions;

MATCHES FOR EQUALITY; SET-COMPARISON, SET-INTERSECTION;

disallowedMessagesBehaviour BEHAVIOUR
DEFINED AS
"If restricted delivery was subscribed by the MTS User, this parameter provides the selected messages the MTS User is not willing to receive. This attribute may have one of the possible values of a set of restrictions MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. An empty value indicates that all messages are accepted.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-disallowedMessages};

11.35 DistributionListObjectInstanceId

distributionListObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR distributionListObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-distributionListObjectInstanceId };

11.36 Eits

eits ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailEits;

MATCHES FOR EQUALITY;

BEHAVIOUR eitsBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the encoded-information-types of the MPR. This attribute may have one of the possible values of an encoded-information-types MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic encoded information types' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-eits };

11.37 ForcedExpiryDuration

forcedExpiryDuration ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.DurationInSeconds;

MATCHES FOR EQUALITY;

BEHAVIOUR forcedExpiryDurationBehaviour BEHAVIOUR
DEFINED AS

"If MPR processing control is supported by the managed MTA, this attribute enables the MHS system manager to change the expiry duration of an MPR during its processing by the managed MTA. This attribute is empty unless set by the MHS system manager. If the value is empty or equal to zero, the expiry duration for the MPR is the default expiry duration value defined for the corresponding grade of delivery: Default Urgent MPR Expiry Duration, Default Non-Urgent MPR Expiry Duration or Default Normal MPR Expiry Duration.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-forcedExpiryDuration };

11.38 ForcedProcessingPriority

forcedProcessingPriority ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.Priority;

MATCHES FOR EQUALITY;

BEHAVIOUR forcedProcessingPriorityBehaviour BEHAVIOUR
DEFINED AS

"If MPR processing control is supported by the managed MTA, This attribute enables the MHS system manager to change the processing priority of an MPR. Initial value of this attribute is the grade of delivery of the MPR.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-forcedProcessingPriority };

11.39 GlobalDomainId

globalDomainId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailGlobalDomainId;

MATCHES FOR EQUALITY;

BEHAVIOUR globalDomainIdBehaviour BEHAVIOUR
DEFINED AS

"This attribute provides the identification of the management domain used by the managed MTA to create MTS-identifiers, trace-information-elements and internal-trace-information-elements. This attribute may have one of the possible values of a global-domain-identifier MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'Generic Global Domain Identifier' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-globalDomainId };

11.40 HeldByManager

heldByManager ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.HeldByManager;

MATCHES FOR EQUALITY;

BEHAVIOUR heldByManagerBehaviour BEHAVIOUR
DEFINED AS

"If MPR processing control is supported by the managed MTA, This attribute enables the MHS system manager to hold an MPR. Possible values are true or false (Boolean).";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-heldByManager };

11.41 InformationLossSuspected

informationLossSuspected ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.InformationLossSuspected;

MATCHES FOR EQUALITY;

BEHAVIOUR informationLossSuspectedBehaviour BEHAVIOUR
DEFINED AS

"This attribute indicates if there will be loss of information during conversion. Possible loss of information is described in Recommendation X.408.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-informationLossSuspected };

11.42 InitiatorAccessPointAddress

initiatorAccessPointAddress ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailAccessPointAddress;

MATCHES FOR EQUALITY;

BEHAVIOUR initiatorAccessPointAddressBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the access point address used by the initiator during association establishment. This attribute may have one of the possible values of a PSAP-address MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic address' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-initiatorAccessPointAddress };

11.43 InitiatorSecurityContext

initiatorSecurityContext ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.SecurityLabels;

MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR initiatorSecurityContextBehaviour BEHAVIOUR
DEFINED AS
"If strong authentication is used, this attribute provides the security context proposed by the initiator during association establishment. This attribute may have one of the possible values of a security-context MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-initiatorSecurityContext };

11.44 InitiatorSimpleCredentials

initiatorCredentials ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EmailSimpleCredentials;

MATCHES FOR EQUALITY;

BEHAVIOUR initiatorCredentialsBehaviour BEHAVIOUR
DEFINED AS
"If simple authentication is used, for the current association, this attribute provides the simple credentials used by the initiator during association establishment. This attribute may have one of the possible values of a password MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-initiatorCredentials };

11.45 InitiatorStrongCredentials

initiatorStrongCredentials ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailStrongCredentials;

MATCHES FOR EQUALITY,;

BEHAVIOUR initiatorStrongCredentialsBehaviour BEHAVIOUR
DEFINED AS
"If strong authentication is used, this attribute provides the strong credentials used by the initiator during association establishment. This attribute may have one of the possible values of an initiator-bind-token and, optionally, an initiator-certificate MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic Strong Credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-initiatorStrongCredentials };

11.46 LastAdjMTAName

lastAdjMTAName ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailMtaName;

MATCHES FOR EQUALITY;

BEHAVIOUR lastAdjMTANameBehaviour BEHAVIOUR
DEFINED AS

"If the MPR was transferred from an adjacent MTA, This parameter provides the name of the adjacent MTA. An empty value indicates that the arrival of the MPR was not the result of a transfer operation. This attribute may have one of the possible values of an MTA-name MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MTA name' type may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-lastAdjMTAName};

11.47 LocalMTAMaxMessageSize

localMTAMaxMessageSize ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.SizeInOctets;

MATCHES FOR EQUALITY;

BEHAVIOUR localMTAMaxMessageSizeBehaviour BEHAVIOUR
DEFINED AS

"This attribute defines the maximum size of messages from the adjacent MTA which can be processed by the managed MTA.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-localMTAMaxMessageSize };

11.48 LocalMTASimpleCredentials

localMTASimpleCredentials ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailSimpleCredentials;

MATCHES FOR EQUALITY;

BEHAVIOUR localMTASimpleCredentialsBehaviour BEHAVIOUR
DEFINED AS

"This attribute provides the simple password that can be used by the managed MTA during association establishment for simple authentication of itself. This attribute may have one of the possible values of a password MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-localMTASimpleCredentials };

11.49 LocalMTAStrongCredentials

localMTAStrongCredentials ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailStrongCredentials;

MATCHES FOR EQUALITY;

BEHAVIOUR localMTAStrongCredentialsBehaviour BEHAVIOUR
DEFINED AS

"This attribute provides the strong credentials that can be used by the managed MTA during association establishment for strong authentication of itself. This attribute may have one of the possible values of an initiator-bind-token and, optionally, an initiator-certificate MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic Strong Credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-localMTAStrongCredentials };

11.50 MaxAdjMTAInboundAssocs

maxAdjMTAInboundAssocs ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.NumberOfAssociations;

MATCHES FOR EQUALITY;

BEHAVIOUR maxAdjMTAInboundAssocsBehaviour BEHAVIOUR
DEFINED AS

"This attribute defines the maximum number of associations that may be simultaneously established, at the initiative of adjacent MTA, between the managed MTA and its adjacent MTA.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-maxAdjMTAInboundAssocs };

11.51 MaxAdjMTAOutboundAssocs

maxAdjMTAOutboundAssocs ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.NumberOfAssociations;

MATCHES FOR EQUALITY;

BEHAVIOUR maxAdjMTAOutboundAssocsBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the maximum number of associations that may be simultaneously established, at the initiative of the managed MTA, between the managed MTA and its adjacent MTA.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-maxAdjMTAOutboundAssocs };

11.52 MaxFunctionProcessingTime

maxFunctionProcessingTime ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR maxFunctionProcessingTimeBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the maximum duration in seconds used to perform an MTA function, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-maxFunctionProcessingTime };

11.53 MaxMTAResponseTime

maxMTAResponseTime ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR maxMTAResponseTimeBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the maximum response time, during the measurement interval, of those MPR that meet the selection criteria. Response time is the time between arrival and departure of a MPR in the managed MTA.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-maxMTAResponseTime };

11.54 MaxMtsUserInboundAssocs

maxMtsUserInboundAssocs ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.NumberOfAssociations;

MATCHES FOR EQUALITY;

BEHAVIOUR maxMtsUserInboundAssocsBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the maximum number of associations that may be simultaneously established, at the initiative of MTS Users, between the managed MTA and its MTS Users.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-maxMtsUserInboundAssocs };

11.55 MaxMtsUserOutboundAssocs

maxMtsUsersOutboundAssocs ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.NumberOfAssociations;

MATCHES FOR EQUALITY;

BEHAVIOUR maxMtsUsersOutboundAssocsBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the maximum number of associations that may be simultaneously established, at the initiative of MTS Users, between the managed MTA and its MTS Users.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-maxMtsUsersOutboundAssocs };

11.56 MaxSizeMprDelivered

maxSizeMprDelivered ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR maxSizeMprDeliveredBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the size of the largest MPR delivered to users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-maxSizeMprDelivered };

11.57 MaxSizeMprPassingFunction

maxSizeMprPassingFunction ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR maxSizeMprPassingFunctionBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the size of the largest MPR passing the MTA function, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-maxSizeMprPassingFunction };

11.58 MaxSizeMprSubmitted

maxSizeMprSubmitted ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR maxSizeMprSubmittedBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the size of the largest MPR submitted by users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-maxSizeMprSubmitted };

11.59 MaxSizeMprTransferredIn

maxSizeMprTransferredIn ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR maxSizeMprTransferredInBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the size of the largest MPR the managed MTA has received from another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-maxSizeMprTransferredIn };

11.60 MaxSizeMprTransferredOut

maxSizeMprTransferredOut ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR maxSizeMprTransferredOutBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the size of the largest MPR the managed MTA has sent to another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-maxSizeMprTransferredOut };

11.61 MdAssignedAlternateRecipient

mdAssignedAlternateRecipient ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailMtsUserName;

MATCHES FOR EQUALITY;

BEHAVIOUR mdAssignedAlternateRecipientBehaviour BEHAVIOUR
DEFINED AS
"If the MD alternate recipient assignment service is supported by the managed MTA, this attribute indicates the MTS User Name of an alternate recipient which may be assigned by the managed MTA acting as recipient to messages where there is not exact match between the recipient attributes and the name of an MTS User of the MD. This attribute may have one of the possible values of an OR-name MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MTS User name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mdAssignedAlternateRecipient };

11.62 MeanFunctionProcessingTime

meanFunctionProcessingTime ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR meanFunctionProcessingTimeBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the mean time used to perform an MTA function, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-meanFunctionProcessingTime };

11.63 MeanMTAResponseTime

meanMTAResponseTime ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR meanMTAResponseTimeBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the mean response time, during the measurement interval, of those MPR that meet the selection criteria. Response time is the time between arrival and departure of a MPR in the managed MTA.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-meanMTAResponseTime };

11.64 MeanNbOfStoredMpr

meanNbOfStoredMpr ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR meanNbOfStoredMprBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the mean number of MPR stored in the managed MTA, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-meanNbOfStoredMpr };

11.65 MeanSizeMprDelivered

meanSizeMprDelivered ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR meanSizeMprDeliveredBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the mean size of MPR delivered to users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-meanSizeMprDelivered };

11.66 MeanSizeMprPassingFunction

meanSizeMprPassingFunction ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR meanSizeMprPassingFunctionBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the mean size of MPR passing the MTA function, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-meanSizeMprPassingFunction };

11.67 MeanSizeMprSubmitted

meanSizeMprSubmitted ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR meanSizeMprSubmittedBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the mean size of MPR submitted by users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-meanSizeMprSubmitted };

11.68 MeanSizeMprTransferredIn

meanSizeMprTransferredIn ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR meanSizeMprTransferredInBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the mean size of MPR the managed MTA has received from another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-meanSizeMprTransferredIn };

11.69 MeanSizeMprTransferredOut

meanSizeMprTransferredOut ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR meanSizeMprTransferredOutBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the mean size of MPR the managed MTA has sent to another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-meanSizeMprTransferredOut };

11.70 MeanStorageOccupied

meanStorageOccupied ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMEANAsn1Module.Percent;

MATCHES FOR EQUALITY;

BEHAVIOUR meanStorageOccupiedBehaviour BEHAVIOUR
DEFINED AS
"This attribute indicates the mean percentage, during the measurement interval, of the storage available which is occupied by the MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMEANObjectIdentifiers.id-attribute-meanStorageOccupied };

11.71 MessageContentSize

messageContentSize ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ContentLength;

MATCHES FOR EQUALITY;

BEHAVIOUR messageContentSizeBehaviour BEHAVIOUR
DEFINED AS
"This parameter provides the content size of the MPR.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-messageContentSize };

11.72 MessageEncAlg

messageEncAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR messageEncAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the algorithm for the Message Enc";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-messageEncAlg };

11.73 MessageMOACAlg

messageMOACAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR messageMOACAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the algorithm for the origin authentication.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-messageMOACAlg };

11.74 MessageOriginatorCertificate

messageOriginatorCertificate ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.OriginatorCertificate;

MATCHES FOR EQUALITY;

BEHAVIOUR messageOriginatorCertificateBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the certificate of the originator. This attribute may have one of the possible values of an originator-certificate MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-messageOriginatorCertificate };

11.75 MessageOriginAuthenticationCheck

messageOriginAuthenticationCheck ATTRIBUTE
WITH ATTRIBUTE SYNTAXMhsMTAAsn1Module.MessageOriginAuthenticationCheck;

MATCHES FOR EQUALITY;

BEHAVIOUR messageOriginAuthenticationCheckBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the authentication check to determine the origin. This attribute may have one of the possible values of a message-origin-authentication-check MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-messageOriginAuthenticationCheck };

11.76 MessageSecurityLabel

messageSecurityLabel ATTRIBUTE
WITH ATTRIBUTE SYNTAXMhsMTAAsn1Module.SecurityLabel;

MATCHES FOR EQUALITY;

BEHAVIOUR messageSecurityLabelBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the labels for security. This attribute may have one of the possible values of a message-security-label MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-messageSecurityLabel };

11.77 MessageToken

messageToken ATTRIBUTE
WITH ATTRIBUTE SYNTAXMhsMTAAsn1Module.MessageToken;

MATCHES FOR EQUALITY;

BEHAVIOUR messageTokenBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the security token. This attribute may have one of the possible values of a message-token MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-messageToken };

11.78 MinFunctionProcessingTime

minFunctionProcessingTime ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR minFunctionProcessingTimeBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the minimum time used to perform an MTA function, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-minFunctionProcessingTime };

11.79 MinMTAResponseTime

minMTAResponseTime ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR minMTAResponseTimeBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the minimum response time, during the measurement interval, of those MPR that meet the selection criteria. Response time is the time between arrival and departure of a MPR in the managed MTA.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-minMTAResponseTime };

11.80 MinSizeMprDelivered

minSizeMprDelivered ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR minSizeMprDeliveredBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the size of the smallest MPR delivered to users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-minSizeMprDelivered };

11.81 MinSizeMprPassingFunction

minSizeMprPassingFunction ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR minSizeMprPassingFunctionBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the size of the smallest MPR passing the MTA function, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-minSizeMprPassingFunction };

11.82 MinSizeMprSubmitted

minSizeMprSubmitted ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR minSizeMprSubmittedBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the size of the smallest MPR submitted by users of the managed MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-minSizeMprSubmitted };

11.83 MinSizeMprTransferredIn

minSizeMprTransferredIn ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR minSizeMprTransferredInBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the size of the smallest MPR the managed MTA has received from another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-minSizeMprTransferredIn };

11.84 MinSizeMprTransferredOut

minSizeMprTransferredOut ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:gauge;

MATCHES FOR EQUALITY;

BEHAVIOUR minSizeMprTransferredOutBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the mean size of MPR the managed MTA has sent to another MTA, during the measurement interval, of those MPR that meet the selection criteria. In the case of a probe, it is the size of the probe itself which is measured, not the size of the subject message.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-minSizeMprTransferredOut };

11.85 MprInfo

mprInfo ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.MprInfo;

MATCHES FOR EQUALITY;

BEHAVIOUR mprInfoBehaviour BEHAVIOUR
DEFINED AS
"This attribute describes, for each MPR, its arrival Time and processing state. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mprInfo };

11.86 MprListObjectInstanceId

mprListObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR mprListObjectInstanceId Behaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mprListObjectInstanceId };

11.87 MprObjectInstanceId

mprObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR mprObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mprObjectInstanceId };

11.88 MtaName

mtaName ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailMtaName;

MATCHES FOR EQUALITY;

BEHAVIOUR mtaNameBehaviour BEHAVIOUR
DEFINED AS
"This attribute specifies the name of the managed MTA. This attribute may have one of the possible values of an MTA-name MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MTA name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtaName };

11.89 MtsIdentifier

mtsIdentifier ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailMpduIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR mtsIdentifierBehaviour BEHAVIOUR
DEFINED AS
"This parameter provides the MTS-identifier of the MPR. This attribute may have one of the possible values of an MTS-Identifier MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MPDU identifier' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsIdentifier };

11.90 MtsUserAccessPointAddress

mtsUserAccessPointAddress ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailAccessPointAddress;

MATCHES FOR EQUALITY;

BEHAVIOUR mtsUserAccessPointAddressBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the access point address of the MTS User. This attribute may have one of the possible values of a PSAP address MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic address' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsUserAccessPointAddress };

11.91 MtsUserDeliverableContentTypes

mtsUserDeliverableContentTypes ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EmailContentTypes;

MATCHES FOR SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR mtsUserDeliverableContentTypesBehaviour BEHAVIOUR
DEFINED AS
"This attribute indicates which content types the MTS User is able to receive. This attribute may have one of the possible values of a set of content-type MTS abstract service parameters as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsUserDeliverableContentTypes };

11.92 MtsUserDeliverableEits

mtsUserDeliverableEits ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailEits;

MATCHES FOR SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR mtsUserDeliverableEitsBehaviour BEHAVIOUR
DEFINED AS
"This attribute indicates which encoded information types the MTS User is able to receive. This attribute may have one of the possible values of an encoded-information-types MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic encoded information types' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsUserDeliverableEits };

11.93 MtsUserDeliverableMaxContentLength

mtsUserDeliverableMaxContentLength ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ContentLength;

MATCHES FOR EQUALITY;

BEHAVIOUR mtsUserDeliverableMaxContentLengthBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the maximum size of the content which can be processed by the MTS User.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsUserDeliverableMaxContentLength };

11.94 MtsUserName

mtsUserName ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailMtsUserName;

MATCHES FOR EQUALITY;

BEHAVIOUR mtsUserNameBehaviour BEHAVIOUR
DEFINED AS
"This attribute may have one of the possible values of the MTS User name of the MTS User. This attribute may have one of the possible values of an OR-name MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsUserName };

11.95 MtsUserObjectInstanceId

mtsUserObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR mtsUserObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsUserObjectInstanceId };

11.96 MtsUserPreferredDeliveryMethod

mtsUserPreferredDeliveryMethod ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.RequestedDeliveryMethods;

MATCHES FOR EQUALITY;

BEHAVIOUR mtsUserPreferredDeliveryMethodBehaviour BEHAVIOUR
DEFINED AS
"This attribute describes the preferred delivery method of the MTS User. This attribute may have one of the possible values of a requested-delivery-method MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsUserPreferredDeliveryMethod };

11.97 MtsUserSimpleCredentials

mtsUserSimpleCredentials ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailSimpleCredentials;

MATCHES FOR EQUALITY;

BEHAVIOUR mtsUserSimpleCredentialsBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the simple password that can be used by the MTS User during association establishment for simple authentication of itself. This attribute may have one of the possible values of a password MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsUserSimpleCredentials };

11.98 MtsUserStrongCredentials

mtsUserStrongCredentials ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailStrongCredentials;

MATCHES FOR EQUALITY;

BEHAVIOUR mtsUserStrongCredentialsBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the strong credentials that can be used by the MTS User during association establishment for strong authentication of itself. This attribute may have one of the possible values of an initiator-bind-token and, optionally, an initiator-certificate MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic Strong Credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsUserStrongCredentials };

11.99 MtsUserSupportedApplicationContexts

mtsUserSupportedApplicationContexts ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ApplicationContexts;

MATCHES FOR EQUALITY;

BEHAVIOUR mtsUserSupportedApplicationContextsBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the MHS application contexts that are supported by the MTS User.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsUserSupportedApplicationContexts };

11.100 MtsUserType

mtsUserType ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.MtsUserType;

MATCHES FOR EQUALITY;

BEHAVIOUR mtsUserTypeBehaviour BEHAVIOUR
DEFINED AS
"This attribute indicates the nature of the MTS User. The nature can be an UA, MS or AU.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-mtsUserType };

11.101 NewMessageEncAlg

newMessageEncAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR newMessageEncAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the new algorithm for the Message Enc";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-newMessageEncAlg };

11.102 NewMessageMOACAlg

newMessageMOACAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR newMessageMOACAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the new algorithm for the MOAC";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-newMessageMOACAlg };

11.103 NewMessageOriginatorCertificate

newMessageOriginatorCertificate ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.OriginatorCertificate;

MATCHES FOR EQUALITY;

BEHAVIOUR newMessageOriginatorCertificateBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the new message originator certificate";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-newMessageOriginatorCertificate };

11.104 NewRecipientCicAlg

newRecipientCicAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR newRecipientCicAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the new algorithm for the Recipient Cic";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-newRecipientCicAlg };

11.105 NewRecipientName

newRecipientName ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailMtsUserName;

MATCHES FOR EQUALITY;

BEHAVIOUR newRecipientNameBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the new Recipient name";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-newRecipientName };

11.106 NewRecipientTokenAlg

newRecipientTokenAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR newRecipientTokenAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the new token algorithm for the recipient";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-newRecipientTokenAlg };

11.107 NewRecipientTokenEncAlg

newRecipientTokenEncAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR newRecipientTokenEncAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the new token enc algorithm for the recipient";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-newRecipientTokenEncAlg };

11.108 NewRecipientTokenSigAlg

newRecipientTokenSigAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR newRecipientTokenSigAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the new token sig algorithm for the recipient";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-newRecipientTokenSigAlg };

11.109 NextAdjMTAName

nextAdjMTAName ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailMtaName;

MATCHES FOR EQUALITY;

BEHAVIOUR nextAdjMTANameBehaviour BEHAVIOUR
DEFINED AS
"If the MPR is or will be transferred to an adjacent MTA, this parameter provides the name of the adjacent MTA. An empty value indicates that the MPR will not be transferred to an adjacent MTA or that the Routing function is not performed yet by the managed MTA for the current MPR. This attribute may have one of the possible values of an MTA-name MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic MTA name' type may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-nextAdjMTAName};

11.110 NrOfInvocations

nrOfInvocations ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:counter;

MATCHES FOR EQUALITY;

BEHAVIOUR nrOfInvocationsBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the number of times the MTA function has been invoked, during the measurement interval, for the processing of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-nrOfInvocations };

11.111 NrOfMprDeferred

nrOfMprDeferred ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:counter;

MATCHES FOR EQUALITY;

BEHAVIOUR nrOfMprDeferredBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the number of MPR the managed MTA has deferred to another MTA, during the measurement interval, of those MPR that meet the selection criteria. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-nrOfMprDeferred };

11.112 NrOfMprDelivered

nrOfMprDelivered ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:counter;

MATCHES FOR EQUALITY;

BEHAVIOUR nrOfMprDeliveredBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the number of MPR delivered, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-nrOfMprDelivered };

11.113 NrOfMprRedirected

nrOfMprRedirected ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:counter;

MATCHES FOR EQUALITY;

BEHAVIOUR nrOfMprRedirectedBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the number of MPR the managed MTA has redirected to another mts user, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-nrOfMprRedirected };

11.114 NrOfMprRejected

nrOfMprRejected ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:counter;

MATCHES FOR EQUALITY;

BEHAVIOUR nrOfMprRejectedBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the number of MPR rejected, during the measurement interval, of those MPR that meet the selection criteria. An MPR is considered to be rejected when the managed MTA determines that the mts cannot deliver a message or a report or affirm a probe.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-nrOfMprRejected };

11.115 NrOfMprSubmitted

nrOfMprSubmitted ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:counter;

MATCHES FOR EQUALITY;

BEHAVIOUR nrOfMprSubmittedBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the number of messages or probes submitted to the MTA";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-nrOfMprSubmitted };

11.116 NrOfMprTransferredIn

nrOfMprTransferredIn ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:counter;

MATCHES FOR EQUALITY;

BEHAVIOUR nrOfMprTransferredIntBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the number of MPR the managed MTA has received from another MTA, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-nrOfMprTransferredIn };

11.117 NrOfMprTransferredOut

nrOfMprTransferredOut ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:counter;

MATCHES FOR EQUALITY;

BEHAVIOUR nrOfMprTransferredOutBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the number of MPR the managed MTA has transferred to another MTA, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-nrOfMprTransferredOut };

11.118 NrOfRecipientsProcessed

nrOfRecipientsProcessed ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:counter;

MATCHES FOR EQUALITY;

BEHAVIOUR nrOfRecipientsProcessedBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the number of recipient processed, during the measurement interval, of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-nrOfRecipientsProcessed };

11.119 NrOfRejectedInvocations

nrOfRejectedInvocations ATTRIBUTE
DERIVED FROM Recommendation X.721 | ISO/IEC 10165-2:counter;

MATCHES FOR EQUALITY;

BEHAVIOUR nrOfRejectedInvocationsBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the number of rejected invocations of the MTA function, during the measurement interval, for the processing of those MPR that meet the selection criteria.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-nrOfRejectedInvocations };

11.120 OriginatorName

originatorName ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailMtsUserName;

MATCHES FOR EQUALITY;

BEHAVIOUR originatorNameBehaviour BEHAVIOUR
DEFINED AS
"This parameter provides the originator-name of the MPR";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-originatorName };

11.121 PermittedMessages

permittedMessages ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.restrictions;

MATCHES FOR EQUALITY; SET-COMPARISON, SET-INTERSECTION;

permittedMessagesBehaviour BEHAVIOUR

DEFINED AS

If restricted delivery was subscribed by the MTS User, this parameter provides the selected messages the MTS User is willing to receive. This attribute may have one of the possible values of a set of restrictions MTS abstract service parameter as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. An empty value indicates that all messages are accepted.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-permittedMessages};

11.122 Priority

priority ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.Priority;

MATCHES FOR EQUALITY;

BEHAVIOUR priorityBehaviour BEHAVIOUR
DEFINED AS

"This parameter provides the priority of the MPR. This attribute may have one of the possible values of a priority MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-priority };

11.123 PriorityList

priorityList ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.PriorityList;

MATCHES FOR SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR priorityListBehaviour BEHAVIOUR
DEFINED AS

"This attribute may have one of the possible values of the set of priorities from messages for which performance data should be gathered";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-priorityList };

11.124 ProbeOriginatorCertificate

probeOriginatorCertificate ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.OriginatorCertificate;

MATCHES FOR EQUALITY;

BEHAVIOUR probeOriginatorCertificateBehaviour BEHAVIOUR
DEFINED AS

"This attribute provides the certificate of the originator";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-probeOriginatorCertificate };

11.125 ProbeOriginAuthenticationCheck

probeOriginAuthenticationCheck ATTRIBUTE
WITH ATTRIBUTE SYNTAXMhsMTAAsn1Module.ProbeOriginAuthenticationCheck;

MATCHES FOR EQUALITY;

BEHAVIOUR probeOriginAuthenticationCheckBehaviour BEHAVIOUR
DEFINED AS

"This attribute provides the authentication check to determine the origin. This attribute may have one of the possible values of a report-origin-authentication-check MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-probeOriginAuthenticationCheck };

11.126 ProbePOACAlg

probePOACAlgATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR probePOACAlgATTRIBUTBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the algorithm for the POAC";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-probePOACAlgATTRIBUTE };

11.127 ProbeSecurityLabel

probeSecurityLabel ATTRIBUTE
WITH ATTRIBUTE SYNTAXMhsMTAAsn1Module.SecurityLabel;

MATCHES FOR EQUALITY;

BEHAVIOUR probeSecurityLabelBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the labels for security";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-probeSecurityLabel };

11.128 ProcessingState

processingState ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ProcessingState;

MATCHES FOR EQUALITY;

BEHAVIOUR processingStateBehaviour BEHAVIOUR
DEFINED AS
"This parameter provides information on the function currently performed on the MPR. A processing state set to 'idle' indicates that the MPR is waiting to be processed. A processing state set to 'processed' indicates that the MPR was successfully processed. A processing state set to 'rejected' indicates that the MTS was not able to deliver the message or the report or affirm the probe. A processing state set to 'name-resolution', 'redirection', 'deferred-delivery', 'conversion' or 'securityContextCheck' indicates that the MPR is currently performing the corresponding function on the MPR. The value 'unknownFunction' indicates that the MTA is currently performing a function on the MPR that is not name resolution, dl expansion, redirection, deferred-delivery, conversion or security Context Check.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-processingState };

11.129 ProcessingSummary

processingSummary ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ProcessingSummary;

MATCHES FOR EQUALITY;

BEHAVIOUR processingSummaryBehaviour BEHAVIOUR
DEFINED AS
"This parameter provides information on the functions which were successfully performed on the MPR by the managed MTA since the arrival time. The following functions are monitored by this parameter: name resolution, dl expansion, redirection, deferred-delivery, conversion and security context check. If no function is performed yet by the MTA on the MPR, the processing Summary parameter is set to 'idle'.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-processingSummary };

11.130 ProofOfDelivery

proofOfDelivery ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ProofOfDelivery;

MATCHES FOR EQUALITY;

BEHAVIOUR proofOfDeliveryBehaviour BEHAVIOUR
DEFINED AS
"This attribute identifies if proofOfDelivery is applied";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-proofOfDelivery };

11.131 ProofOfDeliveryRequest

proofOfDeliveryRequest ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ProofOfDeliveryRequest;

MATCHES FOR EQUALITY;
BEHAVIOUR proofOfDeliveryRequestBehaviour BEHAVIOUR

DEFINED AS
"This attribute identifies if proof of Delivery is requested. This attribute may have one of the possible values of a proof-of-delivery-request MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-proofOfDeliveryRequest };

11.132 RecipientCertificate

recipientCertificate ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.RecipientCertificate;

MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR recipientCertificateBehaviour BEHAVIOUR
DEFINED AS
"This attribute indicates the certificate of a recipient";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-recipientCertificate };

11.133 RecipientCicAlg

recipientCicAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR recipientCicAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the Cic algorithm for the recipient";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-recipientCicAlg };

11.134 RecipientName

recipientName ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailMtsUserName;

MATCHES FOR EQUALITY;

BEHAVIOUR recipientNameBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the MTS User name of the recipient";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-recipientName };

11.135 RecipientsNames

recipientsNames ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailMtsUserNames;

MATCHES FOR SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR recipientsNamesBehaviour BEHAVIOUR
DEFINED AS
"This attribute indicates the MTS User name of each recipient of the MPR. For a report this attribute indicates the actual recipients names. This attribute may have one of the possible values of a set of OR-name MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic name' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-recipientsNames };

11.136 RecipientTokenAlg

recipientTokenAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR recipientTokenAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the token algorithm for the recipient";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-recipientTokenAlg };

11.137 RecipientTokenEncAlg

recipientTokenEncAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR recipientTokenEncAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the token enc algorithm for the recipient";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-recipientTokenEncAlg };

11.138 RecipientTokenSigAlg

recipientTokenSigAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR recipientTokenSigAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the algorithm for the ROAC";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-recipientTokenSigAlg };

11.139 RedirectionRecipient

redirectionRecipient ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhSMTAAsn1Module.EMailMtsUserName;

MATCHES FOR EQUALITY;

BEHAVIOUR redirectionRecipientBehaviour BEHAVIOUR
DEFINED AS
"This attribute indicates the alternate recipient if set by the MTS User. If this attribute has the value NULL, then there is no redirected recipient";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-redirectionRecipient };

11.140 Redirections

redirections ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhSMTAAsn1Module.EMailRedirections;

MATCHES FOR EQUALITY;

BEHAVIOUR redirectionsBehaviour BEHAVIOUR
DEFINED AS
"If secure redirection was subscribed, this parameter provides, for each security label, a redirection address. If a redirection address has the value NULL, then redirection does not take place and the message is non-delivered.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-redirections };

11.141 ReportOriginatorCertificate

reportOriginatorCertificate ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.OriginatorCertificate;

MATCHES FOR EQUALITY;

BEHAVIOUR reportOriginatorCertificateBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the originator certificate of a report";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-reportOriginatorCertificate };

11.142 ReportOriginAuthenticationCheck

reportOriginAuthenticationCheck ATTRIBUTE
WITH ATTRIBUTE SYNTAXMhsMTAAsn1Module.ReportOriginAuthenticationCheck;

MATCHES FOR EQUALITY;

BEHAVIOUR reportOriginAuthenticationCheckBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the authentication check to determine the origin";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-reportOriginAuthenticationCheck };

11.143 ReportROACAlg

reportROACAlg ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.AlgoritmIdentifier;

MATCHES FOR EQUALITY;

BEHAVIOUR reportROACAlgBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the algorithm for the ROAC";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-reportROACAlg };

11.144 ReportSecurityLabel

reportSecurityLabel ATTRIBUTE
WITH ATTRIBUTE SYNTAXMhsMTAAsn1Module.SecurityLabel;

MATCHES FOR EQUALITY;

BEHAVIOUR reportSecurityLabelBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the labels for security";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-reportSecurityLabel };

11.145 ResponderAccessPointAddress

responderAccessPointAddress ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailAccessPointAddress;

MATCHES FOR EQUALITY;

BEHAVIOUR responderAccessPointAddressBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the access point address used by the responder during association establishment. This attribute may have one of the possible values of a PSAP-address MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic address' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-responderAccessPointAddress };

11.146 ResponderSimpleCredentials

responderCredentials ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailSimpleCredentials;

MATCHES FOR EQUALITY;

BEHAVIOUR responderCredentialsBehaviour BEHAVIOUR
DEFINED AS
"If simple authentication is used for the current association, this attribute provides the simple credentials used by the responder during association establishment. This attribute may have one of the possible values of a password MTS abstract service parameter defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-responderCredentials };

11.147 ResponderStrongCredentials

responderStrongCredentials ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.EMailStrongCredentials;

MATCHES FOR EQUALITY;

BEHAVIOUR responderStrongCredentialsBehaviour BEHAVIOUR
DEFINED AS
"If strong authentication is used, this attribute provides the strong credentials used by the responder during association establishment. This attribute may have one of the possible values of an initiator-bind-token and, optionally, an initiator-certificate MTS abstract service parameters defined in ITU-T Rec. X.411 | ISO/IEC 10021-4. For a non-standardised implementation of this MTS abstract service parameter a 'generic Strong Credentials' value may be used. The description of the use of this generic type is out of the scope of this Recommendation | International Standard.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-responderStrongCredentials };

11.148 RoutingFunctionObjectInstanceId

routingFunctionObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR routingFunctionObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-routingFunctionObjectInstanceId };

11.149 SecAdjMTAObjectInstanceId

secAdjMTAObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secAdjMTAObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-secAdjMTAObjectInstanceId };

11.150 SecAssociationObjectInstanceId

secAssociationObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secAssociationObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-secAssociationObjectInstanceId };

11.151 SecConversionObjectInstanceId

secConversionObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secConversionObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-secConversionObjectInstanceId };

11.152 SecGenROACObjectInstanceId

secGenROACObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secGenROACObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-secGenROACObjectInstanceId };

11.153 SecMessageObjectInstanceId

secMessageObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secMessageObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-secMessageObjectInstanceId };

11.154 SecMtsUserObjectInstanceId

secMtsUserObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secMtsUserObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-secMtsUserObjectInstanceId };

11.155 SecProbeObjectInstanceId

secProbeObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secProbeObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-secProbeObjectInstanceId };

11.156 SecReportObjectInstanceId

secReportObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secReportObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-secReportObjectInstanceId };

11.157 SecurityLabels

securityLabels ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.SecurityLabels;

MATCHES FOR SET-COMPARISON, SET-INTERSECTION;

BEHAVIOUR securityLabelsBehaviour BEHAVIOUR
DEFINED AS
"This attribute provides the security labels that can be used by the MTS User to establish an association with the managed MTA. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-securityLabels };

11.158 SecVerifGenMsgObjectInstanceId

secVerifGenMsgObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secVerifGenMsgObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-secVerifGenMsgObjectInstanceId };

11.159 SecVerifGenRecipObjectInstanceId

SecVerifGenRecipObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR SecVerifGenRecipObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.Id-attribute-SecVerifGenRecipObjectInstanceId};

11.160 SecVerifMOACFunctionObjectInstanceId

secVerifMOACFunctionObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secVerifMOACFunctionObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-SecVerifGenRecipObjectInstanceId };

11.161 SecVerifPOACObjectInstanceId

secVerifPOACObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secVerifPOACObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-secVerifPOACObjectInstanceId };

11.162 SecVerifROACObjectInstanceId

secVerifROACObjectInstanceId ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ObjectIdOrDN;

MATCHES FOR EQUALITY;

BEHAVIOUR secVerifROACObjectInstanceIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used for the naming of the managed object instance. ";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-secVerifROACObjectInstanceId };

11.163 SupportedApplicationContexts

supportedApplicationContexts ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.ApplicationContexts;

MATCHES FOR EQUALITY;

BEHAVIOUR supportedApplicationContextsBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the MHS application contexts that are supported by the managed MTA.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-supportedApplicationContexts };

11.164 TypeOfMpr

typeOfMpr ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.TypeOfMpr;

MATCHES FOR EQUALITY;

BEHAVIOUR typeOfMprBehaviour BEHAVIOUR
DEFINED AS
"This attribute defines the type is message, probe or report";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-typeOfMpr };

11.165 WaitTimeToRelease

waitTimeToRelease ATTRIBUTE
WITH ATTRIBUTE SYNTAX MhsMTAAsn1Module.DurationInSeconds;

MATCHES FOR EQUALITY;

BEHAVIOUR waitTimeToReleaseBehaviour BEHAVIOUR
DEFINED AS
"This attribute describes the duration in seconds an association established at the initiative of the managed MTA will remain idle before being closed.";;

REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-attribute-waitTimeToRelease };

12 Definition of notifications

No specific notifications are defined for the purpose of MTA management. All notifications definitions are imported from Recommendation M.3100 or CCITT Rec. X.721 | ISO/IEC 10165-2.

13 Definition of actions

No specific actions are defined for the purpose of MTA management.

14 Name bindings

This clause specifies name bindings for the MTA management managed object classes.

14.1 AdjMTA-mta

```
adjMTA-mta NAME BINDING
SUBORDINATE OBJECT CLASS adjMTA;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE mtaId;
BEHAVIOUR adjMTA-mtaBehaviour BEHAVIOUR
DEFINED AS
    "For each adjacent MTA of the managed mta, an instance of this class shall be created";;
CREATE WITH-REFERENCE-OBJECT;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-adjMTA-mta};
```

14.2 Association-adjMTA

```
association-adjMTA NAME BINDING
SUBORDINATE OBJECT CLASS association;
NAMED BY SUPERIOR OBJECT CLASS adjMTA;
WITH ATTRIBUTE associationObjectInstanceId;
BEHAVIOUR association-adjMTABehaviour BEHAVIOUR
DEFINED AS
    "An association object instance shall be created each time an association is established between the adjacent MTA and the
    managed MTA";;
CREATE WITH-REFERENCE-OBJECT;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-association-adjMTA};
```

14.3 Association-MtsUser

```
association-MtsUser NAME BINDING
SUBORDINATE OBJECT CLASS association;
NAMED BY SUPERIOR OBJECT CLASS MtsUser;
WITH ATTRIBUTE associationObjectInstanceId;
BEHAVIOUR association-MtsUserBehaviour BEHAVIOUR
DEFINED AS
    "An association object instance shall be created each time an association is established between the Mts-User and the
    managed MTA";;
CREATE WITH-REFERENCE-OBJECT;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-association-MtsUser};
```

14.4 ConversionCurrentData-ConversionFunction

```
conversionCurrentData-conversionFunction NAME BINDING
SUBORDINATE OBJECT CLASS conversionCurrentData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS conversionFunction;
WITH ATTRIBUTE "Recommendation X.739 | 10164-11":scannerId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-conversionCurrentData-conversion};
```

14.5 ConversionFunction-mta

```
conversionFunction-mta NAME BINDING
SUBORDINATE OBJECT CLASS conversionFunction;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE conversionFunctionObjectInstanceId;
BEHAVIOUR conversionFunction-mtaBehaviour BEHAVIOUR
DEFINED AS
    "A ConversionFunction Object instance shall be created for each type of conversion supported by the managed MTA";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-conversionFunction-mta};
```

14.6 ConversionHistoryData-ConversionCurrentData

```
conversionHistoryData-conversionCurrentData NAME BINDING
SUBORDINATE OBJECT CLASS conversionHistoryData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS conversionCurrentData;
WITH ATTRIBUTE historyDataId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS   {MhsMgntMTAObjectIdentifiers.id-name-binding-perfMTAHistoryData-        perfMTACurrentData};
```

14.7 DistributionListFunction-mta

```
distributionListFunction-mta NAME BINDING
SUBORDINATE OBJECT CLASS distributionListFunction;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE distributionListObjectInstanceId;
BEHAVIOUR distributionListFunction-mtaBehaviour BEHAVIOUR
DEFINED AS
    "If the managed MTA can perform D.L. Expansion, a distributionList object instance shall be created. One instance of the
    DistributionList object class exists for one managed MTA which supports D.L.Expansion";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-distributionListFunction-mta};
```

14.8 DLCurrentData-DistrubutionListFunction

```
dlCurrentData-distributionListFunction NAME BINDING
SUBORDINATE OBJECT CLASS dlCurrentData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS distributionListFunction;
WITH ATTRIBUTE "Recommendation X.739 | ISO/IEC 10164-11 ":scannerId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-dlCurrentData-distributionListFunction};
```

14.9 DLHistoryData-DLCurrentData

```
dlHistoryData-dlCurrentData NAME BINDING
SUBORDINATE OBJECT CLASS dlHistoryData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS dlCurrentData AND SUBCLASSES;
WITH ATTRIBUTE historyDataId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-dlHistoryData-dlCurrentData};
```

14.10 Mpr-mprList

```
mpr-mprList NAME BINDING
SUBORDINATE OBJECT CLASS mpr;
NAMED BY SUPERIOR OBJECT CLASS mprList;
WITH ATTRIBUTE mprObjectInstanceId;
BEHAVIOUR mpr-mprListBehaviour BEHAVIOUR
DEFINED AS
    "A mpr object instance is created on the request of the MHS system manager whenever he requires more information then
    listed in the mprList object instance";;
CREATE WITH-REFERENCE-OBJECT;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-mpr-mprList};
```

14.11 MprList-mta

```
mprList-mta NAME BINDING
SUBORDINATE OBJECT CLASS mprList;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE mprListObjectInstanceId;
BEHAVIOUR mprList-mtaBehaviour BEHAVIOUR
DEFINED AS
    "A mprList object instance shall be created at the creation of the MTA object instance. One instance of the mprList object
    class exists for one managed MTA";;
CREATE WITH-REFERENCE-OBJECT;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-mprList-mta};
```

14.12 Mta-md

```
mta-md NAME BINDING
SUBORDINATE OBJECT CLASS mta;
NAMED BY SUPERIOR OBJECT CLASS md;
WITH ATTRIBUTE equipmentId;
BEHAVIOUR mta-mdBehaviour BEHAVIOUR
DEFINED AS
    "One instance of this object class shall be created for a managed MTA";;
CREATE WITH-REFERENCE-OBJECT;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-mta-md};
```

14.13 MtsUser-mta

```
MtsUser-mta NAME BINDING
SUBORDINATE OBJECT CLASS MtsUser;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE mtsUserObjectInstanceId;
BEHAVIOUR MtsUser-mtaBehaviour BEHAVIOUR
DEFINED AS
    "For each MTS-User of the managed MTA, an instance of this class shall be created";;
CREATE WITH-REFERENCE-OBJECT;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-MtsUser-mta};
```

14.14 PerfMTACurrentData-mta

```
perfMTACurrentData-mta NAME BINDING
SUBORDINATE OBJECT CLASS perfMTACurrentData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS mta AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739 | ISO/IEC 10164-11":scannerId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-perfMTAcurrentData-mta};
```

14.15 PerfMTAHistoryData-perfMTACurrentData

```
perfMTAHistoryData-perfMTACurrentData NAME BINDING
SUBORDINATE OBJECT CLASS perfMTAHistoryData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS perfMTACurrentData AND SUBCLASSES;
WITH ATTRIBUTE historyDataId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-perfMTAHistoryData-perfMTACurrentData};
```

14.16 RoutingCurrentData-RoutingFunction

```
routingCurrentData-routingFunction NAME BINDING
SUBORDINATE OBJECT CLASS routingCurrentData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS routingFunction;
WITH ATTRIBUTE "Recommendation X.739 | ISO/IEC 10164-11":scannerId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-routingCurrentData-routingFunction};
```

14.17 RoutingFunction-mta

```
routing-mta NAME BINDING
SUBORDINATE OBJECT CLASS routing;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE routingFunctionObjectInstanceId;
BEHAVIOUR routing-mtaBehaviour BEHAVIOUR
DEFINED AS
    "A routingFunction object instance shall be created at the creation of the MTA object instance. One instance of the
    routingFunction object class exists for one managed MTA";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-routing-mta};
```

14.18 RoutingHistoryData-RoutingCurrentData

```
routingHistoryData-routingCurrentData NAME BINDING
SUBORDINATE OBJECT CLASS routingHistoryData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS routingCurrentData;
WITH ATTRIBUTE historyDataId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS{MhsMgntMTAObjectIdentifiers.id-name-binding-routingHistoryData-routingCurrentData};
```

14.19 SecAdjMTA-adjMTA

```
secAdjMTA-adjMTA NAME BINDING
SUBORDINATE OBJECT CLASS secAdjMTA;
NAMED BY SUPERIOR OBJECT CLASS adjMTA;
WITH ATTRIBUTE secAdjMTAObjectInstanceId ;
BEHAVIOUR secAdjMTA-adjMTABehaviour BEHAVIOUR
DEFINED AS
    "For each adjacent MTA of the managed mta for which secure associations may be established, an instance of this
    class shall be created. Zero or one instance of the secAdjMTA object class exists for each adjacent MTA of the
    managed MTA. ";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secAdjMTA-adjMTA};
```

14.20 SecAssociation-association

```
secAssociation-association NAME BINDING
SUBORDINATE OBJECT CLASS secAssociation;
NAMED BY SUPERIOR OBJECT CLASS association;
WITH ATTRIBUTE secAssociationId;
BEHAVIOUR secAssociation-associationBehaviour BEHAVIOUR
DEFINED AS
    "A secAssociation object instance shall be created each time a secure association is established with the managed MTA";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secAssociation-association};
```

14.21 SecConversion-conversionFunction

secConversion-conversionFunction NAME BINDING
SUBORDINATE OBJECT CLASS secConversion;
NAMED BY SUPERIOR OBJECT CLASS conversionFunction ;
WITH ATTRIBUTE secConversionObjectInstanceId;
BEHAVIOUR secConversion-conversionFunctionBehaviour BEHAVIOUR
DEFINED AS
"A secConversionFunction Object instance shall be created for each type of secure conversion supported by the managed MTA";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secConversion-conversionFunction};

14.22 SecGenROACFunction-mta

secGenROACFunction-mta NAME BINDING
SUBORDINATE OBJECT CLASS secGenROACFunction;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE secGenROACFunctionId;
BEHAVIOUR secGenROACFunction-mtaBehaviour BEHAVIOUR
DEFINED AS
"If the MTA can generate ROAC, then an instance of the secGenROACFunction Managed Object class is created";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secGenROACFunction-mta};

14.23 SecMessage-mpr

secMessage-mpr NAME BINDING
SUBORDINATE OBJECT CLASS secMessage;
NAMED BY SUPERIOR OBJECT CLASS mpr;
WITH ATTRIBUTE secMessageId;
BEHAVIOUR secMessage-mprBehaviour BEHAVIOUR
DEFINED AS
"If the MTA supports secure message functionality, then for every secure message an instance of the secMessage Managed Object class is created";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secMessage-mpr};

14.24 SecMtsUser-MtsUser

secMtsUser SUBORDINATE OBJECT CLASS secMtsUser;
NAMED BY SUPERIOR OBJECT CLASS mtsUser;
WITH ATTRIBUTE secMtsUserId;
BEHAVIOUR secMtsUser-MtsUserBehaviour BEHAVIOUR
DEFINED AS
"If the MTA want to have secure associations to the neighbouring MTsUser, then an instance of the secMtsUser Managed Object class is created";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secMtsUser-MtsUser};

14.25 SecProbe-mpr

secProbe-mpr NAME BINDING
SUBORDINATE OBJECT CLASS secProbe;
NAMED BY SUPERIOR OBJECT CLASS mpr;
WITH ATTRIBUTE secProbeId;
BEHAVIOUR secProbe-mprBehaviour BEHAVIOUR
DEFINED AS
"If the MTA supports secure probe functionality, then for every secure probe an instance of the secProbe Managed Object class is created";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secProbe-mpr};

14.26 SecReport-mpr

```
secReport-mpr NAME BINDING
SUBORDINATE OBJECT CLASS secReport;
NAMED BY SUPERIOR OBJECT CLASS mpr;
WITH ATTRIBUTE secReportId;
BEHAVIOUR secReport-mprBehaviour BEHAVIOUR
DEFINED AS
    "If the MTA supports secure report functionality, then for every secure report an instance of the secReport Managed
    Object class is created";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secReport-mpr};
```

14.27 SecVerifGenMsgFunction-mta

```
secVerifGenMsgFunction-mta NAME BINDING
SUBORDINATE OBJECT CLASS secVerifGenMsgFunction;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE secVerifGenMsgFunctionId;
BEHAVIOUR secVerifGenMsgFunction-mtaBehaviour BEHAVIOUR
DEFINED AS
    "If the MTA has supported the verification and generation of security attributes, then an instance of the
    secVerifGenMsgFunction Managed Object class is created";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secVerifGenMsgFunction-mta};
```

14.28 SecVerifGenRecipFunction-mta

```
secVerifGenRecipFunction-mta NAME BINDING
SUBORDINATE OBJECT CLASS secVerifGenRecipFunction;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE secVerifGenRecipFunctionId;
BEHAVIOUR secVerifGenRecipFunction-mtaBehaviour BEHAVIOUR
DEFINED AS
    "If the MTA has supported the verification and generation of security attributes, then an instance of the
    secVerifGenRecipFunction Managed Object class is created";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secVerifGenRecipFunction-mta};
```

14.29 SecVerifMOACFunction-mta

```
secVerifMOACFunction-mta NAME BINDING
SUBORDINATE OBJECT CLASS secVerifMOACFunction;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE secVerifMOACFunctionId;
BEHAVIOUR secVerifMOACFunction-mtaBehaviour BEHAVIOUR
DEFINED AS
    "If the MTA has supported the verification of security attributes of a message, then an instance of the
    secVerifGenMsgFunction Managed Object class is created";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secVerifMOACFunction-mta};
```

14.30 SecVerifPOACFunction-mta

```
secVerifPOACFunction-mta NAME BINDING
SUBORDINATE OBJECT CLASS secVerifPOACFunction;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE secVerifPOACFunctionId;
BEHAVIOUR secVerifPOACFunction-mtaBehaviour BEHAVIOUR
DEFINED AS
    "If the MTA has supported the verification of security attributes of a message, then an instance of the
    secVerifGenMsgFunction Managed Object class is created";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secVerifPOACFunction-mta};
```

14.31 SecVerifROACFunction-mta

```
secVerifROACFunction-mta NAME BINDING
SUBORDINATE OBJECT CLASS secVerifROACFunction;
NAMED BY SUPERIOR OBJECT CLASS mta;
WITH ATTRIBUTE secVerifROACFunctionId;
BEHAVIOUR secVerifROACFunction-mtaBehaviour BEHAVIOUR
DEFINED AS
    "If the MTA has supported the verification of security attributes of a message, then an instance of the
    secVerifGenMsgFunction Managed Object class is created";;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-secVerifROACFunction-mta};
```

14.32 ThresholdData-ConversionCurrentData

```
thresholdData-conversionCurrentData NAME BINDING
SUBORDINATE OBJECT CLASS thresholdData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS conversionCurrentData;
WITH ATTRIBUTE thresholdDataId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-thresholdData-conversieCurrentData};
```

14.33 ThresholdData-DLCurrentData

```
thresholdData-dlCurrentData NAME BINDING
SUBORDINATE OBJECT CLASS thresholdData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS dlCurrentData;
WITH ATTRIBUTE thresholdDataId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-thresholdData-dlCurrentData};
```

14.34 ThresholdData-perfMTACurrentData

```
thresholdData-perfMTACurrentData NAME BINDING
SUBORDINATE OBJECT CLASS thresholdData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS perfMTACurrentData;
WITH ATTRIBUTE thresholdDataId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-thresholdData-perfMTACurrentData};
```

14.35 ThresholdData-routingCurrentData

```
thresholdData-routingCurrentData NAME BINDING
SUBORDINATE OBJECT CLASS thresholdData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS routingCurrentData;
WITH ATTRIBUTE thresholdDataId;
CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
        DELETES-CONTAINED-OBJECTS;
REGISTERED AS {MhsMgntMTAObjectIdentifiers.id-name-binding-thresholdData-routingCurrentData};
```

SECTION 4 – CONFORMANCE STATEMENTS

15 Conformance statements

There are three conformance classes:

the basic MTA Management conformance class;

the conditional MTA Management conformance class; and

the optional MTA Management conformance class.

A system claiming conformance to this Recommendation | Standard shall comply with the requirements of the basic MTA Management conformance class and may additionally comply with one or more others classes. Table 19 provides a summary of conformance classes.

Table 1 – Conformance classes and optional functions

Conformance Class	Functions	Status	Managed Objects
Basic MTA Management conformance class	Basic MTA Management functions	M	mta, mtsUser, adjMTA, , routingFunction
Conditional MTA Management conformance class	Distribution List Expansion Management function	C Mandatory if X.400 Distribution List is supported)	distributionListFunction
	Conversion Management function	C (Mandatory if X.400 Conversion is supported)	conversionFunction
Optional MTA Management conformance class	MPR and Associations processing control Management function	O	association, MprList, Mpr
	Secure MPR and Associations Management function	O	secAdjMTA, secMtsUser, secAssociation, secMessage, secProbe, secReport
	MPR Authentification Management function	O	SecVerifGenRecipFunction, SecGenMsgFunction, SecVerifPOACFunction, SecVerifMOACFunction, SecurityVerifROACFunction
	Secure Conversion Management function	O	SecConversionFunction
	Logging of MTA	O	(Note)
	MTA Performance Management function	O	perfMTACurrentData, perfMTAHistoryData, thresholdData
	Routing Performance Management function	O	perfFunctionCurrentData, perfFunctionHistoryData, thresholdData
	Distribution List Performance Management function	O	perfFunctionCurrentData, perfFunctionListData, thresholdData
	Conversion Performance Management function	O	perfFunctionCurrentData, perfFunctionHistoryData, thresholdData

M = Mandatory
C = Conditional
O = Optional

NOTE – Conformance statements related to logging of the managed MTA activity are described in ITU-Rec. X.462 | ISO/IEC 11588-3.

15.1 Statement requirements

The following shall be stated when claiming conformance:

a) the optional MTA functions for which conformance is claimed;

b) the OSI management application-context for which conformance is claimed.

15.2 Basic MTA management conformance class

A system claiming conformance to the Basic MTA Management conformance class shall support the system management function for the Management Information related to:

a) the main capabilities and the Routing function of the managed MTA;

b) the adjacent MTAs and MTS Users of the managed MTA.

15.2.1 Static conformance

A system shall:

a) support the mta and routingFunction managed object classes;

b) support, for each adjacent MTA of the managed MTA, the adjMTA managed object class;

c) support, for each MTS User of the managed MTA, the mtsUser managed object class;

d) support the role of manager or agent or both, with respect to this MTA Management Information.

15.3 Conditional MTA Management conformance class

Support of the conditional MTA Management functions is mandatory under the following conditions:

a) support for the Distribution List Management function is mandatory if the MTA claims to support this Recommendation | International Standard and claims to support the MHS Distribution List Expansion function defined in ITU-T Rec. X.411 | ISO/IEC 10021-4;

b) support for the Conversion Management function is mandatory if the MTA claims to support this Recommendation | International Standard and claims to support the MHS Conversion function defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

15.3.1 Distribution List Expansion Management Function

A system claiming conformance to the Distribution List Expansion Management Function shall support the system management function for the Management Information related to the Distribution List Expansion function of the managed MTA.

15.3.1.1 Static conformance

A system shall:

a) support the DistributionListFunction managed object class;

b) support the role of manager or agent or both, with respect to this MTA Management Information.

15.3.2 Conversion Management Function

A system claiming conformance to Conversion Management Function shall support the system management function for the Management Information related to each type of conversion supported by the managed MTA.

15.3.2.1 Static conformance

A system shall:

a) support, for each type of conversion, the ConversionFunction managed object class;

b) support the role of manager or agent or both, with respect to this MTA Management Information.

15.4 Optional MTA Management conformance class

A system claiming conformance to the Optional MTA Management conformance shall state to which optional function conformance is claimed.

15.4.1 MPR and Associations processing control Function

A system claiming conformance to the MPR and Associations processing control Function shall support the system management function for the Management Information related to:

a) each MPR processed by the managed MTA;

b) each association established with the managed MTA.

15.4.1.1 Static conformance

A system shall:

a) support the mprList managed object class;

b) support, for each MPR processed by the managed MTA, when requested by the MHS system manager, the mpr managed object class;

c) support, for each association established with an adjacent MTA, the association managed object class;

d) support, for each association established with an MTS USer, the association managed object class;

e) support the role of manager or agent or both with respect to this MTA Management Information.

15.4.2 Secure MPR and Associations Management function

A system claiming conformance to the Secure MPR and Associations Management function shall support the system management function for the Management Information related to:

a) each secure MPR processed by the managed MTA;

b) each secure association established with the managed MTA.

15.4.2.1 Static conformance

A system shall:

a) support, for each adjacent MTA of the managed MTA, the secAdjMTA managed object class;

b) support, for each MTS User of the managed MTA, the secMtsUser managed object class;

c) support, when requested by the MHS system manager, the secMessage, secProbe or secReport managed object class;

d) support, for each secure association established with an adjacent MTA, the secAssociation managed object class;

e) support, for each secure association established with an MTS USer, the secAssociation managed object class;

f) support the role of manager or agent or both, with respect to this MTA Management Information.

15.4.3 MPR Authentification Management function

A system claiming conformance to the MPR Authentification Management function shall support the system management function for the Management Information related to:

a) the verification of MPR authentification check attributes;

b) the generation of MPR authentification check attributes.

15.4.3.1 Static conformance

A system shall:

a) support the SecVerifGenRecipFunction, SecGenMsgFunction, SecVerifPOACFunction, SecVerifMOACFunction and SecurityVerifROACFunction managed object classes;

b) support the role of manager or agent or both, with respect to this MTA Management Information.

15.4.4 Secure Conversion Management function

A system claiming conformance to Secure Conversion Management Function shall support the system management function for the Management Information related to each type of secure conversion supported by the managed MTA.

15.4.4.1 Static conformance

A system shall:

a) support, for each type of secure conversion, the secConversionFunction managed object class;

b) support the role of manager or agent or both, with respect to this MTA Management Information.

15.4.5 MTA Performance Management function

A system claiming conformance to MTA Performance Management function shall support the system management function for the Management Information related to the performance of the managed MTA.

15.4.5.1 Static conformance

A system shall:

a) support, when requested by the MHS system manager, the perfMTACurrentData, perfMTAHistoryData, and thresholdData managed object classes;

b) support the role of manager or agent or both, with respect to this MTA Management Information.

15.4.6 Routing Performance Management function

A system claiming conformance to the Routing Performance Management function shall support the system management function for the Management Information related to the performance of the managed MTA Routing function.

15.4.6.1 Static conformance

A system shall:

a) support, when requested by the MHS system manager, the perfFunctionCurrentData, perfFunctionHistoryData, and thresholdData managed object classes;

b) support the role of manager or agent or both with respect to this MTA Management Information.

15.4.7 Distribution List Performance Management function

A system claiming conformance to the Distribution List Performance Management function shall support the system management function for the Management Information related to the performance of the managed MTA Distribution List Expansion function.

15.4.7.1 Static conformance

A system shall:

a) support, when requested by the MHS system manager, the perfFunctionCurrentData, perfFunctionHistoryData, and thresholdData managed object classes;

b) support the role of manager or agent or both, with respect to this MTA Management Information.

15.4.8 Conversion Performance Management function

A system claiming conformance to the Conversion Performance Management function shall support the system management function for the Management Information related to the performance of the managed MTA Conversion function.

15.4.8.1 Static conformance

A system shall:

a) support, for each type of conversion, when requested by the MHS system manager the perfFunctionCurrentData, perfFunctionHistoryData, and thresholdData managed object classes;

b) support the role of manager or agent or both, with respect to this MTA Management Information.

Annex A

ASN.1 definitions

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

A.1 ObjectIdentifiers

This subclause contains the ASN.1 module that defines the object identifiers referenced by the "REGISTERED AS" statement of the GDMO templates in clauses 9-11 to 14.

MhsMTAObjectIdentifiers {joint-iso-ccitt mhs(6) *management (9) mta (8) modules (8) object-identifiers (0)* **}**

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

-- *Prologue*

-- *Exports everything*

IMPORTS -- *nothing --;*

ID ::= OBJECT IDENTIFIER

-- *MHS management*
mhs-management ID ::= {joint-iso-*itu-t* **mhs(6) management(9) }** -- *Not definitive*

-- *MTA Entity*
id-mta ID ::={mhs-management 8} -- *imported from X.462*

-- *Template types*

id-moc ID ::= {id-mta 0} -- Managed Object Class templates
id-package ID ::= {id-mta 1} -- Package templates
id-attribute ID ::= {id-mta 2} -- Attribute templates
id-name-binding ID ::= {id-mta 7} -- Name Binding templates
id-modules Id ::= {id-mta 8} -- Modules -- Not definitive

-- *Managed Object Classes*

id-moc-adjMTA ID ::={id-moc 0}
id-moc-association ID ::={id-moc 1}
id-moc-conversionFunction ID ::={id-moc 2}
id-moc-distributionListFunction ID ::={id-moc 3}
id-moc-mpr ID ::={id-moc 4}
id-moc-mprList ID ::={id-moc 5}
id-moc-mta ID ::={id-moc 6}
id-moc-mtsUser ID ::={id-moc 7}
id-moc-perfFunctionCurrentData ID ::={id-moc 8}
id-moc-perfFunctionHistoryData ID ::={id-moc 9}
id-moc-perfMTACurrentData ID ::={id-moc 10}
id-moc-perfMTAHistoryData ID ::={id-moc 11}
id-moc-routingFunction ID ::={id-moc 12}
id-moc-secAdjMTA ID ::={id-moc 13}
id-moc-secAssociation ID ::={id-moc 14}
id-moc-secConversion ID ::={id-moc 15}
id-moc-secGenROACFunction ID ::={id-moc 16}
id-moc-secMessage ID ::={id-moc 17}
id-moc-secMtsUser ID ::={id-moc 18}
id-moc-secProbe ID ::={id-moc 19}
id-moc-secReport ID ::={id-moc 20}
id-moc-SecVerifGenMsgFunction ID ::={id-moc 21}
id-moc-SecVerifGenRecipFunction ID ::={id-moc 22}
id-moc-SecVerifMOACFunction ID ::={id-moc 23}
id-moc-SecVerifPOACFunction ID ::={id-moc 24}
id-moc-SecVerifROACFunction ID ::={id-moc 25}

-- *Packages*

id-package-adjMTAPackage ID ::={id-package 0}
id-package-associationPackage ID ::={id-package 1}
id-package-conversionPackage ID ::={id-package 2}
id-package-defaultDeliveryControlsPackage ID ::={id-package 3}
id-package-dirServiceReferencePackage ID ::={id-package 4}
id-package-distributionListPackage ID ::={id-package 5}
id-package-filterPackage ID ::={id-package 6}
id-package-mdAssignedAlternateRecipientPackage ID ::={id-package 7}
id-package-mprListPackage ID ::={id-package 8}
id-package-mprPackage ID ::={id-package 9}
id-package-mprProcessingControlPackage ID ::={id-package 10}
id-package-mtaFunctionStatisticsPackage ID ::={id-package 11}
id-package-mtaPackage ID ::={id-package 12}
id-package-mtaStatisticsPackage ID ::={id-package 13}
id-package-mtsUserPackage ID ::={id-package 14}
id-package-restrictedDeliveryPackage ID ::={id-package 15}
id-package-routingPackage ID ::={id-package 16}
id-package-secAdjMTAPackage ID ::={id-package 17}
id-package-secAssociationPackage ID ::={id-package 18}
id-package-secConversionPackage ID ::={id-package 19}
id-package-secGenROACFunctionPackage ID ::={id-package 20}
id-package-secMessagePackage ID ::={id-package 21}
id-package-secMtsUserPackage ID ::={id-package 22}
id-package-secProbePackage ID ::={id-package 23}
id-package-secReportPackage ID ::={id-package 24}
id-package-secureRedirectionPackage ID ::={id-package 25}
id-package-SecurityAlarmPackage ID ::={id-package 26}
id-package-secVerifGenMsgFunctionPackage ID ::={id-package 27}
id-package-secVerifGenRecipFunctionPackage ID ::={id-package 28}
id-package-secVerifMOACFunctionPackage ID ::={id-package 29}
id-package-secVerifPOACFunctionPackage ID ::={id-package 30}
id-package-secVerifROACFunctionPackage ID ::={id-package 31}
id-package-simpleCredentialsPackage ID ::={id-package 32}
id-package-simpleRedirectionPackage ID ::={id-package 33}
id-package-statesOfMtaFunctionPackage ID ::={id-package 34}

-- *Attributes*

id-attribute-adjMtaAccessPointAddress ID ::={id-attribute 0}
id-attribute-adjMtaGlobalDomainId ID ::={id-attribute 1}
id-attribute-adjMtaMaxMessageSize ID ::={id-attribute 2}
id-attribute-adjMtaName ID ::={id-attribute 3}
id-attribute-adjMtaObjectInstanceId ID ::={id-attribute 4}
id-attribute-adjMtaPossibleConversions ID ::={id-attribute 5}
id-attribute-adjMtaSimpleCredentials ID ::={id-attribute 6}
id-attribute-adjMtaStrongCredentials ID ::={id-attribute 7}
id-attribute-adjMtaSupportedApplicationContexts ID ::={id-attribute 8}
id-attribute-applicationContext ID ::={id-attribute 9}
id-attribute-arrivalTime ID ::={id-attribute 10}
id-attribute-associationInitiator ID ::={id-attribute 11}
id-attribute-associationObjectInstanceId ID ::={id-attribute 12}
id-attribute-bilateralDeferral ID ::={id-attribute 13}
id-attribute-colocated ID ::={id-attribute 14}
id-attribute-contentIntegrityCheck ID ::={id-attribute 15}
id-attribute-contentType ID ::={id-attribute 16}
id-attribute-contentTypesSupported ID ::={id-attribute 17}
id-attribute-conversionCredentials ID ::={id-attribute 18}
id-attribute-conversionFunctionObjectInstanceId ID ::={id-attribute 19}
id-attribute-conversionSecurityContext ID ::={id-attribute 20}
id-attribute-conversionSecurityLabels ID ::={id-attribute 21}
id-attribute-conversionType ID ::={id-attribute 22}
id-attribute-creationTime ID ::={id-attribute 23}
id-attribute-defaultNonUrgentMprExpiryDuration ID ::={id-attribute 24}
id-attribute-defaultNormalMprExpiryDuration ID ::={id-attribute 25}

id-attribute-defaultPermissibleContentTypes ID ::={id-attribute 26}
id-attribute-defaultPermissibleEITs ID ::={id-attribute 27}
id-attribute-defaultPermissibleLowestPriority ID ::={id-attribute 28}
id-attribute-defaultPermissibleMaxContentLength ID ::={id-attribute 29}
id-attribute-defaultPermissibleOperations ID ::={id-attribute 30}
id-attribute-defaultUrgentMprExpiryDuration ID ::={id-attribute 31}
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id-attribute-disallowedMessages ID ::={id-attribute 34}
id-attribute-distributionListObjectInstanceId ID ::={id-attribute 35}
id-attribute-eits ID ::={id-attribute 36}
id-attribute-forcedExpiryDuration ID ::={id-attribute 37}
id-attribute-forcedProcessingPriority ID ::={id-attribute 38}
id-attribute-globalDomainId ID ::={id-attribute 39}
id-attribute-heldByManager ID ::={id-attribute 40}
id-attribute-informationLossSuspected ID ::={id-attribute 41}
id-attribute-initiatorAccessPointAddress ID ::={id-attribute 42}
id-attribute-initiatorCredentials ID ::={id-attribute 43}
id-attribute-initiatorSecurityContext ID ::={id-attribute 44}
id-attribute-initiatorStrongCredentials ID ::={id-attribute 45}
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id-attribute-localMTAMaxMessageSize ID ::={id-attribute 47}
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id-attribute-localMTAStrongCredentials ID ::={id-attribute 49}
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id-attribute-maxAdjMTAOutboundAssocs ID ::={id-attribute 51}
id-attribute-maxFunctionProcessingTime ID ::={id-attribute 52}
id-attribute-maxMTAResponseTime ID ::={id-attribute 53}
id-attribute-maxMtsUserInboundAssocs ID ::={id-attribute 54}
id-attribute-maxMtsUsersOutboundAssocs ID ::={id-attribute 55}
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id-attribute-maxSizeMprPassingFunction ID ::={id-attribute 57}
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id-attribute-messageMOACAlg ID ::={id-attribute 73}
id-attribute-messageOriginatorCertificate ID ::={id-attribute 74}
id-attribute-messageOriginAuthenticationCheck ID ::={id-attribute 75}
id-attribute-messageSecurityLabel ID ::={id-attribute 76}
id-attribute-messageToken ID ::={id-attribute 77}
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id-attribute-minMTAResponseTime ID ::={id-attribute 79}
id-attribute-minSizeMprDelivered ID ::={id-attribute 80}
id-attribute-minSizeMprPassingFunction ID ::={id-attribute 81}
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id-attribute-minSizeMprTransferredIn ID ::={id-attribute 83}
id-attribute-minSizeMprTransferredOut ID ::={id-attribute 84}
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id-attribute-mprObjectInstanceId ID ::={id-attribute 87}
id-attribute-mtaName ID ::={id-attribute 88}
id-attribute-mtsIdentifier ID ::={id-attribute 89}
id-attribute-mtsUserAccessPointAddress ID ::={id-attribute 90}
id-attribute-mtsUserDeliverableContentTypes ID ::={id-attribute 91}
id-attribute-mtsUserDeliverableEits ID ::={id-attribute 92}
id-attribute-mtsUserDeliverableMaxContentLength ID ::={id-attribute 93}

id-attribute-mtsUserDeliveryControls ID ::={id-attribute 94}
id-attribute-mtsUserName ID ::={id-attribute 95}
id-attribute-mtsUserObjectInstanceId ID ::={id-attribute 96}
id-attribute-mtsUserPreferredDeliveryMethod ID ::={id-attribute 97}
id-attribute-mtsUserSimpleCredentials ID ::={id-attribute 98}
id-attribute-mtsUserStrongCredentials ID ::={id-attribute 99}
id-attribute-mtsUserSupportedApplicationContexts ID ::={id-attribute 100}
id-attribute-mtsUserTypeID ::={id-attribute 101}
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id-attribute-newMessageMOACAlg ID ::={id-attribute 103}
id-attribute-newMessageOriginatorCertificate ID ::={id-attribute 104}
id-attribute-newRecipientCicAlg ID ::={id-attribute 105}
id-attribute-newRecipientName ID ::={id-attribute 106}
id-attribute-newRecipientTokenAlg ID ::={id-attribute 107}
id-attribute-newRecipientTokenEncAlg ID ::={id-attribute 108}
id-attribute-newRecipientTokenSigAlg ID ::={id-attribute 109}
id-attribute-nextAdjMTAName ID ::={id-attribute 110}
id-attribute-nrOfMprDeferred ID ::={id-attribute 111}
id-attribute-nrOfMprDelivered ID ::={id-attribute 112}
id-attribute-nrOfInvocations ID ::={id-attribute 113}
id-attribute-nrOfRecipientsProcessed ID ::={id-attribute 114}
id-attribute-nrOfMprRedirected ID ::={id-attribute 115}
id-attribute-nrOfMprRejected ID ::={id-attribute 116}
id-attribute-nrOfRejectedInvocations ID ::={id-attribute 117}
id-attribute-nrOfMprSubmitted ID ::={id-attribute 118}
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id-attribute-nrOfMprTransferredOut ID ::={id-attribute 120}
id-attribute-originatorName ID ::={id-attribute 121}
id-attribute-permittedMessages ID ::={id-attribute 122}
id-attribute-priority ID ::={id-attribute 123}
id-attribute-priorityList ID ::={id-attribute 124}
id-attribute-probeOriginatorCertificate ID ::={id-attribute 125}
id-attribute-probeOriginAuthenticationCheck ID ::={id-attribute 126}
id-attribute-probePOACAlg ID ::={id-attribute 127}
id-attribute-probeSecurityLabel ID ::={id-attribute 128}
id-attribute-processingState ID ::={id-attribute 129}
id-attribute-processingSummary ID ::={id-attribute 130}
id-attribute-proofOfDelivery ID ::={id-attribute 131}
id-attribute-proofOfDeliveryRequest ID ::={id-attribute 132}
id-attribute-recipientCertificate ID ::={id-attribute 133}
id-attribute-recipientCicAlg ID ::={id-attribute 134}
id-attribute-recipientName ID ::={id-attribute 135}
id-attribute-recipientsNames ID ::={id-attribute 136}
id-attribute-recipientTokenAlg ID ::={id-attribute 137}
id-attribute-recipientTokenEncAlg ID ::={id-attribute 138}
id-attribute-recipientTokenSigAlg ID ::={id-attribute 139}
id-attribute-redirectionRecipient ID ::={id-attribute 140}
id-attribute-redirections ID ::={id-attribute 141}
id-attribute-reportOriginatorCertificate ID ::={id-attribute 142}
id-attribute-reportOriginAuthenticationCheck ID ::={id-attribute 143}
id-attribute-reportROACAlg ID ::={id-attribute 144}
id-attribute-reportSecurityLabel ID ::={id-attribute 145}
id-attribute-responderAccessPointAddress ID ::={id-attribute 146}
id-attribute-responderCredentials ID ::={id-attribute 147}
id-attribute-responderStrongCredentials ID ::={id-attribute 148}
id-attribute-routingFunctionObjectInstanceId ID ::={id-attribute 149}
id-attribute-secAdjMTAObjectInstanceId ID ::={id-attribute 150}
id-attribute-secAssociationObjectInstanceId ID ::={id-attribute 151}
id-attribute-secConversionObjectInstanceId ID ::={id-attribute 152}
id-attribute-secGenROACObjectInstanceId ID ::={id-attribute 153}
id-attribute-secMessageObjectInstanceIdID ::={id-attribute 154}
id-attribute-secMtsUserObjectInstanceId ID ::={id-attribute 155}
id-attribute-secProbeObjectInstanceId ID ::={id-attribute 156}
id-attribute-secReportObjectInstanceId ID ::={id-attribute 157}
id-attribute-securityLabels ID ::={id-attribute 158}
id-attribute-secVerifGenMsgObjectInstanceId ID ::={id-attribute 159}
Id-attribute-SecVerifGenRecipObjectInstanceId ID ::={id-attribute 160}
id-attribute-SecVerifGenRecipObjectInstanceId ID ::={id-attribute 161}

id-attribute-secVerifPOACObjectInstanceId ID ::={id-attribute 162}
id-attribute-secVerifROACObjectInstanceId ID ::={id-attribute 163}
id-attribute-supportedApplicationContexts ID ::={id-attribute 164}
id-attribute-typeOfMpr ID ::={id-attribute 165}
id-attribute-waitTimeToRelease ID ::={id-attribute 166}

-- *Name Bindings*

id-name-binding-adjMTA-mta ID ::={id-name-binding 0}
id-name-binding-association-adjMTA ID ::={id-name-binding 1}
id-name-binding-association-MtsUser ID ::={id-name-binding 2}
id-name-binding-conversionCurrentData-ConversionFunction ID ::={id-name-binding 3}
id-name-binding-conversionFunction-mta ID ::={id-name-binding 4}
id-name-binding-conversionHistoryData-ConversionCurrentData ID ::={id-name-binding 5}
id-name-binding-distributionListFunction-mta ID ::={id-name-binding 6}
id-name-binding-dLCurrentData-distibutionListFunction ID ::={id-name-binding 7}
id-name-binding-dLHistoryData-dLCurrentData ID ::={id-name-binding 8}
id-name-binding-mpr-mprList ID ::={id-name-binding 9}
id-name-binding-mprlist-mta ID ::={id-name-binding 10}
id-name-binding-mta-md ID ::={id-name-binding 11}
id-name-binding-MtsUser-mta ID ::={id-name-binding 12}
id-name-binding-perfMTACurrentData-mta ID ::={id-name-binding 13}
id-name-binding-perfMTAHistoryData-perfMTACurrentData ID ::={id-name-binding 14}
id-name-binding-routing-mta ID ::={id-name-binding 15}
id-name-binding-routingCurrentData-routingFunction ID ::={id-name-binding 16}
id-name-binding-routingHistoryData-routingCurrentData ID ::={id-name-binding 17}
id-name-binding-routingIndicator-routing ID ::={id-name-binding 18}
id-name-binding-secAdjMTA-adjMTA ID ::={id-name-binding 19}
id-name-binding-secAssociation-association ID ::={id-name-binding 20}
id-name-binding-secConversion-conversionFunction ID ::={id-name-binding 21}
id-name-binding-secDistributionList-distributionListFunction ID ::={id-name-binding 22}
id-name-binding-secGenROACFunction-mta ID ::={id-name-binding 23}
id-name-binding-secMessage-mpr ID ::={id-name-binding 24}
id-name-binding-secMtsUser-MtsUser ID ::={id-name-binding 25}
id-name-binding-secProbe-mpr ID ::={id-name-binding 26}
id-name-binding-secReport-mpr ID ::={id-name-binding 27}
id-name-binding-secRouting-routingIndicator ID ::={id-name-binding 28}
id-name-binding-secVerifGenMsgFunction-mta ID ::={id-name-binding 29}
id-name-binding-secVerifGenRecipFunction-mta ID ::={id-name-binding 30}
id-name-binding-secVerifMOACFunction-mta ID ::={id-name-binding 31}
id-name-binding-secVerifPOACFunction-mta ID ::={id-name-binding 32}
id-name-binding-secVerifROACFunction-mta ID ::={id-name-binding 33}
id-name-binding-thresholdData-conversionCurrentData ID ::={id-name-binding 34}
id-name-binding-thresholdData-dLCurrentData ID ::={id-name-binding 35}
id-name-binding-thresholdData-perfMTACurrentData ID ::={id-name-binding 36}
id-name-binding-thresholdData-routingCurrentData ID ::={id-name-binding 37}

END -- *of MhsMgntMTAObjectIdentifiers*

A.2 ASN.1 notations

MhsMTAAsn1Module { joint-iso-ccitt mhs(6) *management (9) mta (8) modules (8) asn1-module (1)* **}**

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

-- *Prologue*

-- *Exports everything*

IMPORTS

-- *MTS abstract service parameters*

ContentIntegrityCheck,
ContentLength,
ContentType,
Credentials,
EncodedInformationTypes,

ExplicitConversion,
GlobalDomainIdentifier,
MessageOriginAuthenticationCheck,
MessageToken,
MTAName,
MTSIdentifier,
Operations,
ORAddress,
OriginatorCertificate,
ORName,
Password,
Priority,
ProbeOriginAuthenticationCheck,
ProofOfDelivery,
ProofOfDeliveryRequest,
PSAPAddress,
RecipientCertificate,
ReportingMTACertificate,
ReportOriginAuthenticationCheck,
RequestedDeliveryMethod,
Restriction,
SecurityContext,
SecurityLabel,
StrongCredentials,
Time

FROM MTSAbstractService { joint-iso-ccitt mhs-motis(6) mts(3) modules(0) mts-abstract-service(1) *version-1994 (1)* **}**

-- *AuthenticationFramework parameters*

AlgorithmIdentifier

FROM AuthenticationFramework { joint-iso-ccitt ds(5) modules(1) authenticationFramework(7) *2* **}**

-- *InformationFramework parameters*

Name, *DistinguishedName*

FROM AuthenticationFramework { joint-iso-ccitt ds(5) modules(1) InformationFramework(1) *2* **};**

-- *Supporting productions*

ApplicationContext ::= OBJECT IDENTIFIER

ApplicationContexts ::= SET OF ApplicationContext

AssociationInitiator ::= INTEGER { local (0), remote (1) }

BilateralDeferral ::= INTEGER { agreement (0), no-agreement (1) }

Colocated ::= BOOLEAN -- *colocated is true, remote is false*

ContentTypes ::= SET OF ContentType

DurationInSeconds ::=INTEGER

EMailAccessPointAddress ::= CHOICE {
psap [0] PsapAddress,
genericAddress [1] GenericAddress}
-- *The genericAddress encoding may be used for non-standardised access point addresses. The description of*
-- *the use of this generic type is beyond the scope of this Recommendation | International Standard.*

EMailContentType ::= ContentType

EmailContentTypes ::= SET OF EMailContentType

EMailConversionType::= CHOICE {
x400Conversion [0] ExplicitConversion,
genericConversion [1] GenericConversion }

```
-- The genericConversion type encoding may be used for the description of non-standardised conversion
-- types. The description of the use of this generic type is beyond the scope of this
-- Recommendation | International Standard.

EMailCredentials ::= CHOICE {
        simple   EMailSimpleCredentials,
        strong   EMailStrongCredentials }

EMailDirectoryName ::= CHOICE {
        x500DirectoryName     [0] Name,
        genericNames      [1]   SET OF GenericName }
-- The genericNames encoding may be used for the description of non X.500 directory access. The description of
-- the use of this generic type is beyond the scope of this Recommendation | International Standard.

EMailEits ::= CHOICE {
        x400EIT      [0]   EncodedInformationTypes,
        genericEITs  [1]   SEQUENCE OF OBJECT IDENTIFIER}
-- The genericEITs encoding may be used for the description of non-standardised EITs. The description of
-- the use of this generic type is beyond the scope of this Recommendation | International Standard.

EMailGlobalDomainId ::= CHOICE {
        x400GlobalDomainId   [0] GlobalDomainIdentifier,
        genericGlobalDomainId    [1]   GenericName }
-- The genericGlobalDomainId encoding may be used for the description of non-standardised global domain
-- identifiers. The description of the use of this generic type is beyond the scope of this
-- Recommendation | International Standard.

EMailMpduIdentifier ::= CHOICE {
        x400MTSIdentifier      [0] MTSIdentifier,
        genericMpduIdentifier [1] GenericMessageId }
-- The genericMpduIdentifier encoding may be used for the description of non-standardised MPDU identifier.
-- The description of the use of this generic type is beyond the scope of this
-- Recommendation | International Standard.

EMailMtaName ::= CHOICE {
        x400MTAName    [0]   MTAName,
        genericMTAName       [1] GenericName }
-- The genericMTAName encoding may be used for the description of non-standardised MTA names.
-- The description of the use of this generic type is beyond the scope of this
-- Recommendation | International Standard.

EMailMtsUserName ::= CHOICE {
        x400ORName      [0]   ORName,
        genericName[1]   GenericName }
-- The genericName encoding may be used for the description of non-standardised MTs User name. The description
-- of the use of this generic type is beyond the scope of this Recommendation | International Standard.

EMailMtsUserNames ::=SET OF EMailMtsUserName

EMailRedirections ::= SET {
        label     Label,
        address CHOICE {
           none NULL,
           email-addr       EMailMtsUserName } }

Label       ::= INTEGER

EMailSimpleCredentials ::= Password

EMailStrongCredentials ::= CHOICE {
        x400StrongCredentials [0] StrongCredentials,
        genericStrongCredentials   [1]   GenericStrongCredentials }
-- The genericStrongCredentials encoding may be used for the description of non-standardised credentials.
-- The description of the use of this generic type is beyond the scope of this
-- Recommendation | International Standard.
```

```
GenericAddress ::= SEQUENCE {
        displayFormat      IA5String,
        typedFormatEXTERNAL }
--      The allocation of the Object Identifier values related to the EXTERNAL type is beyond the scope of this
--       Recommendation | International Standard.

GenericConversion ::= OBJECT IDENTIFIER
--      The allocation of the Object Identifier values related to the EXTERNAL type is beyond the scope of this
--      Recommendation | International Standard.

GenericStrongCredentials ::= EXTERNAL
--      The allocation of the Object Identifier values related to the EXTERNAL type is beyond the scope of this
--      Recommendation | International Standard.

GenericMessageId ::= SEQUENCE {
        displayFormat      IA5String,
        typedFormatEXTERNAL }
--      The allocation of the Object Identifier values related to the EXTERNAL type is beyond the scope of this
--      Recommendation | International Standard.

GenericName ::= SEQUENCE {
        displayFormat      IA5String,
        typedFormatEXTERNAL }
--      The allocation of the Object Identifier values related to the EXTERNAL type is beyond the scope of this
--      Recommendation | International Standard.

HeldByManager::= BOOLEAN      --      Held is true, not held is false

InformationLossSuspected ::= BOOLEAN
--      Loss suspected is true, Loss not suspected is false

MprInfo ::= SET OF SEQUENCE {
        mprId   EMailMpduIdentifier,
        arrivalTime   Time,
        processingState      ProcessingState }

MtsUserType ::= INTEGER { ms(1), ua(2), au(3) }

NumberOfAssociations ::= INTEGER

ObjectIdOrDN ::=CHOICE {
        distinguishedName      DistinguishedName,
        oid       OBJECT IDENTIFIER }

Percent ::= INTEGER (0 . . 100)

PriorityList ::= SET OF Priority

ProcessingState ::= INTEGER {
    idle(0),
    processed(1),
    rejected(2),
    name-resolution (3),
    dl-expansion (4),
    redirection (5),
    deferred-delivery(6),
    conversion (7),
    securityContextCheck (8),
    unknownFunction (9) }
--      A processing state set to 'idle' indicates that the MPR is waiting to be processed. A processing state set to
--      'processed' indicates that the MPR was successfully processed. A processing state set to 'rejected' indicates that
--      the MTS was not able to deliver the message or the report or affirm the probe. A processing state set to
--      'name-resolution', 'redirection', 'deferred-delivery', 'conversion' or 'securityContextCheck' indicates that the MPR
--      is currently performing the corresponding function on the MPR. The value 'unknownFunction' indicates that
--      the MTA is currently performing a function on the MPR that is not name resolution, dl expansion, redirection,
--      deferred-delivery, conversion or security Context Check.
```

```
ProcessingSummary ::= BIT STRING {
    idle(0),
    processed(1),
    rejected(2),
    name-resolution (3),
    dl-expansion (4),
    redirection (5),
    deferred-delivery(6),
    conversion (7),
    securityContextCheck (8)}
--      at most one of idle, processed, and rejected bits shall be ’one’:
--      – idle bit 'one' means the MPR is waiting to be processed;
--      – processed bit 'one' means the MPR was successfully processed;
--      – rejected bit 'one' means that the MTS was not able to deliver the message or the report or affirm the probe;
--      – idle, processed, and rejected bits 'zero' mean the MPR is currently under process.
--      A 'name-resolution', 'redirection', 'deferred-delivery', 'conversion' or 'securityContextCheck' bit one means the
--      corresponding function was successfully performed on the MPR. If idle bit is set to 'one' (MPR idle),
--      dl-expansion, redirection, deferred-delivery and conversion bits shall be set to 'zero'.

Restrictions ::= SET OF Restriction

SecurityLabels ::= SET OF SecurityLabels

SizeInOctets ::= INTEGER

TypeOfMpr ::= INTEGER {message (0), probe (1), report(2) }

END
```

Annex B

Performance management according to X.700-Series Recommendations

(This annex does not form an integral part of this Recommendation | International Standard)

This annex discusses the use of Recommendation Q.822 for X.400 performance management in favour of the use of System Management Functions (SMFs) of X.700-Series Recommendations.

B.1 Q.822

Recommendation Q.822 provides a stage 1, stage 2 and stage 3 description for the Q3 interface concerning performance management. Its focus is the parameter collection and storage, and the threshold aspects of performance management. Recommendation Q.822 provides a template in which performance management data is gathered. This is done by defining a currenData and a historyData managed object class which contain the performance parameters over a pre-defined (granularity) period which is considered as a measurement interval. A thresholdData object contains a set of thresholds which apply to parameters in the currentData object(s).

B.2 SMFs

The SMFs of X.700-Series Recommendations are concerned with the providing of common management tasks in a way that is general-purpose not specific to managed objects of particular types. The SMFs that apply for X.400 performance management are:

– X.738 (summarisation function)

  This function provides the ability to aggregate observed attribute values and/or provide ensemble statistical information about observed attribute values. It captures data by sampling the values of specified attributes at intervals defined by a granularity period.

– X.739 (metric objects and attributes)

  This function provides the ability to observe characteristics of resources either directly within observable managed objects or through the use of managed objects. Data is captured by sampling at intervals specified by the granularity period.

B.3 Example of use

1) In the case that Recommendation Q.822 is used to gather performance data, the attributes in the performance object are the actual performance data required. How it is gathered, is not discussed within Recommendation Q.822. For instance gathering the minimum message size is looking up its value in the performance object. This is a top-down approach.

2) In the case that the SMFs of Recommendation X.700 are used to gather performance data, the basic information used to compose the performance data is part of the (MTA) model. For instance, to retrieve the minimum size of the transferred messages, all messages size attributes have to be scanned. This is a bottom up approach.

B.4 (Dis-)advantages

The disadvantage of both Recommendations X.738 and X.739 is the data capture method. Performance data is sampled at intervals, which is not appropriate for all kinds of parameters. For instance, response time of a message is not a parameter that is to be sampled, it is just observed as one of the message attributes. If Recommendation Q.822 is used in the context of TMNs network management layer, it allows the capture of minimum, mean and maximum values for the response times.

By the use of a filtering package in the MTA management Recommendation International Standard |, a dedicated performance object is constructed. It contains the performance data for a specific message and priority. Along with the fact that Recommendation Q.822 specifies performance data on a higher level, this dramatically reduces the number of performance attributes to be defined.

An advantage of Recommendation Q.822 is that the threshold aspects are taken care of.

The systems management function as described in Recommendation X.738 can be used to scan the contents of Q.822's history- or currentData objects.

Annex C

Index of management information

(This annex does not form an integral part of this Recommendation | International Standard)

C.1 Index of managed object classes

C.2 Index of packages

C.3 Index of attributes

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