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COMMUNICATIONS

Open Systems Interconnection – Layer Managed Objects

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**Elements of management information related  
to the OSI data link layer**

ITU-T Recommendation X.282

(Previously CCITT Recommendation)

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ITU-T X-SERIES RECOMMENDATIONS  
DATA NETWORKS AND OPEN SYSTEM COMMUNICATIONS

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

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

## **ITU-T RECOMMENDATION X.282**

### **ELEMENTS OF MANAGEMENT INFORMATION RELATED TO THE OSI DATA LINK LAYER**

#### **Summary**

This revised Recommendation specifies the specification of management information related to the Data Link Layer, including the managed objects class definition of Data Link Layer managed objects, the relationship of the managed objects and attributes to both the operation of the layer and to other objects and attributes of the layer, and the allowable actions on the attributes of Data Link Layer managed objects.

#### **Source**

ITU-T Recommendation X.282 was revised by ITU-T Study Group 7 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 18th of June 1999.

## **FOREWORD**

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

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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## CONTENTS

	<i>Page</i>
1 Scope .....	1
2 References .....	1
2.1 Identical Recommendations   International Standards.....	1
2.2 Paired Recommendations   International Standards equivalent in technical content.....	2
2.3 Additional references .....	3
3 Definitions .....	3
3.1 Basic reference model.....	3
3.2 Management framework.....	3
3.3 Systems Management Overview .....	3
3.4 Common Management Information Service Definition .....	3
3.5 Information Model .....	3
3.6 GDMO .....	4
4 Abbreviations .....	4
5 Elements of Data Link Layer Management Information.....	5
5.1 Managed Object Hierarchy .....	5
5.2 Common Data Link Layer GDMO definitions.....	7
5.3 The Data Link Sub-system managed object.....	7
5.4 The Data Link Entity managed object.....	7
5.5 The Data Link Service Access Point managed object.....	8
5.6 The LAPB Data Link Entity managed object.....	9
5.7 The LAPB Single Link Protocol Machine managed object .....	11
5.8 The LAPB Single Link Protocol Connection managed object.....	12
5.9 The LAPB Single Link Protocol Connection Initial Values managed object.....	19
6 ASN.1 module .....	20
7 Conformance .....	22
7.1 Conformance requirements to this Recommendation.....	22
7.2 Protocol specific conformance requirements .....	22
Annex A – Allocation of Object Identifiers .....	23
Annex B – An Example of the use of Relationship Attributes .....	25
Annex C – Additional Attributes and Action required for Systems .....	26
C.1 Introduction.....	26
C.2 Scope.....	26
C.3 Attributes and Action .....	26
Annex D.....	27
Annex E – MCS proforma .....	27
E.1 Introduction.....	27
E.2 Identification of the implementation .....	28
E.3 Identification of the Recommendation in which the management information is defined.....	28
E.4 Management conformance summary.....	29

	<i>Page</i>
Annex F – MICS proforma .....	35
F.1    Introduction .....	35
F.2    Instructions for completing the MICS proforma to produce a MICS .....	35
F.3    Symbols, abbreviations and terms .....	35
F.4    Statement of conformance to the management information .....	35
Annex G – MOCS proforma .....	61
G.1    Introduction .....	61
G.2    The Data Link Service Access Point managed object .....	61
G.3    The Data Link Subsystem managed object .....	64
G.4    The EWMA Metric Monitor managed object .....	66
G.5    The LAPB Data Link Entity managed object .....	74
G.6    The LLC Connectionless Protocol Machine managed object .....	81
G.7    The LLC Connection-mode Protocol Machine managed object .....	81
G.8    The LLC Data Link Entity managed object .....	81
G.9    The MAC managed object .....	88
G.10    The MAC Data Link Entity managed object .....	88
G.11    The Resource TypeId managed object .....	95
G.12    The LAPB Single Link Protocol Connection managed object .....	98
G.13    The LAPB Single Link Protocol Connection Initial Values managed object .....	109
G.14    The LAPB Single Link Protocol Machine managed object .....	115
Annex H – MRCS proforma for name binding .....	123
H.1    Introduction .....	123
H.2    Instructions for completing the MRCS proforma for name binding to produce a MRCS .....	123
H.3    Statement of conformance to the name binding .....	124

## **ELEMENTS OF MANAGEMENT INFORMATION RELATED TO THE OSI DATA LINK LAYER**

(revised in 1999)

### **1 Scope**

This Recommendation provides the specification of management information within an Open System related to those operations of the OSI Data Link Layer specified by the specifications in this Recommendation. Specifics on how Data Link layer management is accomplished is beyond the scope of this Recommendation. Data Link Layer management is defined by specifying:

- the managed object class definition of Data Link Layer Managed Objects following guidelines put forth by the *Structure of Management Information*;
- the relationship of the Managed Objects and attributes to both the operation of the layer and to other objects and attributes of the layer; and
- the action type operations on the attributes of Data Link Layer Managed Objects that are available to OSI Systems Management.

Annexes E, F, G and H, which are integral parts of this Recommendation, provide ICS proformas associated with Data link layer management information.

### **2 References**

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

#### **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*.
- CCITT Recommendation X.701 (1992) | ISO/IEC 10040:1992, *Information technology – Open Systems Interconnection – Systems 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*.
- ITU-T Recommendation X.723 (1993) | ISO/IEC 10165-5:1994, *Information technology – Open Systems Interconnection – Structure of management information: Generic management information*.
- ITU-T Recommendation X.724 (1993) | ISO/IEC 10165-6:1994, *Information technology – Open Systems Interconnection – Structure of management information: Requirements and guidelines for implementation conformance statement proformas associated with OSI management*.
- CCITT Recommendation X.730 (1992) | ISO/IEC 10164-1:1993, *Information technology – Open Systems Interconnection – Systems Management: Object Management Function*.
- CCITT Recommendation X.731 (1992) | ISO/IEC 10164-2:1993, *Information technology – Open Systems Interconnection – Systems Management: State Management Function*.
- CCITT Recommendation X.732 (1992) | ISO/IEC 10164-3:1993, *Information technology – Open Systems Interconnection – Systems Management: Attributes for representing relationships*.

- CCITT Recommendation X.733 (1992) | ISO/IEC 10164-4:1992, *Information technology – Open Systems Interconnection – Systems Management: Alarm reporting function*.
- CCITT Recommendation X.734 (1992) | ISO/IEC 10164-5:1993, *Information technology – Open Systems Interconnection – Systems Management: Event Report Management Function*.
- CCITT Recommendation X.735 (1992) | ISO/IEC 10164-6:1993, *Information technology – Open Systems Interconnection – Systems Management: Log control function*.

## **2.2 Paired Recommendations | International Standards equivalent in technical content**

- CCITT Recommendation X.208 (1988), *Specification of Abstract Syntax Notation One (ASN.1)*.  
ISO/IEC 8824:1990, *Information technology – Open Systems Interconnection – Specification of Abstract Syntax Notation One (ASN.1)*.
- CCITT Recommendation X.209 (1988), *Specification of basic encoding rules for Abstract Syntax Notation One (ASN.1)*.  
ISO/IEC 8825:1990, *Information technology – Open Systems Interconnection – Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1)*.
- CCITT Recommendation X.212 (1988), *Data link service definition for Open Systems Interconnection for CCITT applications*.  
ISO/IEC 8886:1992, *Information technology – Telecommunications and information exchange between systems – Data link service definition for Open Systems Interconnection*.
- ITU-T Recommendation X.222 (1995), *Use of X.25 to provide LAPB-compatible Data Link procedures to provide the OSI connection-mode Data Link service*.  
ISO/IEC 11575:1995, *Information technology – Telecommunications and information exchange between systems – Protocol mappings for the OSI Data Link service*.
- ITU-T Recommendation X.290 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – General concepts*.  
ISO/IEC 9646-1:1994, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 1: General concepts*.
- ITU-T Recommendation X.291 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – Abstract test suite specification*.  
ISO/IEC 9646-2:1994, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 2: Abstract Test Suite specification*.
- ITU-T Recommendation X.296 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – Implementation conformance statements*.  
ISO/IEC 9646-7:1995, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 7: Implementation Conformance Statements*.
- 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*.
- CCITT Recommendation X.711 (1991), *Common management information protocol specification for CCITT applications*.  
ISO/IEC 9596-1:1991, *Information technology – Open Systems Interconnection – Common management information protocol – Part 1: Specification*.

## **2.3 Additional references**

- ITU-T Recommendation X.25 (1993), *Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit.*
- ISO/IEC 7776:1986, *Information processing systems – Data communications – High-level data link control procedures – Description of the X.25 LAPB-compatible DTE data link procedures.*
- ISO/IEC 8802-2:1994, *Information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – Specific requirements – Part 2: Logical link control.*
- ISO/IEC 8802-3:1993, *Information technology – Local and metropolitan area networks – Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications.*

## **3 Definitions**

For the purposes of this Recommendation, the following definitions apply.

### **3.1 Basic reference model**

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

- a) Data Link Layer;
- b) open system;
- c) (N)-entity;
- d) (N)-protocol;
- e) (N)-service access point.

### **3.2 Management framework**

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

- Managed object.

### **3.3 Systems Management Overview**

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

- a) Managed object class;
- b) Notification.

### **3.4 Common Management Information Service Definition**

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

- Attribute.

### **3.5 Information Model**

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

- a) Attribute Type;
- b) Behaviour;
- c) Containment;
- d) Distinguished Name;
- e) Inheritance;
- f) Name Binding;
- g) Package;

- h) Parameter;
- i) Relative Distinguished Name;
- j) Sub-class;
- k) Superclass.

### **3.6 GDMO**

This Recommendation makes use of the following terms defined in CCITT Rec. X.722 | ISO/IEC 10165-4:

- a) Managed Object Class Definition;
- b) Template.

## **4 Abbreviations**

Within the Managed Object definitions and GDMO templates, the following abbreviations are used in the standard-name element of a document-identifier when making references to other documents:

DMI      Definition of Management Information CCITT Rec. X.721 | ISO/IEC 10165-2

GMI      Generic Management Information ITU-T Rec. X.723 | ISO/IEC 10165-5

This Recommendation uses the following symbols and abbreviations:

DL      Data Link

DLL      Data Link Layer

DLE      Data Link Entity

DLSAP      Data Link Service Access Point

DMI      Definition of Management Information

GDMO      Guidelines for the Definition of Managed Objects

GMI      Generic Management Information

IVMO      Initial Value Managed Object

MCS      Management Conformance Summary

MICS      Management Information Conformance Statement

MLP      Multilink Procedure

MO      Managed Object

MOCS      Managed Object Conformance Statement

MRCS      Managed Relationship Conformance Statement

NSAP      Network Service Access Point

PLE      Packet Layer Entity

SAP      Service Access Point

SLP      Single Link Protocol

## 5 Elements of Data Link Layer Management Information

### 5.1 Managed Object Hierarchy

#### 5.1.1 Summary of managed objects

The following set of common managed objects are defined in this Recommendation for the OSI Data Link Layer:

- a) The Data Link Sub-system managed object (datalinkSubsystem) (see 5.3).
- b) The Data Link Entity managed object (datalinkEntity) (see 5.4). (This managed object is never instantiated.)
- c) The Data Link Service Access Point managed object (dLSAP) (see 5.5).
- d) The LAPB Data Link Entity managed object (IAPBDLE) (see 5.6).
- e) The LAPB Single Link Protocol Machine managed object (sLPPM) (see 5.7).
- f) The LAPB Single Link Protocol Connection managed object (sLPConnection) (see 5.8).
- g) The LAPB Single Link Protocol Connection Initial Values managed object (sLPConnectionIVMO) (see 5.9).

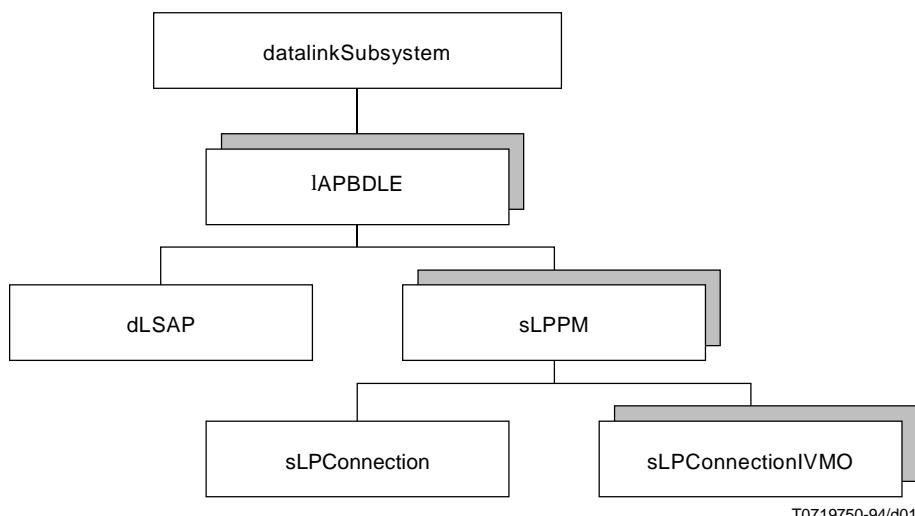
These Managed Objects represent OSI Management's view of those elements of an Open System which support the OSI Data Link Service subject to OSI management operations. Other MOs may be defined under Data Link Sub-system using these generic specifications.

#### 5.1.2 Containment hierarchy

The containment hierarchy is illustrated in Figure 1. Managed objects which can have multiple instances are illustrated by shadowed (multiple) boxes. These objects are defined in detail in the following subclauses.

The data link sub-system MO is subordinate to the system MO. The IAPBDLE MO represents protocol communication entity.

The sLPPM MO represents the operation of the protocol machine for the single-link procedures specified in ISO/IEC 7776. The sLPConnection MO represents the management view of connections established using the SLP.



**Figure 1/X.282 – Data Link Layer Containment Hierarchy**

### **5.1.3 Relationships**

#### **5.1.3.1 General**

The use of relationship attributes is illustrated by examples in Annex B. The following describes the individual relationships in more detail.

#### **5.1.3.2 DLE**

There is a relationship between a 'DLE' MO (i.e. an IAPBDLE MO) and the MO representing the underlying service provider. This is represented by the attribute providerEntityNames inherited from the generic datalinkEntity MO. This is a read-write attribute which allows a manager to configure which entities are to be used to provide services to this entity. For example, a IAPBDLE MO might be configured with the local distinguished name of a Ph-Entity MO.

Additionally, a 'DLE' MO has a localSapNames attribute inherited from GMI: communicationsEntity. This is a read-only attribute which contains the local distinguished name(s) of SAP MO(s), representing the point at which services are provided to the entity. For example, in a IAPBDLE MO localSapNames might contain the name of a Ph-SAP MO.

The sN-ServiceProvider attribute of the Network layer Linkage, X25PLE-DTE MOs and X25PLE-DCE MOs contains the local distinguished name of a 'DLE' MO.

#### **5.1.3.3 dLSAP**

There is a relationship between a dLSAP MO and the managed objects that represent the (Network layer) user entities that are using the SAP. This is represented by the userEntityNames attribute inherited from GMI: sap1. For example, in an dLSAP MO contained in an IAPBDLE MO, userEntityNames might contain the distinguished name of an X25PLE-DTE MO.

The sN-SAP attribute of the Network layer Linkage and X25PLE-DTE MOs contains the distinguished name of a dLSAP MO.

#### **5.1.3.4 sLPConnection**

There is a relationship between an sLPConnection MO and the MO representing the underlying Ph-Connection. This is represented by the attribute underlyingConnectionNames inherited from GMI: singlePeerConnection.

#### **5.1.4 Minimum Event Filtering Capabilities**

The Data Link Layer management definitions embodied in this Recommendation imply the frequent, and possibly excessive, generation of notifications during regular layer operation. These notifications are especially useful for effective fault management, where they facilitate the tracing and pinpointing of error situations. To avoid the excessive dissemination of these event reports under normal operating conditions, it is advisable for a managed system to have, as a minimum, the capability to perform discrimination based upon:

- a) The source managed object class.
- b) The object identifier values in the probable cause and specific problems field of communication alarms.

#### **5.1.5 Use of Optional Fields**

Where reference is made in this Recommendation to ASN.1 syntax defined in DMI or GMI, only the following fields shall be employed:

- 1) Those which are not OPTIONAL in the ASN.1 syntax.
- 2) Those which are OPTIONAL, but whose use is explicitly required by this Recommendation.
- 3) Those which are OPTIONAL, but whose ASN.1 type is SET OF ManagementExtension.

The use of any other fields is prohibited.

## 5.2 Common Data Link Layer GDMO definitions

-- *Behaviours*

### commonCreationDeletion-B BEHAVIOUR

#### DEFINED AS

Managed object class imports the Rec. X.721 | ISO/IEC 10165-2 objectCreation and/or objectDeletion notifications. Used as follows:

objectCreation – Generated whenever an instance of the managed object class is created. Implementations may optionally include the sourceIndicator parameter in the notification. If creation occurred as a result of internal operation of the resource, the value 'resourceOperation' is used. If creation occurred in response to a management operation, the value 'managementOperation' is used. A value of 'unknown' may be returned if it is not possible to determine the source of the operation. None of the other optional parameters are used.

objectDeletion – Generated whenever an instance of the managed object class is deleted. Implementations may optionally include the sourceIndicator parameter in the notification. If deletion occurred as a result of internal operation of the resource, the value 'resourceOperation' is used. If deletion occurred in response to a management operation, the value 'managementOperation' is used. A value of 'unknown' may be returned if it is not possible to determine the source of the operation. None of the other optional parameters are used.;

### commonStateChange-B BEHAVIOUR

#### DEFINED AS

Managed object class imports the Rec. X.721 | ISO/IEC 10165-2 stateChange notification. Used to report the changes to the operationalState attribute, and where present, the administrativeState attribute. A single parameter set is included in the State change definition field. Only the (mandatory) attributeId and (optional) newAttributeValue parameters are used.;

-- *Attribute Groups*

### timers ATTRIBUTE GROUP

-- *Empty group definition. Timer attributes are added to the group in package definitions.*

DESCRIPTION The group of all timer attributes;

REGISTERED AS {DLM.agoi timers(1)};

## 5.3 The Data Link Sub-system managed object

-- *There shall be exactly one of these managed objects within a system.*  
-- *It exists to provide a container for all managed objects in a system,*  
-- *that relate to the operation of the Datalink layer.*

--  
-- *The datalinkSubsystem managed object cannot be created or deleted*  
-- *explicitly by management operation. It exists inherently in a system;*  
-- *created and deleted as part of system operation.*

### datalinkSubsystem MANAGED OBJECT CLASS

DERIVED FROM "GMI":subsystem;

CHARACTERIZED BY datalinkSubsystem-P PACKAGE

#### ATTRIBUTES

"GMI":subsystemId  
  INITIAL VALUE DLM.datalinkSubsystemId-Value  
  GET;;;

REGISTERED AS {DLM.moi datalinkSubsystem(1)};

-- *Name Bindings*

-- *IMPORT "GMI":subsystem-system NAME BINDING*

## 5.4 The Data Link Entity managed object

-- *The generic DLE MO from which protocol- and media-specific DLE MOs*  
-- *may be derived.*

### datalinkEntity MANAGED OBJECT CLASS

DERIVED FROM "GMI":communicationsEntity;

CHARACTERIZED BY datalinkEntity-P PACKAGE

#### BEHAVIOUR

commonCreationDeletion-B,  
commonStateChange-B;

**ATTRIBUTES**  
**providerEntityNames REPLACE-WITH-DEFAULT**  
**GET-REPLACE;**

**ATTRIBUTE GROUPS**  
**"DMI":state**  
**"DMI":operationalState;**

**NOTIFICATIONS**  
**"DMI":objectCreation,**  
**"DMI":objectDeletion,**  
**"DMI":stateChange;;;**  
**REGISTERED AS {DLM.moi datalinkEntity(2)};**

-- *Name Bindings*

-- *IMPORT "GMI":communicationsEntity-subsystem NAME BINDING*

**datalinkEntity-datalinkSubsystem-Management NAME BINDING**  
**SUBORDINATE OBJECT CLASS datalinkEntity AND SUBCLASSES;**  
**NAMED BY**  
**SUPERIOR OBJECT CLASS datalinkSubsystem AND SUBCLASSES;**  
**WITH ATTRIBUTE "GMI":communicationsEntityId;**  
**BEHAVIOUR datalinkEntity-datalinkSubsystem-Management-B BEHAVIOUR**  
**DEFINED AS**  
The name binding which applies when a datalinkEntity managed object (or an instance of a sub-class of the datalinkEntity MO class) can be created by management as a subordinate object of the datalinkSubsystem managed object (or sub-class), and deleted by management.;;

**CREATE;**  
**DELETE ONLY-IF-NO-CONTAINED-OBJECTS;**  
**REGISTERED AS {DLM.nboi datalinkEntity-datalinkSubsystem-Management(1)};**

-- *Attributes*

**providerEntityNames ATTRIBUTE**  
**WITH ATTRIBUTE SYNTAX DLM.GroupObjects;**  
**MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;**  
**BEHAVIOUR providerEntityNames-B BEHAVIOUR**  
**DEFINED AS**  
The distinguished names of provider entity managed objects. The managed objects that represent the entities to be used to provide services to this entity.;;  
**REGISTERED AS {DLM.aoi providerEntityNames(11)};**

## 5.5 The Data Link Service Access Point managed object

-- *The dLSAP managed object class is used to represent a service access point at which services are provided by a DLE to the user entity.*  
-- *Instances of the dLSAP managed object class are contained within instances of sub-classes derived from the datalinkEntity managed object class. Constraints on the number of contained dLSAP MOs and any specific semantics of the attributes are given as part of the definition of the containing DLE managed object class.*  
--  
-- *A dLSAP managed object may be created and deleted explicitly by management operation or created and deleted automatically as part of system operation, e.g. when a user of the Data Link layer service requests and is granted use of the service. The mechanism by which this happens is a local matter and not subject to OSI standardization.*

**dLSAP MANAGED OBJECT CLASS**  
**DERIVED FROM "GMI":sap1;**  
**REGISTERED AS {DLM.moi dLSAP(13)};**

-- *Name Bindings*

-- *IMPORT "GMI":sap1-communicationsEntity NAME BINDING*

**dLSAP-datalinkEntity-Management NAME BINDING**  
**SUBORDINATE OBJECT CLASS dLSAP AND SUBCLASSES;**  
**NAMED BY**

**SUPERIOR OBJECT CLASS** **datalinkEntity AND SUBCLASSES;**  
**WITH ATTRIBUTE "GMI":sapId;**  
**BEHAVIOUR dLSAP-datalinkEntity-Management-B BEHAVIOUR**  
**DEFINED AS**

The name binding which applies when a dLSAP managed object (or an instance of a sub-class of the dLSAP MO class) can be created by management as a subordinate object of a datalinkEntity managed object (or sub-class), and deleted by management.;;  
**CREATE;**  
**DELETE ONLY-IF-NO-CONTAINED-OBJECTS;**  
REGISTERED AS {DLM.nboi dLSAP-datalinkEntity-Management(2)};

## 5.6 The LAPB Data Link Entity managed object

-- There may be multiple instances of the *lAPBDLE* managed object in a system. Systems not supporting the LAPB Data Link procedures defined in ISO/IEC 7776 are not required to support the *lAPBDLE* and contained managed objects.  
--  
-- The *lAPBDLE* managed object has a conditional *mlp* Package. There may be multiple instances of *lAPBDLE* MO in a system, both with and without the *mlp* Package. For those instances in which the package is absent, the *mlp* procedures do not apply and the *lAPBDLE* MO may contain at most one *sLPPM* MO. For those instances in which the package is present, the *mlp* procedures do apply and the *lAPBDLE* MO may contain multiple instances of *sLPPM* MO.  
--  
-- A *lAPBDLE* MO may contain at most one *dLSAP* MO. The value of the *sap1Address* attribute is of no significance. The cardinality of the *userEntityNames* attribute is limited to one.  
--  
-- A *lAPBDLE* MO may be created and deleted explicitly by management operation or created and deleted automatically as part of system operation.  
--  
-- When the *lAPBDLE* MO is operable, the *operationalState* shall have the value 'enabled'; otherwise it shall have the value 'disabled'.  
-- Transitions of *operationalState* shall be reported using the *stateChange* notification.

### IAPBDLE MANAGED OBJECT CLASS

DERIVED FROM **datalinkEntity**;

CONDITIONAL PACKAGES

**mLP-P PRESENT** IF IAPBDLE supports *mlp* procedures,  
**mT2-P PRESENT** IF IAPBDLE supports *mlp* procedures and *mT2* timer.,  
**mLP-Counters-P PRESENT** IF ITU-T DCE mode operation is supported;  
REGISTERED AS {DLM.moi IAPBDLE(3)};

-- Packages

#### **mLP-P PACKAGE**

**BEHAVIOUR mLP-P-B BEHAVIOUR**

DEFINED AS

Additional properties of an IAPBDLE MO, present when *mlp* procedures supported.;;  
ATTRIBUTES

**mT1Timer REPLACE-WITH-DEFAULT**

**GET-REPLACE**,

**mT3Timer REPLACE-WITH-DEFAULT**

**GET-REPLACE**,

**mW REPLACE-WITH-DEFAULT**

**GET-REPLACE**,

**mX REPLACE-WITH-DEFAULT**

**GET-REPLACE**;

ATTRIBUTE GROUPS

**timers**

**mT1Timer**

**mT3Timer**;

REGISTERED AS {DLM.poi mLP-P(1)};

**mT2-P PACKAGE**  
**BEHAVIOUR mT2-P-B BEHAVIOUR**  
**DEFINED AS**

Additional properties present when mT2 timer is supported.;;

**ATTRIBUTES**

**mT2Timer REPLACE-WITH-DEFAULT**  
GET-REPLACE;

**ATTRIBUTE GROUPS**

timers

mT2Timer;

REGISTERED AS {DLM.poi mT2-P(5)};

**mLP-Counters-P PACKAGE**

**BEHAVIOUR mLPCounters-P-B BEHAVIOUR**

**DEFINED AS**

Additional properties present when ITU-T DCE mode operation is supported.;;

**ATTRIBUTES**

receivedMlpResets REPLACE-WITH-DEFAULT GET-REPLACE,  
timesMT1Expired REPLACE-WITH-DEFAULT GET-REPLACE,  
iFramesReassignments REPLACE-WITH-DEFAULT GET-REPLACE,  
mlpFramesReceived REPLACE-WITH-DEFAULT GET-REPLACE,  
mlpFramesSent REPLACE-WITH-DEFAULT GET-REPLACE,  
mlpFramesOutsideWindowGuard REPLACE-WITH-DEFAULT GET-REPLACE,  
receivedMlpFramesInGuardRegion REPLACE-WITH-DEFAULT

GET-REPLACE;

REGISTERED AS {DLM.poi mLPCounters-P(6)};

-- *Attributes*

**mT1Timer ATTRIBUTE**

**DERIVED FROM "GMI":timer;**

**BEHAVIOUR mT1Timer-B BEHAVIOUR**

**DEFINED AS**

Value of the ISO/IEC 7776 parameter MT1 (lost frame timer). Unit is seconds.;;

REGISTERED AS {DLM.aoi mT1Timer(12)};

**mT2Timer ATTRIBUTE**

**DERIVED FROM "GMI":timer;**

**BEHAVIOUR mT2Timer-B BEHAVIOUR**

**DEFINED AS**

Value of the ISO/IEC 7776 parameter MT2 (group busy timer). Unit is seconds.;;

REGISTERED AS {DLM.aoi mT2Timer(13)};

**mT3Timer ATTRIBUTE**

**DERIVED FROM "GMI":timer;**

**BEHAVIOUR mT3Timer-B BEHAVIOUR**

**DEFINED AS**

Value of the ISO/IEC 7776 parameter MT3 (mlp reset confirmation timer). Unit is seconds.;;

REGISTERED AS {DLM.aoi mT3Timer(14)};

**iFramesReassignments ATTRIBUTE**

**DERIVED FROM "GMI":nonWrapping64BitCounter;**

**BEHAVIOUR iFramesReassignments-B BEHAVIOUR**

**DEFINED AS**

Counter. Number of reassignments of IFrames on another slp.;;

REGISTERED AS {DLM.aoi iFramesReassignments(46)};

**mlpFramesReceived ATTRIBUTE**

**DERIVED FROM "GMI":nonWrapping64BitCounter;**

**BEHAVIOUR mlpFramesReceived-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of mlp frames received.;;

REGISTERED AS {DLM.aoi mlpFramesReceived(52)};

**mlpFramesSent ATTRIBUTE**

**DERIVED FROM "GMI":nonWrapping64BitCounter;**

**BEHAVIOUR mlpFramesSent-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of mlp frames Sent.;;

REGISTERED AS {DLM.aoi mlpFramesSent(53)};

**mlpFramesOutsideWindowGuard ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR mlpFramesOutsideWindowGuard-B BEHAVIOUR**  
**DEFINED AS**  
 Counter. Total number of mlp frames outside the window guard that have been received.;;  
**REGISTERED AS {DLM.aoi mlpFramesOutsideWindowGuard(54)};**

**mW ATTRIBUTE**  
**WITH ATTRIBUTE SYNTAX DLM.WindowSize;**  
**MATCHES FOR EQUALITY, ORDERING;**  
**BEHAVIOUR mW-B BEHAVIOUR**  
**DEFINED AS**  
 MLP window size.;;  
**REGISTERED AS {DLM.aoi mW(47)};**

**mX ATTRIBUTE**  
**WITH ATTRIBUTE SYNTAX DLM.MX;**  
**MATCHES FOR EQUALITY, ORDERING;**  
**BEHAVIOUR mX-B BEHAVIOUR**  
**DEFINED AS**  
 Receive MLP window in the Guard Region.;;  
**REGISTERED AS {DLM.aoi mX(48)};**

**receivedMlpFramesInGuardRegion ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR receivedMlpFramesInGuardRegion-B BEHAVIOUR**  
**DEFINED AS**  
 Counter. Number of MLP Frames received in the Guard Region.;;  
**REGISTERED AS {DLM.aoi receivedMlpFramesInGuardRegion(49)};**

**receivedMlpResets ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR receivedMlpResets-B BEHAVIOUR**  
**DEFINED AS**  
 Counter. Number of received MLP Resets.;;  
**REGISTERED AS {DLM.aoi receivedMlpResets(50)};**

**timesMT1Expired ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR timesMT1Expired-B BEHAVIOUR**  
**DEFINED AS**  
 Counter. Lost multilink frames.;;  
**REGISTERED AS {DLM.aoi timesMT1Expired(51)};**

## 5.7 The LAPB Single Link Protocol Machine managed object

- The sLPPM managed object represents the operation of the LAPB Data
- Link layer protocol machine described in ISO/IEC 7776 over a single physical
- link. An sLPPM managed object may contain at most one sLPConnection
- MO and one or more sLPConnectionIVMO.
- 
- An sLPPM MO may be created and deleted explicitly by
- management operation or created and deleted automatically as
- part of system operation.
- 
- When the sLPPM MO is operable, the operationalState shall
- have the value 'enabled'; otherwise it shall have the value 'disabled'.
- Transitions of operationalState shall be reported using the
- stateChange notification.

**sLPPM MANAGED OBJECT CLASS**  
**DERIVED FROM "GMI":coProtocolMachine;**  
**CHARACTERIZED BY sLPPM-P PACKAGE**  
**BEHAVIOUR**  
 commonCreationDeletion-B,  
 commonStateChange-B;

```

ATTRIBUTE GROUPS
  "DMI":state
    "DMI":operationalState;
ACTIONS
  "GMI":activate,
  "GMI":deactivate;
NOTIFICATIONS
  "DMI":objectCreation,
  "DMI":objectDeletion,
  "DMI":stateChange;;
REGISTERED AS {DLM.moi sLPPM(4);}

-- Name Bindings
-- IMPORT "GMI":coProtocolMachine-entity NAME BINDING

sLPPM-IAPBDLE-Management NAME BINDING
SUBORDINATE OBJECT CLASS sLPPM AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS IAPBDLE AND SUBCLASSES;
WITH ATTRIBUTE "GMI":coProtocolMachineId;
BEHAVIOUR sLPPM-IAPBDLE-Management-B BEHAVIOUR
DEFINED AS
The name binding which applies when a sLPPM managed object (or an instance of a sub-class of the sLPPM MO class)
can be created by management as a subordinate object of a IAPBDLE managed object (or sub-class), and deleted by
management.;;
CREATE;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {DLM.nboi sLPPM-IAPBDLE-Management(3)};

```

## 5.8 The LAPB Single Link Protocol Connection managed object

- The sLPConnection managed object represents the local view of a connection between LAPB DLEs over a single physical link.
- An sLPConnection MO is created automatically as part of system operation.
- An sLPConnection MO may be deleted automatically as part of system operation or may be deleted as a result of the deactivate or delete management operations.
- An sLPConnectionIVMO may be used as the source of initial values of attributes of an sLPConnection MO.

```

sLPConnection MANAGED OBJECT CLASS
DERIVED FROM "GMI":singlePeerConnection;
CHARACTERIZED BY
  commonSLPConnection-P,
  sLPConnection-P;
CONDITIONAL PACKAGES
  t3-P PRESENT IF Optional Timer T3 of ISO/IEC 7776 is supported. or ITU-T DCE mode
    operation is supported,
  t4-P PRESENT IF Timer T4 of ISO 7776 or ITU-T DCE mode is supported,
    link-reset-disconnect-n2-P PRESENT IF supported;
REGISTERED AS {DLM.moi sLPConnection(5)};

```

-- Packages

```

commonSLPConnection-P PACKAGE
BEHAVIOUR
  commonCreationDeletion-B;
ATTRIBUTES
  interfaceType REPLACE-WITH-DEFAULT
    DEFAULT VALUE DLM.interfaceTypeDefault -- dTE
    GET-REPLACE,
  k REPLACE-WITH-DEFAULT
    GET-REPLACE,
  n1 REPLACE-WITH-DEFAULT
    GET-REPLACE,
  n2 REPLACE-WITH-DEFAULT
    GET-REPLACE,

```

```

sequenceModulus REPLACE-WITH-DEFAULT
    GET-REPLACE,
t1Timer REPLACE-WITH-DEFAULT
    GET-REPLACE,
t2Timer REPLACE-WITH-DEFAULT
    GET-REPLACE;
ATTRIBUTE GROUPS
timers
    t1Timer
    t2Timer;
NOTIFICATIONS
    "DMI":objectCreation,
    "DMI":objectDeletion;
; -- not registered

sLPConnection-P PACKAGE
BEHAVIOUR
    commonDeactivateConnection-B,
    commonStateChange-B,
    fRMRReceivedCommunicationsAlarm-B;
ATTRIBUTES
fCSErrorsReceived GET,
fRMRsReceived GET,
fRMRsSent GET,
iFrameDataOctetsReceived GET,
iFrameDataOctetsSent GET,
iFramesReceived GET,
iFramesSent GET,
pollsReceived GET,
rEJsReceived GET,
rEJsSent GET,
rNRsReceived GET,
rNRsSent GET,
sABMsReceived GET,
sABMsSent GET,
sLPPProtocolState GET,
timesT1Expired GET;
ATTRIBUTE GROUPS
"GMI":counters
    fCSErrorsReceived
    fRMRsReceived
    fRMRsSent
    iFrameDataOctetsReceived
    iFrameDataOctetsSent
    iFramesReceived
    iFramesSent
    pollsReceived
    rEJsReceived
    rEJsSent
    rNRsReceived
    rNRsSent
    sABMsReceived
    sABMsSent
    timesT1Expired,
"DMI":state
    sLPPProtocolState;
ACTIONS
    "GMI":deactivate;
NOTIFICATIONS
    "DMI":communicationsAlarm
    fRMR;
        -- NOTE – The fRMR parameter is carried
        -- as additionalInformation in the communicationsAlarm.
; -- not registered

```

**t3-P PACKAGE**  
**BEHAVIOUR t3-P-B BEHAVIOUR**  
**DEFINED AS**  
 Present if the optional Timer T3 is supported.;;  
**ATTRIBUTES**  
 t3Timer REPLACE-WITH-DEFAULT  
 GET-REPLACE,  
 timesT3Expired  
 GET;  
**ATTRIBUTE GROUPS**  
 "GMI":counters  
 timesT3Expired,  
 timers  
 t3Timer;  
**REGISTERED AS** {DLM.poi t3-P(2)};

**link-reset-disconnect-n2-P PACKAGE**  
**BEHAVIOUR link-reset-disconnect-n2-P-B BEHAVIOUR**  
**DEFINED AS**  
 Present if supported.;;  
**ATTRIBUTES**  
 abnormalLinkDisconnectsReceived GET,  
 abnormalLinkDisconnectsSent GET,  
 linkResetsReceived GET,  
 linkResetsSent GET,  
 timesN2Reached GET;  
**ATTRIBUTE GROUPS**  
 "GMI":counters  
 abnormalLinkDisconnectsReceived  
 abnormalLinkDisconnectsSent  
 linkResetsReceived  
 linkResetsSent  
 timesN2Reached;  
**REGISTERED AS** {DLM.poi link-reset-disconnect-n2-P(4)};

**t4-P PACKAGE**  
**BEHAVIOUR t4-P-B BEHAVIOUR**  
**DEFINED AS**  
 Present if the Timer T4 is supported.;;  
**ATTRIBUTES**  
 t4Timer REPLACE-WITH-DEFAULT GET-REPLACE,  
 timesT4Expired GET;  
**ATTRIBUTE GROUPS**  
 "GMI":counters  
 timesT4Expired,  
 timers  
 t4Timer;  
**REGISTERED AS** {DLM.poi t4-P(7)};

-- *Behaviours*

**commonDeactivateConnection-B BEHAVIOUR**

**DEFINED AS**

Managed object class imports the Recommendation X.723 deactivate action. The deactivate action causes the connection to be terminated. The termination should occur as rapidly as practical, but no particular time constraints are implied. Typically, this action simulates a disconnect request received across the service interface. If a more rapid means for terminating the connection exists, then this should be used. The termination shall occur in conformance to the protocol standard. The Managed Object remains in existence after completion of the deactivate action. It is subsequently deleted when the connection is terminated, in the same way as if the connection had been terminated by other means. A deactivate action may fail (with the ProcessingFailure response) if it is temporarily not possible to terminate the connection.;

**fRMRReceivedCommunicationsAlarm-B BEHAVIOUR**

**DEFINED AS**

Managed object imports the Recommendation X.721 communicationsAlarm notification. Used to report the following conditions:

**fRMRReceived** – A FRMR frame is received. The received FRMR frame is reported as additionalInformation in the notification, using the fRMR parameter. The significance sub-parameter shall be set as described above.

The probableCause parameter is set to the value communicationsProtocolError.

The value DLM.fRMRRReceived shall be reported in the specificProblems parameter. In addition, the reason why the frame was sent is also returned in specificProblems. Values are specified in the DLM ASN.1 module for controlFieldUndefinedOrUnimplemented, infoFieldLengthGreaterThanMaximum, invalidNR, formatError, and nonSpecific.

The perceivedSeverity parameter is set to the value Minor. A subsequent communicationsAlarm with a perceivedSeverity value of Cleared is not generated. No other parameters are used.;

#### sLPConnection-sLPPM-Automatic-B BEHAVIOUR

##### DEFINED AS

The name binding which applies when an sLPConnection managed object (or an instance of a sub-class of the sLPConnection MO class) is created automatically by the operation of the system as a subordinate object of an sLPPM managed object (or sub-class), and deleted automatically.

The creation of an instance of an sLPConnection MO (or sub-class) using this name binding may reference an instance of the sLPConnectionIVMO (or sub-class). The means by which an instance (if any) of the sLPConnectionIVMO are identified are a local matter. When this occurs, some of the initial values of the attributes of the instance of the sLPConnection MO may be supplied by the values of the attributes in the specified instance of sLPConnectionIVMO. However, any such value may be overridden by a value supplied by local means (for example across an internal interface). Where values are supplied by the IVMO, the initial value of an attribute of the sLPConnection MO shall be the value of the corresponding attribute in the sLPConnectionIVMO (that is, which has the same attribute template label). The naming attribute of the sLPConnection MO is assigned a value according to local mechanisms.;

#### sLPConnection-sLPPM-Management-B BEHAVIOUR

##### DEFINED AS

The name binding which applies when an sLPConnection managed object (or an instance of a sub-class of the sLPConnection MO class) which is a subordinate object of an sLPPM managed object (or sub-class), can be deleted by management.;

##### -- Name Bindings

#### sLPConnection-sLPPM-Automatic NAME BINDING

SUBORDINATE OBJECT CLASS sLPConnection AND SUBCLASSES;

NAMED BY

SUPERIOR OBJECT CLASS sLPPM AND SUBCLASSES;

WITH ATTRIBUTE "GMI":connectionId;

BEHAVIOUR sLPConnection-sLPPM-Automatic-B;

REGISTERED AS {DLM.nboi sLPConnection-sLPPM-Automatic(4)};

#### sLPConnection-sLPPM-Management NAME BINDING

SUBORDINATE OBJECT CLASS sLPConnection AND SUBCLASSES;

NAMED BY

SUPERIOR OBJECT CLASS sLPPM AND SUBCLASSES;

WITH ATTRIBUTE "GMI":connectionId;

BEHAVIOUR

  sLPConnection-sLPPM-Automatic-B,

  sLPConnection-sLPPM-Management-B;

DELETE ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {DLM.nboi sLPConnection-sLPPM-Management(5)};

##### -- Attributes

#### fCSErrorsReceived ATTRIBUTE

DERIVED FROM "GMI":nonWrapping64BitCounter;

BEHAVIOUR fCSErrorsReceived-B BEHAVIOUR

##### DEFINED AS

  Counter. Total number of frames received with a bad frame

  check.;;

REGISTERED AS {DLM.aoi fCSErrorsReceived(15)};

#### fRMRsReceived ATTRIBUTE

DERIVED FROM "GMI":nonWrapping64BitCounter;

BEHAVIOUR fRMRsReceived-B BEHAVIOUR

##### DEFINED AS

  Counter. Total number of FRMR frames received.;;

REGISTERED AS {DLM.aoi fRMRsReceived(1)};

**fRMRsSent ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR fRMRsSent-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of FRMR frames sent.;;

**REGISTERED AS {DLM.aoi fRMRsSent(2)};**

**iFrameDataOctetsReceived ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR iFrameDataOctetsReceived-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of data octets received in I frames. Only data octets in new I frames are counted, i.e. retransmitted frames that are received do not cause the counter to be incremented.;;

**REGISTERED AS {DLM.aoi iFrameDataOctetsReceived(16)};**

**iFrameDataOctetsSent ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR iFrameDataOctetsSent-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of data octets sent in I frames. Only data octets in new I frames are counted, i.e. retransmitted frames that are sent do not cause the counter to be incremented.;;

**REGISTERED AS {DLM.aoi iFrameDataOctetsSent(17)};**

**iFramesReceived ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR iFramesReceived-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of I frames received. Only new I frames are counted, i.e. retransmitted frames that are received do not cause the counter to be incremented.;;

**REGISTERED AS {DLM.aoi iFramesReceived(3)};**

**iFramesSent ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR iFramesSent-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of I frames sent. Only new I frames are counted, i.e. retransmitted frames that are sent do not cause the counter to be incremented.;;

**REGISTERED AS {DLM.aoi iFramesSent(4)};**

**interfaceType ATTRIBUTE**  
**WITH ATTRIBUTE SYNTAX DLM.InterfaceType;**  
**MATCHES FOR EQUALITY;**  
**BEHAVIOUR interfaceType-B BEHAVIOUR**

**DEFINED AS**

Determines the address mode used by the local DTE.;;

**REGISTERED AS {DLM.aoi interfaceType(18)};**

**k ATTRIBUTE**  
**WITH ATTRIBUTE SYNTAX DLM.WindowSize;**  
**MATCHES FOR EQUALITY, ORDERING;**  
**BEHAVIOUR k-B BEHAVIOUR**

**DEFINED AS**

Value of the ISO/IEC 7776 parameter k. The maximum number of sequentially numbered I frames that a DTE may have outstanding (i.e. unacknowledged) at any given time.;;

**REGISTERED AS {DLM.aoi k(19)};**

**n1 ATTRIBUTE**  
**WITH ATTRIBUTE SYNTAX DLM.MaximumIFrameSize;**  
**MATCHES FOR EQUALITY, ORDERING;**  
**BEHAVIOUR n1-B BEHAVIOUR**

**DEFINED AS**

Value of the ISO/IEC 7776 parameter N1. The maximum number of bits in an I frame (excluding flags and "0" bits inserted for transparency).;;

**REGISTERED AS {DLM.aoi n1(20)};**

**n2 ATTRIBUTE**  
**WITH ATTRIBUTE SYNTAX DLM.Integer;**  
**MATCHES FOR EQUALITY, ORDERING;**  
**BEHAVIOUR n2-B BEHAVIOUR**

**DEFINED AS**

Value of the ISO/IEC 7776 parameter N2. The maximum number of attempts that shall be made to complete the successful transmission of a frame.;;

**REGISTERED AS {DLM.aoi n2(21)};**

**pollsReceived ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR pollsReceived-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of command frames received with P-bit set.;;

**REGISTERED AS {DLM.aoi pollsReceived(22)};**

**rEJsReceived ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR rEJsReceived-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of REJ frames received.;;

**REGISTERED AS {DLM.aoi rEJsReceived(5)};**

**rEJsSent ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR rEJsSent-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of REJ frames sent.;;

**REGISTERED AS {DLM.aoi rEJsSent(6)};**

**rNRsReceived ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR rNRsReceived-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of RNR frames received.;;

**REGISTERED AS {DLM.aoi rNRsReceived(7)};**

**rNRsSent ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR rNRsSent-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of RNR frames sent.;;

**REGISTERED AS {DLM.aoi rNRsSent(8)};**

**sABMsReceived ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR sABMsReceived-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of SABM frames received.;;

**REGISTERED AS {DLM.aoi sABMsReceived(9)};**

**sABMsSent ATTRIBUTE**  
**DERIVED FROM "GMI":nonWrapping64BitCounter;**  
**BEHAVIOUR sABMsSent-B BEHAVIOUR**

**DEFINED AS**

Counter. Total number of SABM frames sent.;;

**REGISTERED AS {DLM.aoi sABMsSent(10)};**

**sLPProtocolState ATTRIBUTE**  
**WITH ATTRIBUTE SYNTAX DLM.SLPProtocolState;**  
**MATCHES FOR EQUALITY;**  
**BEHAVIOUR sLPProtocolState-B BEHAVIOUR**

**DEFINED AS**

Local state of a LAPB (SLP) connection.;;

**REGISTERED AS {DLM.aoi sLPProtocolState(23)};**

**sequenceModulus ATTRIBUTE**  
WITH ATTRIBUTE SYNTAX DLM.SequenceModulus;  
**MATCHES FOR EQUALITY;**  
**BEHAVIOUR sequenceModulus-B BEHAVIOUR**

**DEFINED AS**  
Determines basic (modulo 8) or extended (modulo 128) operation.;;  
**REGISTERED AS {DLM.aoi sequenceModulus(24)};**

**t1Timer ATTRIBUTE**  
DERIVED FROM "GMI":timer;  
**BEHAVIOUR t1Timer-B BEHAVIOUR**

**DEFINED AS**  
Value of the ISO/IEC 7776 parameter Timer T1. Unit is hundreds of milliseconds.;;  
**REGISTERED AS {DLM.aoi t1Timer(25)};**

**t2Timer ATTRIBUTE**  
DERIVED FROM "GMI":timer;  
**BEHAVIOUR t2Timer-B BEHAVIOUR**

**DEFINED AS**  
Value of the ISO/IEC 7776 parameter T2. Unit is hundreds of milliseconds.;;  
**REGISTERED AS {DLM.aoi t2Timer(26)};**

**t3Timer ATTRIBUTE**  
DERIVED FROM "GMI":timer;  
**BEHAVIOUR t3Timer-B BEHAVIOUR**

**DEFINED AS**  
Value of the ISO/IEC 7776 optional parameter or ITU-T X.25 mandatory parameter T3. Unit is seconds.;;  
**REGISTERED AS {DLM.aoi t3Timer(27)};**

**t4Timer ATTRIBUTE**  
DERIVED FROM "GMI":timer;  
**BEHAVIOUR t4Timer-B BEHAVIOUR**

**DEFINED AS**  
Value of the ISO/IEC 7776 parameter T4. The maximum time a DTE or a DCE will allow without frames being exchanged on the data link. Unit is seconds.;;  
**REGISTERED AS {DLM.aoi t4Timer(28)};**

**timesT1Expired ATTRIBUTE**  
DERIVED FROM "GMI":nonWrapping64BitCounter;  
**BEHAVIOUR timesT1Expired-B BEHAVIOUR**

**DEFINED AS**  
Counter. Total number of times the local Timer T1 expired.;;  
**REGISTERED AS {DLM.aoi timesT1Expired(29)};**

**timesT3Expired ATTRIBUTE**  
DERIVED FROM "GMI":nonWrapping64BitCounter;  
**BEHAVIOUR timesT3Expired-B BEHAVIOUR**

**DEFINED AS**  
Counter. Total number of times local Timer T3 expired.;;  
**REGISTERED AS {DLM.aoi timesT3Expired(30)};**

**timesT4Expired ATTRIBUTE**  
DERIVED FROM "GMI":nonWrapping64BitCounter;  
**BEHAVIOUR timesT4Expired-B BEHAVIOUR**

**DEFINED AS**  
Counter. Total number of times local Timer T4 expired.;;  
**REGISTERED AS {DLM.aoi timesT4Expired(32)};**

**abnormalLinkDisconnectsReceived ATTRIBUTE**  
DERIVED FROM "GMI":nonWrapping64BitCounter;  
**BEHAVIOUR abnormalLinkDisconnectsReceived-B BEHAVIOUR**

**DEFINED AS**  
Counter. Total number of received abnormal Link Disconnects.;;  
**REGISTERED AS {DLM.aoi abnormalLinkDisconnectsReceived(41)};**

**abnormalLinkDisconnectsSent ATTRIBUTE**  
DERIVED FROM "GMI":nonWrapping64BitCounter;  
**BEHAVIOUR abnormalLinkDisconnectsSent-B BEHAVIOUR**

**DEFINED AS**  
Counter. Total number of sent abnormal Link Disconnects.;;  
**REGISTERED AS {DLM.aoi abnormalLinkDisconnectsSent(42)};**

```

linkResetsReceived ATTRIBUTE
DERIVED FROM "GMI":nonWrapping64BitCounter;
BEHAVIOUR linkResetsReceived-B BEHAVIOUR
DEFINED AS
    Counter. Total number of received Link Resets.;;
REGISTERED AS {DLM.aoi linkResetsReceived(43)};;

linkResetsSent ATTRIBUTE
DERIVED FROM "GMI":nonWrapping64BitCounter;
BEHAVIOUR linkResetsSent-B BEHAVIOUR
DEFINED AS
    Counter. Total number of sent Link Resets.;;
REGISTERED AS {DLM.aoi linkResetsSent(44)};;

timesN2Reached ATTRIBUTE
DERIVED FROM "GMI":nonWrapping64BitCounter;
BEHAVIOUR timesN2Reached-B BEHAVIOUR
DEFINED AS
    Counter. Total number of times N2 was Reached.;;
REGISTERED AS {DLM.aoi timesN2Reached(45)};;

-- Parameters

fRMR PARAMETER
CONTEXT EVENT-INFO;
WITH SYNTAX DLM.FRMRSyntax;
BEHAVIOUR fRMR-B BEHAVIOUR
DEFINED AS
    FRMR frame. Returned as additionalInformation in a communicationsAlarm notification when specificProblems has the
    value DLM.fRMRReceived.;;
REGISTERED AS {DLM.proi fRMR(1)};

```

## 5.9 The LAPB Single Link Protocol Connection Initial Values managed object

- An sLPConnectionIVMO may be used to supply initial values for the
- attributes of sLPConnection MOs. Different instances of sLPConnectionIVMO may
- contain different initial values.
- 
- An sLPConnectionIVMO may be created and deleted explicitly by management operation.

**sLPConnectionIVMO MANAGED OBJECT CLASS**  
DERIVED FROM "DMI":top;  
CHARACTERIZED BY  
 commonSLPConnection-P,  
 sLPConnectionIVMO-P;  
CONDITIONAL PACKAGES  
 t3IVMO-P PRESENT IF optional Timer T3 of ISO/IEC 7776 is supported or ITU-T DCE  
 mode operation is supported,  
 t4IVMO-P PRESENT IF Timer T4 of ISO 7776 or ITU-T DCE mode is  
 supported.;;  
REGISTERED AS {DLM.moi sLPConnectionIVMO(6)};

-- Packages

### sLPConnectionIVMO-P PACKAGE

ATTRIBUTES  
 sLPConnectionIVMOId GET;  
; -- not registered

### t3IVMO-P PACKAGE

BEHAVIOUR t3IVMO-P-B BEHAVIOUR

DEFINED AS  
 Present if the optional Timer T3 is supported.;;

ATTRIBUTES  
 t3Timer REPLACE-WITH-DEFAULT  
 GET-REPLACE;

ATTRIBUTE GROUPS

timers  
 t3Timer;

REGISTERED AS {DLM.poi t3IVMO-P(3)};

**t4IVMO-P PACKAGE**  
**BEHAVIOUR t4IVMO-P-B BEHAVIOUR**  
**DEFINED AS**  
 Present if the Timer T4 is supported.;;  
**ATTRIBUTES**  
 t4Timer REPLACE-WITH-DEFAULT GET-REPLACE,  
 timesT4Expired GET;  
**ATTRIBUTE GROUPS**  
 "GMI":counters  
 timesT4Expired,  
 timers  
 t4Timer;  
**REGISTERED AS {DLM.poi t4IVMO-P(8)}**;  
-- *Name Bindings*

**sLPConnectionIVMO-sLPPM-Management NAME BINDING**  
**SUBORDINATE OBJECT CLASS sLPConnectionIVMO AND SUBCLASSES;**  
**NAMED BY**  
**SUPERIOR OBJECT CLASS sLPPM AND SUBCLASSES;**  
**WITH ATTRIBUTE sLPConnectionIVMOId;**  
**BEHAVIOUR sLPConnectionIVMO-sLPPM-B BEHAVIOUR**  
**DEFINED AS**  
 The name binding which applies when an sLPConnectionIVMO managed object (or an instance of a sub-class of the sLPConnectionIVMO MO class) can be created by management as a subordinate object of a sLPPM managed object (or sub-class), and deleted by management.;;  
**CREATE;**  
**DELETE ONLY-IF-NO-CONTAINED-OBJECTS;**  
**REGISTERED AS {DLM.nboi sLPConnectionIVMO-sLPPM-Management(6)}**;  
-- *Attributes*

**sLPConnectionIVMOId ATTRIBUTE**  
**WITH ATTRIBUTE SYNTAX DLM.NamingString;**  
**MATCHES FOR EQUALITY;**  
**BEHAVIOUR sLPConnectionIVMOId-B BEHAVIOUR**  
**DEFINED AS**  
 Naming attribute for the sLPConnectionIVMO managed object.;;  
**REGISTERED AS {DLM.aoi sLPConnectionIVMOId(31)}**;

## 6 ASN.1 module

DLM {joint-iso-itu-t datalink-layer(15) management(0) asn1Module(2) 0}  
DEFINITIONS IMPLICIT TAGS ::= BEGIN

**IMPORTS**  
 GroupObjects, ObservedValue, PerceivedSeverity  
 FROM Attribute-ASN1Module {joint-iso-itu-t ms(9) smi(3) part2(2) asn1Module(2) 1}  
 SetInfoStatus, AttributeId, ObjectInstance  
 FROM CMIP-1 {joint-iso-itu-t ms(9) cmip(1) modules(0) protocol(3)};

-- "infrastructure" object identifier definitions

**datalink-layer OBJECT IDENTIFIER ::= {joint-iso-itu-t datalink-layer(15)}**

**dloi OBJECT IDENTIFIER ::= {datalink-layer management(0)}**

**sseoi OBJECT IDENTIFIER ::= {dloi standardSpecificExtension(0)}**  
**moi OBJECT IDENTIFIER ::= {dloi objectClass (3)}**  
**poi OBJECT IDENTIFIER ::= {dloi package (4)}**  
**proi OBJECT IDENTIFIER ::= {dloi parameter (5)}**  
**nboi OBJECT IDENTIFIER ::= {dloi nameBinding (6)}**  
**aoi OBJECT IDENTIFIER ::= {dloi attribute (7)}**  
**agoi OBJECT IDENTIFIER ::= {dloi attributeGroup (8)}**  
**acoi OBJECT IDENTIFIER ::= {dloi action (9)}**  
**noi OBJECT IDENTIFIER ::= {dloi notification (10)}**

--  
-- value assignments for Data Link layer specificProblems

--  
**fRMRRReceived OBJECT IDENTIFIER ::=**  
{sseoi specificProblems(11) fRMRRReceived(5)}

```

fRMRReasons OBJECT IDENTIFIER ::= {sseoi specificProblems(11) fRMRReasons(6)}
fRMRReasonsControlFieldUndefinedOrUnimplemented OBJECT IDENTIFIER ::= {sseoi specificProblems(11) fRMRReasons(6) controlFieldUndefinedOrUnimplemented(1)}
fRMRReasonsFormatError OBJECT IDENTIFIER ::= {sseoi specificProblems(11) fRMRReasons(6) formatError(2)}
fRMRReasonsInfoFieldLengthGreater ThanMaximum OBJECT IDENTIFIER ::= {sseoi specificProblems(11) fRMRReasons(6) infoFieldLengthGreater ThanMaximum(3)}
fRMRReasonsInvalidNR OBJECT IDENTIFIER ::= {sseoi specificProblems(11) fRMRReasons(6) invalidNR(4)}
fRMRReasonsNonSpecific OBJECT IDENTIFIER ::= {sseoi specificProblems(11) fRMRReasons(6) nonSpecific(5)}
-- value assignments for Data Link layer specific errorIds for activate action processingFailure errors.
-- activateFailure OBJECT IDENTIFIER ::= {sseoi action(9) activate(1) errors(1) processingFailure(1)}
activateFailureInsufficientResources OBJECT IDENTIFIER ::= {activateFailure insufficientResources(1)}
activateFailureProviderDoesNotExist OBJECT IDENTIFIER ::= {activateFailure providerDoesNotExist(2)}
activateFailureProviderNotAvailable OBJECT IDENTIFIER ::= {activateFailure providerNotAvailable(3)}
activateFailureRequiredServiceNotAvailable OBJECT IDENTIFIER ::= {activateFailure requiredServiceNotAvailable(4)}
activateFailureSystemSpecific OBJECT IDENTIFIER ::= {activateFailure systemSpecific(5)}
-- other definitions
-- datalinkSubsystemId-Value GraphicString ::= "datalinkSubsystem"
FRMRSyntax ::= OCTET STRING
NamingString ::= GraphicString
Integer ::= INTEGER
InterfaceType ::= ENUMERATED{ dTE(0), dCE(1) }
interfaceTypeDefault InterfaceType ::= dTE
MaximumIFrameSize ::= INTEGER
-- in bits, 1080 (135 octets) minimum
MW ::= SEQUENCE{ mWSend [0] IMPLICIT INTEGER (0 .. 4095), mWReceive [1] IMPLICIT INTEGER (0 .. 4095) }
MX ::= SEQUENCE{ mXSend [0] IMPLICIT INTEGER (0 .. 4095), mXReceive [1] IMPLICIT INTEGER (0 .. 4095) }
Octet ::= OCTET STRING(SIZE(1))
OctetString ::= OCTET STRING
SequenceModulus ::= Integer
SLPProtocolState ::= ENUMERATED{ disconnectedPhase(0), linkdisconnection-phase(1), 
```

```
link-set-up-phase(2),  
information-Transfer-phase(3),  
frame-Reject-condition(4),  
busy-condition(5),  
sent-Reject-condition(6),  
system-Parameters-and-error-recovery(7)}
```

```
WindowSize ::= CHOICE{  
    modulo8ws    [0] INTEGER(1..7), -- for modulo 8  
    modulo128ws  [1] INTEGER(1..127)} -- for modulo 128
```

END

## 7 Conformance

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

### 7.1 Conformance requirements to this Recommendation

#### 7.1.1 Static conformance

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

If a claim of conformance is made for support in the manager role, the implementation shall support at least one management operation or notification or action of the managed objects specified by this Recommendation. The conformance requirements in the manager role for those management operations, notifications and actions are identified in Table E.3 and further tables referenced by Annex E.

If a claim of conformance is made for support in the agent role, the implementation shall support one or more instances of the data link subsystem managed object class and the data link service access point managed object class identified in Table E.4 and further tables referenced by Annex E.

If a claim of conformance is made for support in the agent role, the implementation shall support at least one name binding identified in Table E.7 for each supported managed object.

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

#### 7.1.2 Dynamic conformance

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

#### 7.1.3 Management implementation conformance statement requirements

Any MCS proforma, MICS proforma, MOCS proforma, and MRCS proforma which conform to this Recommendation shall be technically identical to the proformas specified in Annexes E, F, G and H preserving table numbering and the index numbers of items, and differing only in pagination and page headers and footers.

The supplier of an implementation which is claimed to conform to this Recommendation shall complete a copy of the Management Conformance Summary (MCS) provided in Annex E as part of the conformance requirements together with any other ICS proformas referenced as applicable from that MCS. Any MCS, MICS, MOCS, and MRCS which conform to this Recommendation shall:

- describe an implementation which conforms to this Recommendation;
- have been completed in accordance with the instructions for completion given in ITU-T Rec. X.724 | ISO/IEC 10165-6;
- include the information necessary to uniquely identify both the supplier and the implementation.

### 7.2 Protocol specific conformance requirements

The supplier of an implementation which is claimed to conform to this Recommendation shall support at least one protocol identified in Table E.2.

### **7.2.1 Conformance to the ISO/IEC 7776**

An implementation claiming conformance to ISO/IEC 7776 in the agent role as a managed implementation shall:

- a) conform to ITU-T Rec. X.282 and ISO/IEC 10742 as defined in 7.1;
- b) support the IAPBDLE MO, the sLPPM MO and sLPConnection MO.

### **7.2.2 Conformance to the ISO/IEC 8802-2 connectionless-mode LLC**

An implementation claiming conformance to ISO/IEC 8802-2 connectionless-mode LLC in the agent role as a managed implementation shall:

- a) conform to ITU-T Rec. X.282 and ISO/IEC 10742 as defined in 7.1;
- b) support the ILCDLE MO and at least one class derived from the ILCCCLPM MO.

### **7.2.3 Conformance to the ISO/IEC 8802-2 connection-mode LLC**

An implementation claiming conformance to ISO/IEC 8802-2 connection-mode LLC in the agent role as a managed implementation shall:

- a) conform to ITU-T Rec. X.282 and ISO/IEC 10742 as defined in 7.1;
- b) support the ILCDLE MO and at least one class derived from the ILCCOPM MO.

### **7.2.4 Conformance to the ISO/IEC 8802 MAC**

An implementation claiming conformance to ISO/IEC 8802 MAC in the agent role as a managed implementation shall:

- a) conform to ITU-T Rec. X.282 and ISO/IEC 10742 as defined in 7.1;
- b) support the mACDLE MO and at least one class derived from the mAC MO.

## **ANNEX A**

### **Allocation of Object Identifiers**

(This annex forms an integral part of this Recommendation)

The following Object Identifiers have been allocated by the main body of this Recommendation.

#### **joint-iso-itu-t**

```
  datalink-layer (15)
    management (0)
      standardSpecificExtension (0)
        action (9)
          activate (1)
          errors (1)
            processingFailure (1)
              insufficientResources (1)
              providerDoesNotExist (2)
              providerNotAvailable (3)
              requiredServiceNotAvailable (4)
              systemSpecific (5)
        specificProblems (11)
          alignmentError (1)
          frameTooLong (4)
          fRMRReceived (5)
          fRMRRReasons (6)
            controlFieldUndefinedOrUnimplemented (1)
            formatError (2)
            infoFieldLengthGreaterThanMaximum (3)
            invalidNR (4)
            nonSpecific (5)
```

**asn1Module** (2)  
(0)  
**objectClass** (3)  
  **datalinkSubsystem** (1)  
  **datalinkEntity** (2)  
  **x25DLE** (3)  
  **sLPPM** (4)  
    **sLPConnection** (5)  
    **sLPConnectionIVMO** (6)  
  **dLSAP** (13)  
**package** (4)  
  **mLP-P** (1)  
  **t3-P** (2)  
  **t3IVMO-P** (3)  
    **link-reset-disconnect-n2-P** (4)  
**mT2-P** (5)  
  **mLP-Counters-P** (6)  
**parameter** (5)  
  **fRMR** (1)  
**nameBinding** (6)  
  **datalinkEntity-datalinkSubsystem-Management** (1)  
  **dLSAP-datalinkEntity-Management** (2)  
  **sLPPM-x25DLE-Management** (3)  
  **sLPConnection-sLPPM-Automatic** (4)  
  **sLPConnection-sLPPM-Management** (5)  
  **sLPConnectionIVMO-sLPPM-Management** (6)  
**attribute** (7)  
  **fRMRsReceived** (1)  
  **fRMRsSent** (2)  
  **iFramesReceived** (3)  
  **iFramesSent** (4)  
  **rEJsReceived** (5)  
  **rEJsSent** (6)  
  **rNRsReceived** (7)  
  **rNRsSent** (8)  
  **sABMsReceived** (9)  
  **sABMsSent** (10)  
  **providerEntityNames** (11)  
  **mT1Timer** (12)  
  **mT2Timer** (13)  
  **mT3Timer** (14)  
  **fCSErrorsReceived** (15)  
  **iFrameDataOctetsReceived** (16)  
  **iFrameDataOctetsSent** (17)  
  **interfaceType** (18)  
  **k** (19)  
  **n1** (20)  
  **n2** (21)  
  **pollsReceived** (22)  
  **sLPPProtocolState** (23)  
  **sequenceModulus** (24)  
  **t1Timer** (25)  
  **t2Timer** (26)  
  **t3Timer** (27)  
  **t4Timer** (28)  
  **timesT1Expired** (29)  
  **timesT3Expired** (30)  
  **sLPConnectionIVMOId** (31)  
    **abnormalLinkDisconnectsReceived**(41)  
    **abnormalLinkDisconnectsSent**(42)  
    **linkResetsReceived**(43)  
    **linkResetsSent**(44)  
    **timesN2Reached**(45)  
    **iFramesReassignments**(46)  
    **mW**(47)  
    **mX**(48)  
    **receivedM1pFramesInGuardRegion**(49)  
    **receivedM1pResets**(50)  
    **timesMT1Expired**(51)

```

mlpFramesReceived(52)
mlpFramesSent(53)
mlpFramesOutsideWindowGuard(54)
attributeGroup (8)
timers (1)
action (9)
notification (10)

```

## ANNEX B

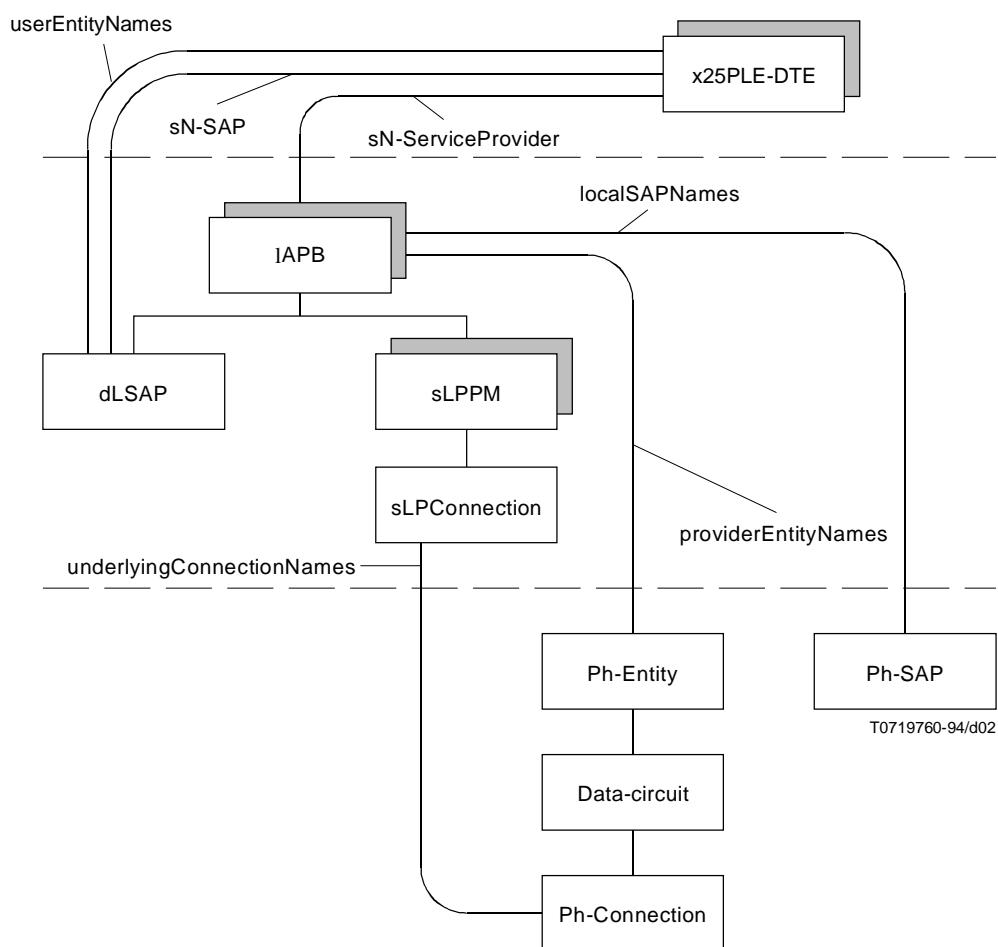
### An Example of the use of Relationship Attributes

(This annex does not form an integral part of this Recommendation)

This annex provides an example of the use of relationship attributes, both within the data link layer and also between the data link layer and its adjoining layers. This example is not intended to be exhaustive. Relationships for other protocol combinations may be constructed in a similar manner, and a particular implementation may be capable of supporting multiple protocols simultaneously. For example, network protocol operation over Recommendation X.25. Such a possibility has only been omitted for reasons of clarity.

Note that some relationships are implied by containment, and therefore no explicit relationship attributes are required.

The example is as follows (see Figure B.1).



**Figure B.1/X.282 – CONS over LAPB (SLP)**

## ANNEX C

### Additional Attributes and Action required for Systems

(This annex does not form an integral part of this Recommendation)

#### C.1 Introduction

In complete intermediate systems, such as a repeater, some attributes and actions are necessary to fill out the management of a complete system. These items are generic in the sense that they are required for managed systems in general. The following items are defined to aid in the completeness of this Recommendation, although it is recognized that they are outside the bounds of the definition area for a layer 2 standard.

#### C.2 Scope

This annex defines additional attributes and an action that are necessary to the management of a complete intermediate system, such as a repeater. They are not specifically related to a Data Link Layer Management Standard.

When a generic systems management standard is available with these definitions (or similar), it is expected that this portion of this Recommendation will be removed.

#### C.3 Attributes and Action

-- *Attributes*

##### aTimeSinceSystemReset ATTRIBUTE

WITH ATTRIBUTE SYNTAX AttributeModule.ResettableCounter32;

##### BEHAVIOUR bTimeSinceSystemReset BEHAVIOUR

###### DEFINED AS

The time in tens of milliseconds since the last time that the system, including network management was reset. This may have been caused by ResetSystemAction or other means. This counter has a value of 0 when initialized.

Though the count is reported in tens of milliseconds, the required resolution is to the nearest 100 ms. The clocking source for the counter shall be accurate to within 1% throughout the full counting range.;;

-- NOTE – The approximate minimum time for counter rollover is 497 days.

REGISTERED AS {iso(1)member-body(2) us(840) 802dot3(10006) repeaterMgt(19) attribute(7) sysResetTime(47)};

##### aRepeaterResetTimeStamp ATTRIBUTE

WITH ATTRIBUTE SYNTAX AttributeModule.Integer32;

##### BEHAVIOUR brepeaterResetTimeStamp BEHAVIOUR

###### DEFINED AS

Not a counter, this attribute provides the value of aTimeSinceSystemReset when the repeater enters the START state. This value may never be greater than aTimeSinceSystemReset.;;

REGISTERED AS {iso(1)member-body(2) us(840) 802dot3(10006) repeaterMgt(19) attribute(7) repeaterResetTimeStamp(48)};

-- *Action*

##### acRestSystemAction ACTION

##### BEHAVIOUR acResetSystem BEHAVIOUR

###### DEFINED AS

This action initializes the resettable management counters of the system and also of all contained objects. The value of non-resettable counters may change as a result of this action.;;

-- NOTE – This action may result in the loss of packets.

**MODE CONFIRMED;**  
**REGISTERED AS {iso(1)member-body(2) us(840) 802dot3(10006) repeaterMgt(19) action(9) resetSystem(49)};**

**AttributeModule**

**DEFINITIONS IMPLICIT TAGS ::= BEGIN**

**ResettableCounter32 ::= INTEGER (0..4294967295)**  
**Integer32 ::= INTEGER (0..4294967295)**

**END**

## ANNEX D

Annex D does not exist in Recommendation X.282, and is introduced in order to align Annexes E, F, G and H with their counterparts in ISO/IEC 10742.

## ANNEX E<sup>1</sup>

### MCS proforma

#### E.1 Introduction

##### E.1.1 Purpose and structure

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

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

##### E.1.2 Instructions for completing the MCS proforma to produce an MCS<sup>2</sup>

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

##### E.1.3 Symbols, abbreviations and terms

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

- m Mandatory
- o Optional

---

<sup>1</sup> Copyright release for MCS proforma

Users of this Recommendation may freely reproduce the MCS proforma in this annex so that it can be used for its intended purpose, and may further publish the completed MCS.

<sup>2</sup> Instructions for completing the MCS proforma are specified in ITU-T Rec. X.724 | ISO/IEC 10165-6.

- c Conditional
- x Prohibited
- Not applicable or out of scope

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

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

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

- Y Implemented
- N Not implemented
- No answer required
- Ig The item is ignored (i.e. processed syntactically but not semantically)

## **E.2 Identification of the implementation**

### **E.2.1 Date of statement**

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

Date of statement

### **E.2.2 Identification of the implementation**

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

### **E.2.3 Contact**

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

Recommendation to which conformance is claimed

### **E.3.1 Technical corrigenda implemented**

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

--

### **E.3.2 Amendments implemented**

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

--

## **E.4 Management conformance summary**

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

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

**Table E.1/X.282 – Roles**

<b>Index</b>	<b>Roles supported</b>	<b>Status</b>	<b>Support</b>	<b>Additional information</b>
1	Manager role support	o.1		
2	Agent role support	o.1		

The supplier of the implementation shall specify the protocols that are supported, in Table E.2.

**Table E.2/X.282 – Protocol**

<b>Index</b>	<b>Protocol supported</b>	<b>Status</b>	<b>Support</b>	<b>Additional information</b>
1	ISO/IEC 7776 support	o.2		
2	ISO/IEC 8802-2 (CL mode) support	o.2		
3	ISO/IEC 8802-2 (CO mode) support	o.2		
4	ISO/IEC 8802 MAC support	c1		
	c1: if E.2/2a or E.2/3a then m else –			

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

**Table E.3/X.282 – Manager role minimum conformance requirement**

<b>Index</b>	<b>Item</b>	<b>Status</b>	<b>Support</b>	<b>Additional information</b>
1	Operations on managed objects	c1		
2	Attribute value change notification for EWMA metric monitor managed object	c1		
3	Object creation notification for EWMA metric monitor managed object	c1		
4	Object deletion notification for EWMA metric monitor managed object	c1		
5	Quality of Service alarm notification for EWMA metric monitor managed object	c1		
6	State change notification for EWMA metric monitor managed object	c1		
7	Object creation notification for LAPB data link entity managed object	c2		
8	Object deletion notification for LAPB data link entity managed object	c2		
9	State change notification for LAPB data link entity managed object	c2		
10	Object creation notification for LLC data link entity managed object	c3		
11	Object deletion notification for LLC data link entity managed object	c3		
12	State change notification for LLC data link entity managed object	c3		
13	Object creation notification for MAC data link entity managed object	c4		
14	Object deletion notification for MAC data link entity managed object	c4		
15	State change notification for MAC data link entity managed object	c4		
16	Deactivate action for SLP connection managed object	c2		
17	Communications alarm notification for SLP connection managed object	c2		
18	Object creation notification for SLP connection managed object	c2		
19	Object deletion notification for SLP connection managed object	c2		
20	Object creation notification for SLP connection IV managed object	c2		
21	Object deletion notification for SLP connection IV managed object	c2		
22	Activate action for SLP protocol machine managed object	c2		
23	Deactivate action for SLP protocol machine managed object	c2		
24	Object creation notification for SLP protocol managed object	c2		
25	Object deletion notification for SLP protocol managed object	c2		
26	State change notification for SLP protocol machine managed object	c2		
c1: if E.1/1a then o.3 else – c2: if E.1/1a and E.2/1a then o.3 else – c3: if E.1/1a and (E.2/2a or E.2/3a) then o.3 else – c4: if E.1/1a and E.2/4a then o.3 else –				

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

**Table E.4/X.282 – Agent role minimum conformance requirement**

Index	Item	Status	Support	Additional information
1	Data link sub-system managed object	m		
2	Data link service access point managed object	m		
3	LAPB data link entity managed object	c5		
4	LAPB single link protocol machine managed object	c5		
5	LAPB single link protocol connection managed object	c5		
6	LAPB single link protocol connection initial values managed object	c6		
7	MAC data link entity managed object	c7		
8	MAC managed object	c8		
9	LLC data link managed object	c9		
10	LLC connectionless protocol machine managed object	c10		
11	LLC connection-mode protocol machine managed object	c11		
c5: if E.1/2a and E.2/1a then m else – c6: if E.1/2a and E.2/1a then o else – c7: if E.1/2a and E.2/4a then m else – c8: if E.1/2a and E.2/4a then o else – c9: if E.1/2a and E2/2a or G.2/3a then m else – c10: if E.1/2a and E.2/2a then o else – c11: if E.1/2a and E.2/3a then o else –				

**Table E.5/X.282 – Logging of event records**

Index		Status	Support	Additional information
1	Does the implementation support logging of event records in agent role?	c12		
	c12: if E.1/2a then o else –			

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

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

In Tables E.6 to E.8, the Status column is used to indicate whether the supplier of the implementation is required to complete the referenced tables or referenced items. Conformance requirements are as specified in the referenced tables or referenced items and are not changed by the value of the MCS Status column. Similarly, the Support column is used by the supplier of the implementation to indicate completion of the referenced tables or referenced items.

**Table E.6/X.282 – MOCS support summary**

Index	Identification of the document that includes the MOCS proforma	Table numbers of MOCS proforma	Description	Con-straints and values	Status	Support	Table numbers of MOCS	Additional information
1	"ISO/IEC 10742"	G.1 – G.4	dLSAP	–	m			
2	"ISO/IEC 10742"	G.5 – G.8	datalinkSubsystem	–	m			
3	"ISO/IEC 10742"	G.9 – G.14	eWMAMetricMonitor	–	o			
4	"ISO/IEC 10742"	G.15 – G.20	lAPBDLE	–	c13			
5	"ISO/IEC 10742"	G.21	ILCCLPM	–	c14			
6	"ISO/IEC 10742"	G.22	ILCCOPM	–	c15			
7	"ISO/IEC 10742"	G.23 – G.28	ILCDLE	–	c16			
8	"ISO/IEC 10742"	G.29	mAC	–	c17			
9	"ISO/IEC 10742"	G.30 – G.35	mACDLE	–	c18			
10	"ISO/IEC 10742"	G.36 – G.39	resourceTypeId	–	o			
11	"ISO/IEC 10742"	G.40 – G.47	sLPConnection	–	c19			
12	"ISO/IEC 10742"	G.48 – G.53	sLPConnectionIVMO	–	c20			
13	"ISO/IEC 10742"	G.54 – G.60	sLPPM	–	c21			
14	"ISO/IEC 10164-1"	Table C.1 – C.4	objectCreationRecord	–	c22			
15	"ISO/IEC 10164-1"	Table C.5 – C.8	objectDeletionRecord	–	c22			
16	"ISO/IEC 10164-1"	Table C.9 – C.12	attributeValueChange Record	–	c23			
17	"ISO/IEC 10164-2"	Table C.1 – C.4	stateChangeRecord	–	c24			
18	"ISO/IEC 10164-4"	Table C.1 – C.4	alarmRecord	–	c25			
c13: if E.4/3a then m else – c14: if E.4/10a then m else – c15: if E.4/11a then m else – c16: if E.4/9a then m else – c17: if E.4/8a then m else – c18: if E.4/7a then m else – c19: if E.4/5a then m else – c20: if E.4/6a then m else – c21: if E.4/4a then m else – c22: if E.6/4a or E.6/5a or E.6/6a or E.6/7a or E.6/8a or E.6/9a or E.6/11a or E.6/12a or E.6/13a then m else – c23: if E.6/4a then m else – c24: if E.6/4a or E.6/5a or E.6/6a or E.6/7a or E.6/8a or E.6/9a or E.6/13a then m else – c25: if E.6/4a or E.6/11a then m else –								

**Table E.7/X.282 – MRCS support summary**

Index	Identification of the document that includes the MRCS proforma	Table numbers of MRCS proforma	Description	Con-straints and values	Status	Support	Table numbers of MRCS	Additional information
1	"ISO/IEC 10742"	Table H.1/1	dLSAP-datalinkEntity-Management	–	o.4			
2	"ISO/IEC 10742"	Table H.1/2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": sap1-communicationsEntity	–	o.4			
3	"ISO/IEC 10742"	Table H.1/3	datalinkEntity-datalinkSubsystem-Management	–	o.5			
4	"ISO/IEC 10742"	Table H.1/4	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communicationsEntity-subsystem	–	o.5			
5	"ISO/IEC 10742"	Table H.1/5	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": subsystem-system	–	m			
6	"ISO/IEC 10742"	Table H.1/6	eWMAMetricMonitor-ILCDLE-Management	–	c26			
7	"ISO/IEC 10742"	Table H.1/7	eWMAMetricMonitor-mACDLE-Management	–	c26			
8	"ISO/IEC 10742"	Table H.1/8	ILCCLPM-ILCDLE-Management	–	c27			
9	"ISO/IEC 10742"	Table H.1/9	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": clProtocolMachine-entity	–	c27			
10	"ISO/IEC 10742"	Table H.1/10	ILCCOPM-ILCDLE-Management	–	c28			
11	"ISO/IEC 10742"	Table H.1/11	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": coProtocolMachine-entity	–	c29			
12	"ISO/IEC 10742"	Table H.1/12	mAC-mACDLE-Automatic	–	c30			
13	"ISO/IEC 10742"	Table H.1/13	mAC-mACDLE-Management	–	c30			
14	"ISO/IEC 10742"	Table H.1/14	resourceTypeId-ILCDLE-Automatic	–	c31			
15	"ISO/IEC 10742"	Table H.1/15	resourceTypeId-mACDLE-Automatic	–	c31			

**Table E.7/X.282 – MRCS support summary (concluded)**

Index	Identification of the document that includes the MRCS proforma	Table numbers of MRCS proforma	Description	Con-straints and values	Status	Support	Table numbers of MRCS	Additional information
16	"ISO/IEC 10742"	Table H.1/16	sLPConnection-sLPPM-Automatic	–	c32			
17	"ISO/IEC 10742"	Table H.1/17	sLPConnection-sLPPM-Management	–	c32			
18	"ISO/IEC 10742"	Table H.1/18	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": singlePeerConnection-coProtocolMachine	–	c32			
19	"ISO/IEC 10742"	Table H.1/19	sLPConnectionIVMO-sLPPM-Management	–	c33			
20	"ISO/IEC 10742"	Table H.1/20	sLPPM-IAPBDE-Management	–	c34			
21	"ISO/IEC 10164-6"	Table D.1/1	logRecord-log	–	c35			
c26: if E.6/3a then o.6 else – c27: if E.6/4a then o.7 else – c28: if E.6/5a then o.9 else – c29: if E.6/6a then o.9, if E.6/13a then o.10, if E.6/6a and E.6/13a then o.9 and o.10 else – c30: if E.6/8a then o.11 else – c31: if E.6/10a then o.12 else – c32: if E.6/11a then o.13 else – c33: if E.6/12a then m else – c34: if E.6/13a then o.10 else – c35: if E.6/14a or E.6/15a or E.6/16a or E.6/17a or E.6/18a then m else –								

**Table E.8/X.282 – MICS support summary**

Index	Identification of the document that includes the MICS proforma	Table numbers of MICS proforma	Description	Con-straints and values	Status	Support	Table numbers of MICS	Additional information
1	"ISO/IEC 10742"	Table F.1 to F.23	Management operations	–	c36			
2	"ISO/IEC 10742"	Table F.24	Notifications	–	c37			
3	"ISO/IEC 10742"	Table F.25	Actions	–	c38			
c36: if E.3/1a then m else – c37: if E.3/2a or E.3/3a or E.3/4a or E.3/5a or E.3/6a or E.3/7a or E.3/8a or E.3/9a or E.3/10a or E.3/11a or E.3/12a or E.3/13a or E.3/14a E.3/15 or E.3/17a or E.3/18a or E.3/19a or E.3/20a or E.3/21a or E.3/24a or E.3/25a or E.3/26a then m else – c38: if E.3/16a or E.3/22a or E.3/23a then m else –								

## ANNEX F<sup>3</sup>

### MICS proforma

#### **F.1 Introduction**

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

#### **F.2 Instructions for completing the MICS proforma to produce a MICS**

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

#### **F.3 Symbols, abbreviations and terms**

The MICS proforma contained in this annex is comprised of information in tabular form, in accordance with ITU-T Rec. X.291 and ISO/IEC 9646-2.

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

#### **F.4 Statement of conformance to the management information**

##### **F.4.1 Attributes**

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

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<sup>3</sup> Copyright release for MICS proforma

Users of this Recommendation may freely reproduce the MICS proforma in this annex so that it can be used for its intended purpose, and may further publish the completed MICS.

#### **F.4.1.1 The Data Link Service Access Point managed object**

**Table F.1/X.282 – dLSAP Attribute support**

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default	
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c1		o.14		—		—		—		—	
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	c1		o.14		—		—		—		—	
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	c1		o.14		—		—		—		—	
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c1		o.14		—		—		—		—	
5	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": sap1Address	{2 9 3 5 7 8}	INTEGER	—		o.14		—		—		—		—	
6	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": sapId	{2 9 3 5 7 10}	GraphicString	c1		o.14		—		—		—		—	
7	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": userEntityNames	{2 9 3 5 7 15}	SET OF ObjectInstance	—		o.14		—		—		—		—	

#### F.4.1.2 The Data Link Sub-system managed object

**Table F.2/X.282 – datalinkSubsystem Attribute support**

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	–		o.14		–		–		–		–		
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	–		o.14		–		–		–		–		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	–		o.14		–		–		–		–		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	–		o.14		–		–		–		–		
5	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": subsystemId	{2 9 3 5 7 11}	GraphicString	–		o.14		–		–		–		–		

#### F.4.1.3 The EWMA Metric Monitor managed object

Table F.3/X.282 – eWMAMetricMonitor Attribute support

Recommendation X.282  
(06/99)

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default	
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": administrativeState	{2 9 3 2 7 31}	ENUMERATED	o.14		o.14		o.14		–		–		–	
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	o.14		o.14		–		–		–		–	
3	counterModulus	{1 2 840 10011 7 5}	INTEGER	–		o.14		o.14		–		–		–	
4	counterTMinusGP	{1 2 840 10011 7 4}	INTEGER	–		o.14		o.14		–		–		–	
5	derivedGauge	{1 2 840 10011 7 6}	CHOICE derivedGauge NotCurrent	o.14		o.14		o.14		–		–		–	
6	estimateOfMean	{1 2 840 10011 7 7}	CHOICE	o.14		o.14		o.14		–		–		–	
7	granularityPeriod	{1 2 840 10011 7 8}	CHOICE	o.14		o.14		o.14		–		–		–	
8	movingTimePeriod	{1 2 840 10011 7 12}	CHOICE	o.14		o.14		o.14		–		–		–	
9	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o.14		o.14		–		–		–		–	
10	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	o.14		o.14		–		–		–		–	
11	observedAttributeId	{1 2 840 10011 7 9}	AttributeId	o.14		o.14		o.14		–		–		–	
12	observedManaged ObjectInstance	{1 2 840 10011 7 10}	ObjectInstance	o.14		o.14		o.14		–		–		–	
13	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	–		o.14		–		–		–		–	

**Table F.3/X.282 – eWMAMetricMonitor Attribute support (concluded)**

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
14	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o.14		o.14		–		–		–		–		
15	scannerId	{1 2 840 10011 7 3}	GraphicString	o.14		o.14		–		–		–		–		
16	severityIndicatingThreshold	{1 2 840 10011 7 11}	SET OF SEQUENCE	o.14		o.14		o.14		o.14		o.14		–		

#### F.4.1.4 The LAPB Data Link Entity managed object

Table F.4/X.282 – IAPBDLE Attribute support

Recommendation X.282  
(06/99)

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c2		o.14		–		–		–		–		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communications EntityId	{2 9 3 5 7 0}	GraphicString	c2		o.14		–		–		–		–		
3	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": localSapNames	{2 9 3 5 7 6}	SET OF ObjectInstance	–		o.14		–		–		–		–		
4	mT1Timer	{2 15 0 7 12}	SEQUENCE	c2		o.14		o.14		–		–		0.14		
5	mT2Timer	{2 15 0 7 13}	SEQUENCE	c2		o.14		o.14		–		–		0.14		
6	mT3Timer	{2 15 0 7 14}	SEQUENCE	c2		o.14		o.14		–		–		0.14		
7	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	c2		o.14		–		–		–		–		
8	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	c2		o.14		–		–		–		–		
9	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	–		o.14		–		–		–		–		
10	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c2		o.14		–		–		–		–		
11	providerEntityNames	{2 15 0 7 11}	SET OF ObjectInstance	c2		o.14		o.14		–		–		0.14		

c2: if F.19/1a then o.14 else –

#### F.4.1.5 The LLC Data Link Entity managed object

Table F.5/X.282 – ILCDLE Attribute support

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c3		o.14		–		–		–		–		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communications EntityId	{2 9 3 5 7 0}	GraphicString	c3		o.14		–		–		–		–		
3	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": localSapNames	{2 9 3 5 7 6}	SET OF ObjectInstance	–		o.14		–		–		–		–		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	c3		o.14		–		–		–		–		
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	c3		o.14		–		–		–		–		
6	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	–		o.14		–		–		–		–		
7	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c3		o.14		–		–		–		–		
8	providerEntityNames	{2 15 0 7 11}	SET OF ObjectInstance	c3		o.14		o.14		–		–		o.14		

c3: if F.20/1a then o.14 else –

#### F.4.1.6 The MAC Data Link Entity managed object

Table F.6/X.282 – mACDLE Attribute support

Recommendation X.282  
(06/99)

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c4		o.14		–		–		–		–		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communicationsEntityId	{2 9 3 5 7 0}	GraphicString	c4		o.14		–		–		–		–		
3	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": localSapNames	{2 9 3 5 7 6}	SET OF ObjectInstance	–		o.14		–		–		–		–		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	c4		o.14		–		–		–		–		
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	c4		o.14		–		–		–		–		
6	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	–		o.14		–		–		–		–		
7	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c4		o.14		–		–		–		–		
8	providerEntityNames	{2 15 0 7 11}	SET OF ObjectInstance	c4		o.14		o.14		–		–		o.14		

c4: if F.21/1a then o.14 else –

#### F.4.1.7 The Resource TypeId managed object

**Table F.7/X.282 – resourceTypeId Attribute support**

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	–		o.14		–		–		–		–		
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	–		o.14		–		–		–		–		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	–		o.14		–		–		–		–		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	–		o.14		–		–		–		–		
5	resourceInfo	{1 2 840 10011 7 2}	SEQUENCE	–		o.14		–		–		–		–		
6	resourceTypeIdName	{1 2 840 10011 7 1}	GraphicString	–		o.14		–		–		–		–		

#### F.4.1.8 The LAPB Single Link Protocol Connection managed object

Table F.8/X.282 – sLPConnection Attribute support

Recommendation X.282  
(06/99)

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	–		0.14		–		–		–		–		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": connectionId	{2 9 3 5 7 1}	GraphicString	–		0.14		–		–		–		–		
3	fCSErrorsReceived	{2 15 0 7 15}	INTEGER	–		0.14		–		–		–		–		
4	fRMRsReceived	{2 15 0 7 1}	INTEGER	–		0.14		–		–		–		–		
5	fRMRsSent	{2 15 0 7 2}	INTEGER	–		0.14		–		–		–		–		
6	iFrameDataOctets Received	{2 15 0 7 16}	INTEGER	–		0.14		–		–		–		–		
7	iFrameDataOctets Sent	{2 15 0 7 17}	INTEGER	–		0.14		–		–		–		–		
8	iFramesReceived	{2 15 0 7 3}	INTEGER	–		0.14		–		–		–		–		
9	iFramesSent	{2 15 0 7 4}	INTEGER	–		0.14		–		–		–		–		
10	interfaceType	{2 15 0 7 18}	ENUMERATED	–		0.14		0.14		–		–		0.14		
11	k	{2 15 0 7 19}	CHOICE	–		0.14		0.14		–		–		0.14		
12	n1	{2 15 0 7 20}	INTEGER	–		0.14		0.14		–		–		0.14		
13	n2	{2 15 0 7 21}	INTEGER	–		0.14		0.14		–		–		0.14		
14	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	–		0.14		–		–		–		–		
15	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	–		0.14		–		–		–		–		
16	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	–		0.14		–		–		–		–		
17	pollsReceived	{2 15 0 7 22}	INTEGER	–		0.14		–		–		–		–		
18	rEJsReceived	{2 15 0 7 5}	INTEGER	–		0.14		–		–		–		–		
19	rEJsSent	{2 15 0 7 6}	INTEGER	–		0.14		–		–		–		–		
20	rNRsReceived	{2 15 0 7 7}	INTEGER	–		0.14		–		–		–		–		
21	rNRsSent	{2 15 0 7 8}	INTEGER	–		0.14		–		–		–		–		

**Table F.8/X.282 – sLPConnection Attribute support (concluded)**

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
22	sABMsReceived	{2 15 0 7 9}	INTEGER	–	o.14	–	–	–	–	–	–	–	–	–	–	
23	sABMsSent	{2 15 0 7 10}	INTEGER	–	o.14	–	–	–	–	–	–	–	–	–	–	
24	sLPProtocolState	{2 15 0 7 23}	ENUMERATED	–	o.14	–	–	–	–	–	–	–	–	–	–	
25	sequenceModulus	{2 15 0 7 24}	INTEGER	–	o.14	o.14	–	–	–	–	–	–	–	o.14	–	
26	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": supportedConnectionNames	{2 9 3 5 7 12}	SET OF ObjectInstance	–	o.14	–	–	–	–	–	–	–	–	–	–	
27	t1Timer	{2 15 0 7 25}	SEQUENCE	–	o.14	o.14	o.14	–	–	–	–	–	o.14	–	–	
28	t2Timer	{2 15 0 7 26}	SEQUENCE	–	o.14	o.14	o.14	–	–	–	–	–	o.14	–	–	
29	t3Timer	{2 15 0 7 27}	SEQUENCE	–	o.14	o.14	o.14	–	–	–	–	–	o.14	–	–	
30	t4Timer	{2 15 0 7 28}	SEQUENCE	–	o.14	o.14	o.14	–	–	–	–	–	o.14	–	–	
31	timesT1Expired	{2 15 0 7 29}	INTEGER	–	o.14	–	–	–	–	–	–	–	–	–	–	
32	timesT3Expired	{2 15 0 7 30}	INTEGER	–	o.14	o.14	–	–	–	–	–	–	–	o.14	–	
33	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": underlying ConnectionNames	{2 9 3 5 7 14}	SET OF ObjectInstance	–	o.14	–	–	–	–	–	–	–	–	–	–	

#### F.4.1.9 The LAPB Single Link Protocol Connection Initial Values managed object

**Table F.9/X.282 – sLPConnectionIVMO Attribute support**

Recommendation X.282  
(06/99)

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default	
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	o.14		o.14		–		–		–		–	
2	interfaceType	{2 15 0 7 18}	ENUMERATED	o.14		o.14		o.14		–		–		o.14	
3	k	{2 15 0 7 19}	CHOICE	o.14		o.14		o.14		–		–		o.14	
4	n1	{2 15 0 7 20}	INTEGER	o.14		o.14		o.14		–		–		o.14	
5	n2	{2 15 0 7 21}	INTEGER	o.14		o.14		o.14		–		–		o.14	
6	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o.14		o.14		–		–		–		–	
7	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	o.14		o.14		–		–		–		–	
8	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o.14		o.14		–		–		–		–	
9	sLPConnectionIVMOId	{2 15 0 7 31}	GraphicString	o.14		o.14		–		–		–		–	
10	sequenceModulus	{2 15 0 7 24}	INTEGER	o.14		o.14		o.14		–		–		o.14	
11	t1Timer	{2 15 0 7 25}	SEQUENCE	o.14		o.14		o.14		–		–		o.14	
12	t2Timer	{2 15 0 7 26}	SEQUENCE	o.14		o.14		o.14		–		–		o.14	
13	t3Timer	{2 15 0 7 27}	SEQUENCE	o.14		o.14		o.14		–		–		o.14	
14	t4Timer	{2 15 0 7 28}	SEQUENCE	o.14		o.14		o.14		–		–		o.14	

#### F.4.1.10 The LAPB Single Link Protocol Machine managed object

Table F.10/X.282 – sLPPM Attribute support

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c5		o.14		–		–		–		–		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": coProtocolMachineId	{2 9 3 5 7 3}	GraphicString	c5		o.14		–		–		–		–		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	c5		o.14		–		–		–		–		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	c5		o.14		–		–		–		–		
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	–		o.14		–		–		–		–		
6	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c5		o.14		–		–		–		–		
c5: if F.23/1a then o.14 else –																

#### F.4.2 Attribute groups

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

##### F.4.2.1 The LAPB Data Link Entity managed object

**Table F.11/X.282 – LAPBDLE Attribute group support**

Index	Attribute group template label	Value of object identifier for attribute group	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": state	{2 9 3 2 8 1}	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	o.14		–		
2	timers	{2 1 5 0 8 1}	mT1Timer mT2Timer mT3Timer	o.14		o.14		

##### F.4.2.2 The LLC Data Link Entity managed object

**Table F.12/X.282 – ILCDLE Attribute group support**

Index	Attribute group template label	Value of object identifier for attribute group	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": state	{2 9 3 2 8 1}	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	o.14		–		

##### F.4.2.3 The MAC Data Link Entity managed object

**Table F.13/X.282 – mACDLE Attribute group support**

Index	Attribute group template label	Value of object identifier for attribute group	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": state	{2 9 3 2 8 1}	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	o.14		–		

#### F.4.2.4 The LAPB Single Link Protocol Connection managed object

**Table F.14/X.282 – sLPConnection Attribute group support**

Index	Attribute group template label	Value of object identifier for attribute group	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": counters	{2 9 3 5 8 0}	fCSErrorsReceived fRMRsReceived fRMRsSent iFrameDataOctetsReceived iFrameDataOctetsSent iFramesReceived iFramesSent pollsReceived rEJsReceived rEJsSent rNRsReceived rNRsSent sABMsReceived sABMsSent timesT1Expired timerT3Expired (condition)	o.14		–		
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": state	{2 9 3 2 8 1}	sLPProtocolState	o.14		–		
3	timers	{2 15 0 8 1}	t1Timer t2Timer t4Timer t3Timer (condition)	o.14		o.14		

#### F.4.2.5 The LAPB Single Link Protocol Connection Initial Values managed object

**Table F.15/X.282 – sLPConnectionIVMO Attribute group support**

Index	Attribute group template label	Value of object identifier for attribute group	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	timers	{2 15 0 8 1}	t1Timer t2Timer t4Timer t3Timer (condition)	o.14		o.14		

#### F.4.2.6 The LAPB Single Link Protocol Machine managed object

**Table F.16/X.282 – sLPPM Attribute group support**

Index	Attribute group template label	Attribute group template label	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": state	{2 9 3 2 8 1}	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	o.14		–		

#### F.4.3 Create and delete management operations

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

##### F.4.3.1 The Data Link Service Access Point managed object

**Table F.17/X.282 – Create and delete support**

Index	Operation	Constraints and values	Status	Support	Additional information
1	Create support	dLSAP MO	o		
1.1	Create with reference object	–	–		
2	Delete support	dLSAP MO	o		

##### F.4.3.2 The EWMA Metric Monitor managed object

**Table F.18/X.282 – Create and delete support**

Index	Operation	Constraints and values	Status	Support	Additional information
1	Create support	eWMAMetricMonitor MO	o.14		
1.1	Create with reference object	–	–		
2	Delete support	eWMAMetricMonitor MO	o.14		

##### F.4.3.3 The LAPB Data Link Entity managed object

**Table F.19/X.282 – Create and delete support**

Index	Operation	Constraints and values	Status	Support	Additional information
1	Create support	lAPBDLE MO	o		
1.1	Create with reference object	–	–		
2	Delete support	lAPBDLE MO	o		

#### F.4.3.4 The LLC Data Link Entity managed object

**Table F.20/X.282 – Create and delete support**

Index	Operation	Constraints and values	Status	Support	Additional information
1	Create support	ILCDLE MO	o		
1.1	Create with reference object	–	–		
2	Delete support	ILCDLE MO	o		

#### F.4.3.5 The MAC Data Link Entity managed object

**Table F.21/X.282 – Create and delete support**

Index	Operation	Constraints and values	Status	Support	Additional information
1	Create support	mACDLE MO	o		
1.1	Create with reference object	–	–		
2	Delete support	mACDLE MO	o		

#### F.4.3.6 The LAPB Single Link Protocol Connection Initial Values managed object

**Table F.22/X.282 – Create and delete support**

Index	Operation	Constraints and values	Status	Support	Additional information
1	Create support	sLPConnectionIVMO	o.14		
1.1	Create with reference object	–	–		
2	Delete support	sLPConnectionIVMO	o.14		

#### F.4.3.7 The LAPB Single Link Protocol Machine managed object

**Table F.23/X.282 – Create and delete support**

Index	Operation	Constraints and values	Status	Support	Additional information
1	Create support	sLPPM MO	o		
1.1	Create with reference object	–	–		
2	Delete support	sLPPM MO	o		

#### F.4.4 Notifications

The specifier of a manager role implementation that claims to support the notifications specified in this Recommendation shall import a copy of Table F.24 and complete it.

**Table F.24/X.282 – Notification support**

Index	Notification type template label	Value of object identifier for notification type	Support				Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field			Constraints and values	Status	Support	Additional information
			Con-	Non-con-	firm	firm					Constraints and values	Status				
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": attributeValueChange	{2 9 3 2 10 1}	–	c6				1.1	AttributeValueChangeInfo	–	Information Syntax SEQUENCE	c6				
								1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	c:m				
								1.1.2	attributeIdentifierList	{2 9 3 2 7 8}	SET OF AttributeId	c:m				
								1.1.3	attributeValueChangeDefinition	{2 9 3 2 7 10}	SET OF SEQUENCE	c:m				
								1.1.3.1	attributeID	–	AttributeId	c:m				
								1.1.3.2	oldAttributeValue	–	ANY DEFINED BY attributeID	c:m				
								1.1.3.3	newAttributeValue	–	ANY DEFINED BY attributeID	c:m				
								1.1.4	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	c:m				
								1.1.5	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:m				
								1.1.5.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m				
								1.1.5.2	sourceObjectInst	–	ObjectInstance	c:m				
								1.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	c:m				
								1.1.7	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c:m				
								1.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m				
								1.1.7.2	significance	–	BOOLEAN	c:m				
								1.1.7.3	information	–	ANY DEFINED BY identifier	c:m				

**Table F.24/X.282 – Notification support (continued)**

Index	Notification type template label	Value of object identifier for notification type	Support				Additional information	Constraints and values	Status	Support	Additional information	
			Constraints and values	Status	Con-	Non-con-	Additional	Subindex	Notification field name label	Value of object identifier of attribute type associated with field		
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}	–	c7				2.1	ObjectInfo	–	Information Syntax SEQUENCE	c7
								2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	c:m
								2.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	c:m
								2.1.3	notification Identifier	{2 9 3 2 7 16}	INTEGER	c:m
								2.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:m
								2.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m
								2.1.4.2	sourceObjectInst	–	ObjectInstance	c:m
								2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	c:m
								2.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	c:m
								2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m
								2.1.6.2	significance	–	BOOLEAN	c:m
								2.1.6.3	information	–	ANY DEFINED BY identifier	c:m
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}	–	c8				3.1	ObjectInfo	–	Information Syntax SEQUENCE	c8
								3.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	c:m
								3.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	c:m
								3.1.3	notification Identifier	{2 9 3 2 7 16}	INTEGER	c:m
								3.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:m
								3.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m
								3.1.4.2	sourceObjectInst	–	ObjectInstance	c:m
								3.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	c:m
								3.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	c:m

Table F.24/X.282 – Notification support (*continued*)

Support														
Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Con-	Non-con-	Additional	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
					firm ed	firmed	information			–	OBJECT IDENTIFIER	c:m		
								3.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m		
								3.1.6.2	significance	–	BOOLEAN	c:m		
								3.1.6.3	information	–	ANY DEFINED BY identifier	c:m		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": qualityofService Alarm	{2 9 3 2 10 11}	–	c9				4.1	AlarmInfo	–	Information Syntax SEQUENCE	c9		
								4.1.1	probableCause	{2 9 3 2 7 18}	CHOICE	c:m		
								4.1.1.1	globalValue	–	OBJECT IDENTIFIER	c:m		
								4.1.1.2	localValue	–	INTEGER	c:m		
								4.1.2	specificProblems	{2 9 3 2 7 27}	SET OF CHOICE	c:m		
								4.1.2.1	OBJECT IDENTIFIER	–	OBJECT IDENTIFIER	c:m		
								4.1.2.2	INTEGER	–	INTEGER	c:m		
								4.1.3	perceivedSeverity	{2 9 3 2 7 17}	ENUMERATED	c:m		
								4.1.4	backedUpStatus	{2 9 3 2 7 11}	BOOLEAN	c:m		
								4.1.5	backUpObject	{2 9 3 2 7 40}	ObjectInstance	c:m		
								4.1.6	trendIndication	{2 9 3 2 7 30}	ENUMERATED	c:m		
								4.1.7	thresholdInfo	{2 9 3 2 7 29}	SEQUENCE	c:m		
								4.1.7.1	triggered Threshold	–	AttributeId	c:m		
								4.1.7.2	observedValue	–	CHOICE	c:m		
								4.1.7.2.1	integer	–	INTEGER	c:m		
								4.1.7.2.2	real	–	REAL	c:m		
								4.1.7.3	thresholdLevel	–	CHOICE	c:m		
								4.1.7.3.1	up	–	SEQUENCE	c:m		
								4.1.7.3.1.1	high	–	CHOICE	c:m		
								4.1.7.3.1.1.1	integer	–	INTEGER	c:m		
								4.1.7.3.1.1.2	real	–	REAL	c:m		
								4.1.7.3.1.2	low	–	CHOICE	c:m		
								4.1.7.3.1.2.1	integer	–	INTEGER	c:m		

**Table F.24/X.282 – Notification support (continued)**

Index	Notification type template label	Value of object identifier for notification type	Support		Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
			Confirmed	Non-confirmed							
						4.1.7.3.1.2.2	real	–	REAL	c:m	
						4.1.7.3.2	down	–	SEQUENCE	c:m	
						4.1.7.3.2.1	high	–	CHOICE	c:m	
						4.1.7.3.2.1.1	integer	–	INTEGER	c:m	
						4.1.7.3.2.1.2	real	–	REAL	c:m	
						4.1.7.3.2.2	low	–	CHOICE	c:m	
						4.1.7.3.2.2.1	integer	–	INTEGER	c:m	
						4.1.7.3.2.2.2	real	–	REAL	c:m	
						4.1.7.4	armTime	–	GeneralizedTime	c:m	
						4.1.8	notification Identifier	{2 9 3 2 7 16}	INTEGER	c:m	
						4.1.9	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:m	
						4.1.9.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	
						4.1.9.2	sourceObjectInst	–	ObjectInstance	c:m	
						4.1.10	stateChange Definition	{2 9 3 2 7 28}	SET OF SEQUENCE	c:m	
						4.1.10.1	attributeID	–	AttributeId	c:m	
						4.1.10.2	oldAttributeValue	–	ANY DEFINED BY attributeID	c:m	
						4.1.10.3	newAttribute Value	–	ANY DEFINED BY attributeID	c:m	
						4.1.11	monitored Attributes	{2 9 3 2 7 15}	SET OF Attribute	c:m	
						4.1.12	proposedRepair Actions	{2 9 3 2 7 19}	SET OF CHOICE	c:m	
						4.1.12.1	OBJECT IDENTIFIER	–	OBJECT IDENTIFIER	c:m	
						4.1.12.2	INTEGER	–	INTEGER	c:m	
						4.1.13	additionalText	{2 9 3 2 7 7}	GraphicString	c:m	
						4.1.14	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	c:m	
						4.1.14.1	identifier	–	OBJECT IDENTIFIER	c:m	
						4.1.14.2	significance	–	BOOLEAN	c:m	

Table F.24/X.282 – Notification support (continued)

Index	Notification type template label	Value of object identifier for notification type	Support		Constraints and values	Status	Constraints and values	Status	Support	Additional information	
			Confirmed	Non-confirmed							
						4.1.14.3	information	–	ANY DEFINED BY identifier	c:m	
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": communicationsAlarm	{2 9 3 2 10 2}	–	c10		5.1	AlarmInfo	–	Information Syntax SEQUENCE	c10	
						5.1.1	probableCause	{2 9 3 2 7 18}	CHOICE	c:m	
						5.1.1.1	globalValue	–	OBJECT IDENTIFIER		
						5.1.1.2	localValue	–	INTEGER	c:m	
						5.1.2	specificProblems	{2 9 3 2 7 27}	SET OF CHOICE	c:m	
						5.1.2.1	OBJECT IDENTIFIER	–	OBJECT IDENTIFIER	c:m	
						5.1.2.2	INTEGER	–	INTEGER	c:m	
						5.1.3	perceivedSeverity	{2 9 3 2 7 17}	ENUMERATED	c:m	
						5.1.4	backedUpStatus	{2 9 3 2 7 11}	BOOLEAN	c:m	
						5.1.5	backUpObject	{2 9 3 2 7 40}	ObjectInstance	c:m	
						5.1.6	trendIndication	{2 9 3 2 7 30}	ENUMERATED	c:m	
						5.1.7	thresholdInfo	{2 9 3 2 7 29}	SEQUENCE	c:m	
						5.1.7.1	triggered Threshold	–	AttributeId	c:m	
						5.1.7.2	observedValue	–	CHOICE	c:m	
						5.1.7.2.1	integer	–	INTEGER	c:m	
						5.1.7.2.2	real	–	REAL	c:m	
						5.1.7.3	thresholdLevel	–	CHOICE	c:m	
						5.1.7.3.1	up	–	SEQUENCE	c:m	
						5.1.7.3.1.1	high	–	CHOICE	c:m	
						5.1.7.3.1.1.1	integer	–	INTEGER	c:m	
						5.1.7.3.1.1.2	real	–	REAL	c:m	
						5.1.7.3.1.2	low	–	CHOICE	c:m	
						5.1.7.3.1.2.1	integer	–	INTEGER	c:m	
						5.1.7.3.1.2.2	real	–	REAL	c:m	
						5.1.7.3.2	down	–	SEQUENCE	c:m	
						5.1.7.3.2.1	high	–	CHOICE	c:m	
						5.1.7.3.2.1.1	integer	–	INTEGER	c:m	

**Table F.24/X.282 – Notification support (continued)**

Index	Notification type template label	Value of object identifier for notification type	Support		Constraints and values	Status	Non-confirmed	Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
			Confirmed												
										5.1.7.3.2.1.2	real	–	REAL	c:m	
										5.1.7.3.2.2	low	–	CHOICE	c:m	
										5.1.7.3.2.2.1	integer	–	INTEGER	c:m	
										5.1.7.3.2.2.2	real	–	REAL	c:m	
										5.1.7.4	armTime	–	GeneralizedTime	c:m	
										5.1.8	notification Identifier	{2 9 3 2 7 16}	INTEGER	c:m	
										5.1.9	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:m	
										5.1.9.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	
										5.1.9.2	sourceObjectInst	–	ObjectInstance	c:m	
										5.1.10	stateChange Definition	{2 9 3 2 7 28}	SET OF SEQUENCE	c:m	
										5.1.10.1	attributeID	–	AttributeId	c:m	
										5.1.10.2	oldAttributeValue	–	ANY DEFINED BY attributeID	c:m	
										5.1.10.3	newAttribute Value	–	ANY DEFINED BY attributeID	c:m	
										5.1.11	monitored Attributes	{2 9 3 2 7 15}	SET OF Attribute	c:m	
										5.1.12	proposedRepair Actions	{2 9 3 2 7 19}	SET OF CHOICE	c:m	
										5.1.12.1	OBJECT IDENTIFIER	–	OBJECT IDENTIFIER	c:m	
										5.1.12.2	INTEGER	–	INTEGER	c:m	
										5.1.13	additionalText	{2 9 3 2 7 7}	GraphicString	c:m	
										5.1.14	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	c:m	
										5.1.14.1	identifier	–	OBJECT IDENTIFIER	c:m	
										5.1.14.2	significance	–	BOOLEAN	c:m	
										5.1.14.3	information	–	ANY DEFINED BY identifier	c:m	

**Table F.24/X.282 – Notification support (concluded)**

#### F.4.5 Actions

The specifier of a manager role implementation that claims to support the actions specified in this Recommendation shall import a copy of Table F.25 and complete it.

**Table F.25/X.282 – Action support**

Index	Action type template label	Value of object identifier for action type	Constraints and values	Status	Support	Additional information	Subindex	Action field name label	Constraints and values	Status	Support	Additional information
1	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": activate	{2 9 3 5 9 0}		c12			1.1	ActionInfo	<b>Information Syntax</b> SET OF SEQUENCE	c12		
							1.1.1	identifier	OBJECT IDENTIFIER	c:m		
							1.1.2	significance	BOOLEAN	c:o		
							1.1.3	information	ANY DEFINED BY identifier	c:m		
							1.2	ActionReply	<b>Reply Syntax</b> SET OF SEQUENCE	c:m		
							1.2.1	identifier	OBJECT IDENTIFIER	c:m		
							1.2.2	significance	BOOLEAN	c:o		
							1.2.3	information	ANY DEFINED BY identifier	c:m		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": deactivate	{2 9 3 5 9 1}		c13			2.1	ActionInfo	<b>Information Syntax</b> SET OF SEQUENCE	c13		
							2.1.1	identifier	OBJECT IDENTIFIER	c:m		
							2.1.2	significance	BOOLEAN	c:o		
							2.1.3	information	ANY DEFINED BY identifier	c:m		
							2.2	ActionReply	<b>Reply Syntax</b> SET OF SEQUENCE	c:m		
							2.2.1	identifier	OBJECT IDENTIFIER	c:m		
							2.2.2	significance	BOOLEAN	c:o		
							2.2.3	information	ANY DEFINED BY identifier	c:m		
c12: if E.3/22a then m else –												
c13: if E.3/16a or E.3/23 then m else –												

#### F.4.6 Parameters

The specifier of a manager role implementation that claims to support the parameters specified in this Recommendation shall import a copy of Table F.26 and complete it.

**Table F.26/X.282 – Parameter support**

Index	Parameter template label	Value of object identifier for parameter	Constraints and values	Status	Support	Additional information
1	derivedGaugeNot Current	{1 2 840 10011 50}	SPECIFIC-ERROR DerivedGauge	c14		
2	fRMR	{2 15 0 5 1}	EVENT-INFO communications Alarm	c15		
c14: if F.3/5a or F.3/5b or F.3/5c then m else – c15: if F.17/5a then m else –						

## ANNEX G<sup>4</sup>

### **MOCS proforma**

#### **G.1 Introduction**

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

##### **G.1.1 Instructions for completing the MOCS proforma to produce a MOCS<sup>5</sup>**

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

##### **G.1.2 Symbols, abbreviations and terms**

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

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

#### **G.2 The Data Link Service Access Point managed object**

##### **G.2.1 Statement of conformance to the managed object class**

**Table G.1/X.282 – dLSAP Managed object class support**

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	dLSAP	{2 15 0 3 13}		

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

**Table G.2/X.282 – dLSAP Actual class support**

Index	Managed object class template for actual class	Value of object identifier for managed object class definition of actual class	Additional information

<sup>4</sup> Copyright release for MOCS proforma

Users of this Recommendation may freely reproduce the MOCS proforma in this annex so that it can be used for its intended purpose, and may further publish the completed MOCS.

<sup>5</sup> Instructions for completing MOCS proforma are specified in ITU-T Rec. X.724 | ISO/IEC 10165-6.

## G.2.2 Packages

The supplier of the implementation shall state whether or not the packages specified by this managed object of this class are supported, in Table G.3.

**Table G.3/X.282 – dLSAP Package support**

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	c1		
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package, has been instantiated"	c2		
3	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": sap1P1		Mandatory	m		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": topPackage		Mandatory	m		
c1: if G.1/1b then – else m c2: if G.3/1a then m else –						

## G.2.3 Attributes

The supplier of the implementation shall state whether or not the attributes specified by all of the packages instantiated in a managed object of this class are supported, in the Support and Additional information columns of Table G.4. The supplier of the implementation shall indicate support for each of the operations for each attribute supported.

**Table G.4/X.282 – dLSAP Attribute support**

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c3		c4		–		–		–		–		
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	c5		m		x		–		–		x		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	c6		m		x		–		–		x		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c7		c8		c9		c9		c9		c9		
5	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": sap1Address	{2 9 3 5 7 8}	INTEGER	c10		m		c10		–		–		c10		
6	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": sapId	{2 9 3 5 7 10}	GraphicString	c5		m		x		–		–		x		
7	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": userEntityNames	{2 9 3 5 7 15}	SET OF ObjectInstance	c10		m		c11		c11		c11		c11		
c3: if G.3/1a then (if H.1/1a then o else x) else – c4: if G.3/1a then m else – c5: if H.1/1a then o else x c6: if H.1/1a then m else – c7: if G.3/2a then (if H.1/1a then o else x) else – c8: if G.3/2a then m else – c9: if G.3/2a then x else – c10: if G.1/1b or H.1/2a then x else – c11: if G.1/1b then x else –																

## G.3 The Data Link Subsystem managed object

### G.3.1 Statement of conformance to the managed object class

**Table G.5/X.282 – datalinkSubsystem Managed object class support**

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	datalinkSubsystem	{2 15 0 3 1}		

If the answer to the actual class question in Table G.5 is no, the supplier of the implementation shall fill in the actual class support of Table G.6.

**Table G.6/X.282 – datalinkSubsystem Actual class support**

Index	Managed object class template for actual class	Value of object identifier for managed object class definition of actual class	Additional information

### G.3.2 Packages

The supplier of the implementation shall state whether or not the packages specified by this managed object of this class are supported, in Table G.7.

**Table G.7/X.282 – datalinkSubsystem Package support**

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	c12		
2	datalinkSubsystem-P		Mandatory	m		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package, has been instantiated"	c13		
4	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": subsystemP1		Mandatory	m		
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": topPackage		Mandatory	m		
c12: if G.5/1b then – else m c13: if G.7/1a then m else –						

### G.3.3 Attributes

The supplier of the implementation shall state whether or not the attributes specified by all of the packages instantiated in a managed object of this class are supported, in the Support and Additional information columns of Table G.8. The supplier of the implementation shall indicate support for each of the operations for each attribute supported.

**Table G.8/X.282 – datalinkSubsystem Attribute support**

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c14		c15		-		-		-		-		
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	x		m		x		-		-		x		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	x		m		x		-		-		x		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c16		c17		c16		c16		c16		c16		
5	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": subsystemId	{2 9 3 5 7 11}	GraphicString	x		m		x		-		-		x		
c14: if G.7/1a then x else - c15: if G.7/1a then m else - c16: if G.7/3a then x else - c17: if G.7/3a then m else -																

## G.4 The EWMA Metric Monitor managed object

### G.4.1 Statement of conformance to the managed object class

**Table G.9/X.282 – eWMAMetricMonitor Managed object class support**

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	eWMAMetricMonitor	{1 2 840 10011 3 2}		

If the answer to the actual class question in Table G.9 is no, the supplier of the implementation shall fill in the actual class support of Table G.10.

**Table G.10/X.282 – eWMAMetricMonitor Actual class support**

Index	Managed object class template for actual class	Value of object identifier for managed object class definition of actual class	Additional information

### G.4.2 Packages

The supplier of the implementation shall state whether or not the packages specified by this managed object of this class are supported, in Table G.11.

**Table G.11/X.282 – eWMAMetricMonitor Package support**

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	c18		
2	configurationEventsReporting-P	{1 2 840 10011 4 1}	"configuration event reporting is supported"	o		
3	counterDifference-P	{1 2 840 10011 4 0}	"counter to gauge conversion is requested"	o		
4	counterOverflow-P	{1 2 840 10011 4 2}	"the counterDifference-P package is present and module arithmetic is required to calculate the new value of the derived gauge on counter overflow"	c19		
5	eWMAMetricMonitor-P		Mandatory	m		
6	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package, has been instantiated"	c20		
7	scanner-P		Mandatory	m		
8	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": topPackage		Mandatory	m		

c18: if G.9/1b then – else m

c19: if G.11/3a then o else –

c20: if G.11/1a or G.11/2a or G.11/3a or G.11/4a then m else –

### G.4.3 Attributes

The supplier of the implementation shall state whether or not the attributes specified by all of the packages instantiated in a managed object of this class are supported, in the Support and Additional information columns of Table G.12. The supplier of the implementation shall indicate support for each of the operations for each attribute supported.

**Table G.12/X.282 – eWMAMetricMonitor Attribute support**

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default	
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": administrativeState	{2 9 3 2 7 31}	ENUMERATED	m		m		m		–		–		c21	
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c22		c23		–		–		–		–	
3	counterModulus	{1 2 840 10011 7 5}	INTEGER	c24		c24		c24		–		–		c21	
4	counterTMinusGP	{1 2 840 10011 7 4}	INTEGER	c25		c25		c25		–		–		c21	
5	derivedGauge	{1 2 840 10011 7 6}	CHOICE derivedGaugeNotCurrent	m		m		m		–		–		c21	
6	estimateOfMean	{1 2 840 10011 7 7}	CHOICE	m		m		m		–		–		c21	
7	granularityPeriod	{1 2 840 10011 7 8}	CHOICE	m		m		m		–		–		c21	
8	movingTimePeriod	{1 2 840 10011 7 12}	CHOICE	m		m		m		–		–		c21	
9	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o		m		x		–		–		x	
10	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	m		m		x		–		–		x	
11	observedAttributeId	{1 2 840 10011 7 9}	AttributeId	m		m		m		–		–		c21	
12	observedManagedObjectInstance	{1 2 840 10011 7 10}	ObjectInstance	m		m		m		–		–		c21	
13	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	x		m		x		–		–		x	
14	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c26		c27		c28		c28		c28		c28	
15	scannerId	{1 2 840 10011 7 3}	GraphicString	o		m		x		–		–		x	
16	severityIndicatingThreshold	{1 2 840 10011 7 11}	SET OF SEQUENCE	m		m		m		m		m		c21	

c21: if G.9/1b then x else –  
c22: if G.11/1a then o else –  
c23: if G.11/1a then m else –  
c24: if G.11/4a then m else –  
c25: if G.11/3a then m else –  
c26: if G.11/6a then o else –  
c27: if G.11/6a then m else –  
c28: if G.11/6a then x else –

#### G.4.4 Notifications

**Table G.13/X.282 – eWMAMetricMonitor Notification support**

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
					Confirmed	Non-confirmed									
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": attributeValueChange	{2 9 3 2 10 1}	–	c29				1.1	AttributeValueChangeInfo	–	Information Syntax SEQUENCE	c29			
								1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	c:o			
								1.1.2	attributeIdentifierList	{2 9 3 2 7 8}	SET OF AttributeId	c:o			
								1.1.3	attributeValueChangeDefinition	{2 9 3 2 7 10}	SET OF SEQUENCE	c:m			
								1.1.3.1	attributeID	–	AttributeId	c:m			
								1.1.3.2	oldAttributeValue	–	ANY DEFINED BY attributeID	c:o			
								1.1.3.3	newAttributeValue	–	ANY DEFINED BY attributeID	c:m			
								1.1.4	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	c:o			
								1.1.5	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:o			
								1.1.5.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m			
								1.1.5.2	sourceObjectInst	–	ObjectInstance	c:o			
								1.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	c:o			
								1.1.7	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o			
								1.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m			
								1.1.7.2	significance	–	BOOLEAN	c:o			
								1.1.7.3	information	–	ANY DEFINED BY identifier	c:m			

Table G.13/X.282 – eWMAMetricMonitor Notification support (*continued*)

Index	Notification type template label	Value of object identifier for notification type	Support		Constraints and values	Status	Con-firmed	Non-con-firmed	Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}	–	c29						2.1	ObjectInfo	–	<b>Information Syntax SEQUENCE</b>	c29		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}	–	c29						3.1	ObjectInfo	–	<b>Information Syntax SEQUENCE</b>	c29		

Table G.13/X.282 – eWMAMetricMonitor Notification support (continued)

Index	Notification type template label	Value of object identifier for notification type	Support		Constraints and values	Status	Con-	Non- con-	Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
			firmed	firmed												
									3.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	c:o			
									3.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o			
									3.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m			
									3.1.6.2	significance	–	BOOLEAN	c:o			
									3.1.6.3	information	–	ANY DEFINED BY identifier	c:m			
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": qualityof ServiceAlarm	{2 9 3 2 10 11}	–	m					4.1	AlarmInfo	–	Information Syntax SEQUENCE	m			
									4.1.1	probableCause	{2 9 3 2 7 18}	CHOICE	m			
									4.1.1.1	globalValue	–	OBJECT IDENTIFIER	o.1			
									4.1.1.2	localValue	–	INTEGER	o.1			
									4.1.2	specificProblems	{2 9 3 2 7 27}	SET OF CHOICE	o			
									4.1.2.1	OBJECT IDENTIFIER	–	OBJECT IDENTIFIER	c:o.2			
									4.1.2.2	INTEGER	–	INTEGER	c:o.2			
									4.1.3	perceived Severity	{2 9 3 2 7 17}	ENUMERATED	m			
									4.1.4	backedUpStatus	{2 9 3 2 7 11}	BOOLEAN	o			
									4.1.5	backUpObject	{2 9 3 2 7 40}	ObjectInstance	o			
									4.1.6	trendIndication	{2 9 3 2 7 30}	ENUMERATED	o			
									4.1.7	thresholdInfo	{2 9 3 2 7 29}	SEQUENCE	o			
									4.1.7.1	triggered Threshold	–	AttributeId	c:m			
									4.1.7.2	observedValue	–	CHOICE	c:m			
									4.1.7.2.1	integer	–	INTEGER	c:o.3			
									4.1.7.2.2	real	–	REAL	c:o.3			

Table G.13/X.282 – eWMAMetricMonitor Notification support (*continued*)

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
					Con-	Non-con-								
								4.1.7.3	thresholdLevel	–	CHOICE	c:o		
								4.1.7.3.1	up	–	SEQUENCE	c:o.4		
								4.1.7.3.1.1.1	integer	–	INTEGER	c:o.5		
								4.1.7.3.1.1.2	real	–	REAL	c:o.5		
								4.1.7.3.1.2	low	–	CHOICE	c:o		
								4.1.7.3.1.2.1	integer	–	INTEGER	c:o.6		
								4.1.7.3.1.2.2	real	–	REAL	c:o.6		
								4.1.7.3.2	down	–	SEQUENCE	c:o.4		
								4.1.7.3.2.1	high	–	CHOICE	c:m		
								4.1.7.3.2.1.1	integer	–	INTEGER	c:o.7		
								4.1.7.3.2.1.2	real	–	REAL	c:o.7		
								4.1.7.3.2.2	low	–	CHOICE	c:m		
								4.1.7.3.2.2.1	integer	–	INTEGER	c:o.8		
								4.1.7.3.2.2.2	real	–	REAL	c:o.8		
								4.1.7.4	armTime	–	GeneralizedTime	c:o		
								4.1.8	notification Identifier	{2 9 3 2 7 16}	INTEGER	o		
								4.1.9	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o		
								4.1.9.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m		
								4.1.9.2	sourceObjectInst	–	ObjectInstance	c:o		
								4.1.10	stateChange Definition	{2 9 3 2 7 28}	SET OF SEQUENCE	o		
								4.1.10.1	attributeID	–	AttributeId	c:m		
								4.1.10.2	oldAttribute Value	–	ANY DEFINED BY attributeID	c:o		
								4.1.10.3	newAttribute Value	–	ANY DEFINED BY attributeID	c:m		
								4.1.11	monitored Attributes	{2 9 3 2 7 15}	SET OF Attribute	o		
								4.1.12	proposedRepairA ctions	{2 9 3 2 7 19}	SET OF CHOICE	o		

Table G.13/X.282 – eWMAMetricMonitor Notification support (continued)

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
					Con-	Non-con-								
							4.1.12.1	OBJECT IDENTIFIER	–	OBJECT IDENTIFIER	c:o.9			
							4.1.12.2	INTEGER	–	INTEGER	c:o.9			
							4.1.13	additionalText	{2 9 3 2 7 7}	GraphicString	o			
							4.1.14	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o			
							4.1.14.1	identifier	–	OBJECT IDENTIFIER	c:m			
							4.1.14.2	significance	–	BOOLEAN	c:o			
							4.1.14.3	information	–	ANY DEFINED BY identifier	c:m			
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": stateChange	{2 9 3 2 10 14}	–	c29			5.1	StateChangeInfo	–	Information Syntax SEQUENCE	c29			
							5.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	c:o			
							5.1.2	attribute IdentifierList	{2 9 3 2 7 8}	SET OF AttributeId	c:o			
							5.1.3	stateChange Definition	{2 9 3 2 7 28}	SET OF SEQUENCE	c:m			
							5.1.3.1	attributeID	–	AttributeId	c:m			
							5.1.3.2	oldAttribute Value	–	ANY DEFINED BY attributeID	c:o			
							5.1.3.3	newAttribute Value	–	ANY DEFINED BY attributeID	c:m			
							5.1.4	notification Identifier	{2 9 3 2 7 16}	INTEGER	c:o			
							5.1.5	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:o			
							5.1.5.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m			
							5.1.5.2	sourceObjectInst	–	ObjectInstance	c:o			
							5.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	c:o			

**Table G.13/X.282 – eWMAMetricMonitor Notification support (concluded)**

Index	Notification type template label	Value of object identifier for notification type	Support		Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
			Con-	Non-con-							
					5.1.7	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o		
						identifier	–	OBJECT IDENTIFIER	c:m		
						significance	–	BOOLEAN	c:o		
						information	–	ANY DEFINED BY identifier	c:m		
c29: if G.11/2a then m else –											

#### G.4.5 Parameter

**Table G.14/X.282 – eWMAMetricMonitor Parameter support**

Index	Parameter template label	Value of object identifier for parameter	Constraints and values	Status	Support	Additional information
1	derivedGaugeNotCurrent	{1 2 840 10011 5 0}	SPECIFIC-ERROR DerivedGauge	m		

### G.5 The LAPB Data Link Entity managed object

#### G.5.1 Statement of conformance to the managed object class

**Table G.15/X.282 – IAPBDLE Managed object class support**

Index	Parameter template label	Value of object identifier for parameter	Constraints and values	Status	Support	Additional information
1	IAPBDLE	{2 15 0 3 3}				

If the answer to the actual class question in Table G.15 is no, the supplier of the implementation shall fill in the actual class support of Table G.16.

**Table G.16/X.282 – IAPBDLE Actual class support**

Index	Managed object class template for actual class	Value of object identifier for managed object class definition of actual class	Additional information

#### G.5.2 Packages

The supplier of the implementation shall state whether or not the packages specified by this managed object of this class are supported, in Table G.17.

**Table G.17/X.282 – IAPBDLE Package support**

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	c30		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communications EntityP1		Mandatory	m		
3	datalinkEntity-P		Mandatory	m		
4	mLP-P	{2 15 0 4 1}	"IAPBDLE supports mlp procedures"	o		
5	mT2-P	{2 15 0 4 5}	"IAPBDLE supports mlp procedures and mT2 timer."	o		
6	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package, has been instantiated"	c31		
7	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": topPackage		Mandatory	m		
c30: if G.15/1b then – else m c31: if G.17/1a or G.17/4a or G.17/5a then m else –						

### G.5.3 Attributes

The supplier of the implementation shall state whether or not the attributes specified by all of the packages instantiated in a managed object of this class are supported, in the Support and Additional information columns of Table G.18. The supplier of the implementation shall indicate support for each of the operations for each attribute supported.

Table G.18/X.282 – IAPBDLE Attribute support

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default	
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c32		c33		–		–		–		–	
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communicationsEntityId	{2 9 3 5 7 0}	GraphicString	c34		m		x		–		–		x	
3	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": localSapNames	{2 9 3 5 7 6}	SET OF ObjectInstance	c35		m		c36		c36		c36		c36	
4	mT1Timer	{2 15 0 7 12}	SEQUENCE	c37		c38		c38		–		–		c38	
5	mT2Timer	{2 15 0 7 13}	SEQUENCE	c39		c40		c40		–		–		c40	
6	mT3Timer	{2 15 0 7 14}	SEQUENCE	c37		c38		c38		–		–		c38	
7	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	c34		m		x		–		–		x	
8	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	c41		m		x		–		–		x	
9	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	x		m		x		–		–		x	
10	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c42		c43		c44		c44		c44		c44	
11	providerEntityNames	{2 15 0 7 11}	SET OF ObjectInstance	c41		m		m		–		–		m	

c32: if G.17/1a then (if H.1/3a then o else x) else –  
c33: if G.17/1a then m else –  
c34: if H.1/3a then o else x  
c35: if G.15/1b or H.1/4a then x else –  
c36: if G.15/1b then x else –  
c37: if G.17/4a then (if H.1/3a then m else x) else –  
c38: if G.17/4a then m else –  
c39: if G.17/5a then (if H.1/3a then m else then x) else –  
c40: if G.17/5a then m else –  
c41: if H.1/3a then m else x  
c42: if G.17/6a then (if H.1/3a then o else x) else –  
c43: if G.17/6a then m else –  
c44: if G.17/6a then x else –

#### G.5.4 Attribute group

**Table G.19/X.282 – LAPBDLE Attribute group support**

Index	Attribute group template label	Value of object identifier for attribute group	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": state	{2 9 3 2 8 1}	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	m		c36		
2	timers	{2 15 0 8 1}	mT1Timer mT2Timer mT3Timer	c45		c45		
c45: if G.17/4a or G.17/5a then m else –								

### G.5.5 Notifications

**Table G.20/X.282 – IAPBDLE Notification support**

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Additional information	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
					Con-firmed	Non-con-firmed								
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}	m				1.1	ObjectInfo		<b>Information Syntax SEQUENCE</b>	m			
									1.1.1	source Indicator	{2 9 3 2 7 26}	ENUMERATED	o	
									1.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	o	
									1.1.3	notification Identifier	{2 9 3 2 7 16}	INTEGER	o	
									1.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	
									1.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	
									1.1.4.2	sourceObject Inst	–	ObjectInstance	c:o	
									1.1.5	additional Text	{2 9 3 2 7 7}	GraphicString	o	
									1.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o	
									1.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	
									1.1.6.2	significance	–	BOOLEAN	c:o	
									1.1.6.3	information	–	ANY DEFINED BY identifier	c:m	
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}	m				2.1	ObjectInfo		<b>Information Syntax SEQUENCE</b>	m			
									2.1.1	source Indicator	{2 9 3 2 7 26}	ENUMERATED	o	
									2.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	o	

Table G.20/X.282 – LAPBDLE Notification support (*continued*)

Index	Notification type template label	Value of object identifier for notification type	Support		Constraints and values	Status	Con-firmed	Non-con-firmed	Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": stateChange	{2 9 3 2 10 14}	m														
											2.1.3	notification Identifier	{2 9 3 2 7 16}	INTEGER	o		
											2.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o		
											2.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m		
											2.1.4.2	sourceObject Inst	–	ObjectInstance	c:o		
											2.1.5	additional Text	{2 9 3 2 7 7}	GraphicString	o		
											2.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
											2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m		
											2.1.6.2	significance	–	BOOLEAN	c:o		
											2.1.6.3	information	–	ANY DEFINED BY identifier	c:m		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": stateChange	{2 9 3 2 10 14}	m								3.1	StateChange Info		Information Syntax SEQUENCE	m		
											3.1.1	source Indicator	{2 9 3 2 7 26}	ENUMERATED	o		
											3.1.2	attribute IdentifierList	{2 9 3 2 7 8}	SET OF AttributeId	o		
											3.1.3	stateChange Definition	{2 9 3 2 7 28}	SET OF SEQUENCE	m		
											3.1.3.1	attributeID	–	AttributeId	m		
											3.1.3.2	oldAttribute Value	–	ANY DEFINED BY attributeID	o		
											3.1.3.3	newAttribute Value	–	ANY DEFINED BY attributeID	m		
											3.1.4	notification Identifier	{2 9 3 2 7 16}	INTEGER	o		

Table G.20/X.282 – LAPBDLE Notification support (*concluded*)

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
					Con-	firmed	Non-con-	firmed							
								3.1.5	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o			
								3.1.5.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m			
								3.1.5.2	sourceObject Inst	–	ObjectInstance	c:o			
								3.1.6	additional Text	{2 9 3 2 7 7}	GraphicString	o			
								3.1.7	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o			
								3.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m			
								3.1.7.2	significance	–	BOOLEAN	c:o			
								3.1.7.3	information	–	ANY DEFINED BY identifier	c:m			

## G.6 The LLC Connectionless Protocol Machine managed object

### G.6.1 Statement of conformance to the managed object class

The supplier of the implementation shall support at least one managed object class derived from ILCCCLPM managed object class. The supplier of the implementation shall fill in the support managed object class of Table G.21.

**Table G.21/X.282 – Subclass of ILCCCLPM support**

Index	Supported managed object class template	Value of object identifier for managed object class definition	Additional information

## G.7 The LLC Connection-mode Protocol Machine managed object

### G.7.1 Statement of conformance to the managed object class

The supplier of the implementation shall support at least one managed object class derived from ILCCOPM managed object class. The supplier of the implementation shall fill in the support managed object class of Table G.22.

**Table G.22/X.282 – Subclass of ILCCOPM support**

Index	Supported managed object class template	Value of object identifier for managed object class definition	Additional information

## G.8 The LLC Data Link Entity managed object

### G.8.1 Statement of conformance to the managed object class

**Table G.23/X.282 – ILCDLE Managed object class support**

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	ILCDLE	{2 15 0 3 9}		

If the answer to the actual class question in Table G.23 is no, the supplier of the implementation shall fill in the actual class support of Table G.24.

**Table G.24/X.282 – ILCDLE Actual class support**

Index	Managed object class template for actual class	Value of object identifier for managed object class definition of actual class	Additional information

## G.8.2 Packages

The supplier of the implementation shall state whether or not the packages specified by this managed object of this class are supported, in Table G.25.

**Table G.25/X.282 – ILCDLE Package support**

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	c46		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communications EntityP1		Mandatory	m		
3	datalinkEntity-P		Mandatory	m		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c47		
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": topPackage		Mandatory	m		
c46: if G.23/1b then – else m c47: if G.25/1a then m else –						

## G.8.3 Attributes

The supplier of the implementation shall state whether or not the attributes specified by all of the packages instantiated in a managed object of this class are supported, in the Support and Additional information columns of Table G.26. The supplier of the implementation shall indicate support for each of the operations for each attribute supported.

**Table G.26/X.282 – ILCDLE Attribute support**

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c48		c49		–		–		–		–		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communicationsEntityId	{2 9 3 5 7 0}	GraphicString	c50		m		x		–		–		x		
3	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": localSapNames	{2 9 3 5 7 6}	SET OF ObjectInstance	c51		m		c52		c52		c52		c52		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	c50		m		x		–		–		x		
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	c53		m		x		–		–		x		
6	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	x		m		x		–		–		x		
7	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c54		c55		c56		c56		c56		c56		
8	providerEntityNames	{2 15 0 7 11}	SET OF ObjectInstance	c53		m		m		c52		c52		m		

c48: if G.25/1a then (if H.1/3a then o else x) else –  
c49: if G.25/1a then m else –  
c50: if H.1/3a then o else x  
c51: if G.23/1b or H.1/4a then x else –  
c52: if G.23/1b then x else –  
c53: if H.1/3a then m else x  
c54: if G.25/4a then (if H.1/3a then o else x) else –  
c55: if G.25/4a then m else –  
c56: if G.25/4a then x else –

#### G.8.4 Attribute group

**Table G.27/X.282 – ILCDLE Attribute group support**

Index	Attribute group template label	Value of object identifier for attribute group	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": state	{2 9 3 2 8 1}	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	m		c52		

### G.8.5 Notifications

**Table G.28/X.282 – ILCDLE Notification support**

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
					Con-firmed	Non-con-firmed									
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}	m				1.1	ObjectInfo		Information Syntax SEQUENCE	m				
									1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o		
									1.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	o		
									1.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o		
									1.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o		
									1.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m		
									1.1.4.2	sourceObjectInst	–	ObjectInstance	c:o		
									1.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o		
									1.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
									1.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m		
									1.1.6.2	significance	–	BOOLEAN	c:o		
									1.1.6.3	information	–	ANY DEFINED BY identifier	c:m		

Table G.28/X.282 – ILCDLE Notification support (*continued*)

Index	Notification type template label	Value of object identifier for notification type	Support		Status	Con-firmed	Non-con-firmed	Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
			Con-	firmed												
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}		m					2.1	ObjectInfo		Information Syntax SEQUENCE	m			
									2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o			
									2.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	o			
									2.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o			
									2.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o			
									2.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m			
									2.1.4.2	sourceObjectInst	–	ObjectInstance	c:o			
									2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o			
									2.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o			
									2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m			
									2.1.6.2	significance	–	BOOLEAN	c:o			
									2.1.6.3	information	–	ANY DEFINED BY identifier	c:m			

Table G.28/X.282 – ILCDLE Notification support (*concluded*)

Index	Notification type template label	Value of object identifier for notification type	Support		Constraints and values	Status	Con-firmed	Non-con-firmed	Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": stateChange	{2 9 3 2 10 14}	m						3.1	StateChangeInfo		Information Syntax SEQUENCE	m			

## G.9 The MAC managed object

### G.9.1 Statement of conformance to the managed object class

The supplier of the implementation shall support at least one managed object class derived from mAC managed object class. The supplier of the implementation shall fill in the support managed object class of Table G.29.

**Table G.29/X.282 – Subclass of mAC support**

Index	Supported managed object class template	Value of object identifier for managed object class definition	Additional information

## G.10 The MAC Data Link Entity managed object

### G.10.1 Statement of conformance to the managed object class

**Table G.30/X.282 – mACDLE Managed object class support**

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	mACDLE	{2 15 0 3 7}		

If the answer to the actual class question in Table G.30 is no, the supplier of the implementation shall fill in the actual class support of Table G.31.

**Table G.31/X.282 – mACDLE Actual class support**

Index	Managed object class template for actual class	Value of object identifier for managed object class definition of actual class	Additional information

## G.10.2 Packages

The supplier of the implementation shall state whether or not the packages specified by this managed object of this class are supported, in Table G.32.

**Table G.32/X.282 – mACDLE Package support**

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	c57		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communications EntityP1		Mandatory	m		
3	datalinkEntity-P		Mandatory	m		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c58		
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": topPackage		Mandatory	m		
c57: if G.30/1b then – else m c58: if G.32/1a then m else –						

## G.10.3 Attributes

The supplier of the implementation shall state whether or not the attributes specified by all of the packages instantiated in a managed object of this class are supported, in the Support and Additional information columns of Table G.33. The supplier of the implementation shall indicate support for each of the operations for each attribute supported.

**Table G.33/X.282 – mACDLE Attribute support**

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c59		c60		—		—		—		—		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communicationsEntityId	{2 9 3 5 7 0}	GraphicString	c61		m		x		—		—		x		
3	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": localSapNames	{2 9 3 5 7 6}	SET OF ObjectInstance	c62		m		c63		c63		c63		c63		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	c61		m		x		—		—		x		
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	c64		m		x		—		—		x		
6	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	x		m		x		—		—		x		
7	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c65		c66		c67		c67		c67		c67		
8	providerEntityNames	{2 15 0 7 11}	SET OF ObjectInstance	c64		m		m		c63		c63		m		

#### G.10.4 Attribute group

**Table G.34/X.282 – mACDLE Attribute group support**

Index	Attribute group template label	Value of object identifier for attribute group	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": state	{2 9 3 2 8 1}	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	m		c63		

## G.10.5 Notifications

**Table G.35/X.282 – mACDLE Notification support**

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
					Confirmed	Non-confirmed									
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}	m				1.1	ObjectInfo		<b>Information Syntax SEQUENCE</b>	m				
									1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o		
									1.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	o		
									1.1.3	notification Identifier	{2 9 3 2 7 16}	INTEGER	o		
									1.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o		
									1.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m		
									1.1.4.2	sourceObjectInst	–	ObjectInstance	c:o		
									1.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o		
									1.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
									1.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m		
									1.1.6.2	significance	–	BOOLEAN	c:o		
									1.1.6.3	information	–	ANY DEFINED BY identifier	c:m		
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}	m				2.1	ObjectInfo		<b>Information Syntax SEQUENCE</b>	m				
									2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o		
									2.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	o		
									2.1.3	notification Identifier	{2 9 3 2 7 16}	INTEGER	o		

Table G.35/X.282 – mACDLE Notification support (*continued*)

Index	Notification type template label	Value of object identifier for notification type	Support		Constraints and values	Status	Con-firmed	Non-con-firmed	Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": stateChange	{2 9 3 2 10 14}	m														
											2.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o		
											2.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m		
											2.1.4.2	sourceObjectInst	–	ObjectInstance	c:o		
											2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o		
											2.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
											2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m		
											2.1.6.2	significance	–	BOOLEAN	c:o		
											2.1.6.3	information	–	ANY DEFINED BY identifier	c:m		
											3.1	StateChangeInfo		Information Syntax SEQUENCE	m		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": stateChange	{2 9 3 2 10 14}	m								3.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o		
											3.1.2	attributeIdentifier List	{2 9 3 2 7 8}	SET OF AttributeId	o		
											3.1.3	stateChange Definition	{2 9 3 2 7 28}	SET OF SEQUENCE	m		
											3.1.3.1	attributeID	–	AttributeId	m		
											3.1.3.2	oldAttributeVal ue	–	ANY DEFINED BY attributeID	o		
											3.1.3.3	newAttributeVal ue	–	ANY DEFINED BY attributeID	m		
											3.1.4	notification Identifier	{2 9 3 2 7 16}	INTEGER	o		
											3.1.5	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o		

**Table G.35/X.282 – mACDLE Notification support (concluded)**

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
					Con-firmed	Non-con-firmed								
							3.1.5.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m			
								3.1.5.2	sourceObjectInst	—	ObjectInstance	c:o		
								3.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	o		
								3.1.7	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
								3.1.7.1	identifier	—	OBJECT IDENTIFIER	c:m		
								3.1.7.2	significance	—	BOOLEAN	c:o		
								3.1.7.3	information	—	ANY DEFINED BY identifier	c:m		

## G.11 The Resource TypeId managed object

### G.11.1 Statement of conformance to the managed object class

**Table G.36/X.282 – resourceTypeId Managed object class support**

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	resourceTypeId	{1 2 840 10011 3 0}		

If the answer to the actual class question in Table G.36 is no, the supplier of the implementation shall fill in the actual class support of Table G.37.

**Table G.37/X.282 – resourceTypeId Actual class support**

Index	Managed object class template for actual class	Value of object identifier for managed object class definition of actual class	Additional information

### G.11.2 Packages

The supplier of the implementation shall state whether or not the packages specified by this managed object of this class are supported, in Table G.38.

**Table G.38/X.282 – resourceTypeId Package support**

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	c68		
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c69		
3	resourceTypeId-P		Mandatory	m		
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": topPackage		Mandatory	m		
c68: if G.36/1b then – else m c69: if G.38/1a then m else –						

### G.11.3 Attributes

The supplier of the implementation shall state whether or not the attributes specified by all of the packages instantiated in a managed object of this class are supported, in the Support and Additional information columns of Table G.39. The supplier of the implementation shall indicate support for each of the operations for each attribute supported.

Table G.39/X.282 – resourceTypeId Attribute support

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default	
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c70		c71		–		–		–		–	
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	x		m		x		–		–		x	
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	x		m		x		–		–		x	
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c72		c73		c72		c72		c72		c72	
5	resourceInfo	{1 2 840 10011 7 2}	SEQUENCE	x		m		c74		–		–		c74	
6	resourceTypeIdName	{1 2 840 10011 7 1}	GraphicString	x		m		x		–		–		x	

c70: if G.38/1a then x else –  
c71: if G.38/1a then m else –  
c72: if G.38/2a then x else –  
c73: if G.38/2a then m else –  
c74: if G.36/1a then x else –

## G.12 The LAPB Single Link Protocol Connection managed object

### G.12.1 Statement of conformance to the managed object class

**Table G.40/X.282 – sLPConnection Managed object class support**

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	sLPConnection	{2 15 0 3 5}		

If the answer to the actual class question in Table G.40 is no, the supplier of the implementation shall fill in the actual class support of Table G.41.

**Table G.41/X.282 – sLPConnection Actual class support**

Index	Managed object class template for actual class	Value of object identifier for managed object class definition of actual class	Additional information

### G.12.2 Packages

The supplier of the implementation shall state whether or not the packages specified by this managed object of this class are supported, in Table G.42.

**Table G.42/X.282 – sLPCConnection Package support**

Index	Package template label	Value of object identifier for Package	Constraints and values	Status	Support	Additional information
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	c75		
2	commonSLP Connection-P		Mandatory	m		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c76		
4	sLPCConnection-P		Mandatory	m		
5	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": singlePeerConnectionP1		Mandatory	m		
6	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": singlePeerConnectionP2	{2 9 3 5 4 2}	"The names of the connections supported by this connection can be provided"	o		
7	t3-P	{2 15 0 4 2}	"Optional Timer T3 of ISO 7776 is supported"	o		
8	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": topPackage		Mandatory	m		

c75: if G.40/1b then – else m  
c76: if G.42/1a or G.42/6a or G.42/7a then m else –

### G.12.3 Attributes

The supplier of the implementation shall state whether or not the attributes specified by all of the packages instantiated in a managed object of this class are supported, in the Support and Additional information columns of Table G.43. The supplier of the implementation shall indicate support for each of the operations for each attribute supported.

Table G.43/X.282 – sLPConnection Attribute support

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c77		c78		–		–		–		–		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": connectionId	{2 9 3 5 7 1}	GraphicString	x		m		x		–		–		x		
3	fCSErrorsReceived	{2 15 0 7 15}	INTEGER	x		m		c79		–		–		c79		
4	fRMRsReceived	{2 15 0 7 1}	INTEGER	x		m		c79		–		–		c79		
5	fRMRsSent	{2 15 0 7 2}	INTEGER	x		m		c79		–		–		c79		
6	iFrameDataOctetsReceived	{2 15 0 7 16}	INTEGER	x		m		c79		–		–		c79		
7	iFrameDataOctetsSent	{2 15 0 7 17}	INTEGER	x		m		c79		–		–		c79		
8	iFramesReceived	{2 15 0 7 3}	INTEGER	x		m		c79		–		–		c79		
9	iFramesSent	{2 15 0 7 4}	INTEGER	x		m		c79		–		–		c79		
10	interfaceType	{2 15 0 7 18}	ENUMERATED	x		m		m		–		–		m		
11	k	{2 15 0 7 19}	CHOICE	x		m		m		–		–		m		
12	n1	{2 15 0 7 20}	INTEGER	x		m		m		–		–		m		
13	n2	{2 15 0 7 21}	INTEGER	x		m		m		–		–		m		
14	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	x		m		x		–		–		x		
15	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	x		m		x		–		–		x		
16	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c80		c81		c80		c80		c80		c80		
17	pollsReceived	{2 15 0 7 22}	INTEGER	x		m		c79		–		–		c79		
18	rEJsReceived	{2 15 0 7 5}	INTEGER	x		m		c79		–		–		c79		
19	rEJsSent	{2 15 0 7 6}	INTEGER	x		m		c79		–		–		c79		
20	rNRsReceived	{2 15 0 7 7}	INTEGER	x		m		c79		–		–		c79		
21	rNRsSent	{2 15 0 7 8}	INTEGER	x		m		c79		–		–		c79		
22	sABMsReceived	{2 15 0 7 9}	INTEGER	x		m		c79		–		–		c79		
23	sABMsSent	{2 15 0 7 10}	INTEGER	x		m		c79		–		–		c79		
24	sLPProtocolState	{2 15 0 7 23}	ENUMERATED	x		m		c79		–		–		c79		

Table G.43/X.282 – sLPConnection Attribute support (*concluded*)

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
25	sequenceModulus	{2 15 0 7 24}	INTEGER	x		m		m		–		–		m		
26	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": supportedConnectionNames	{2 9 3 5 7 12}	SET OF ObjectInstance	c82		c83		c84		c84		c84		c84		
27	t1Timer	{2 15 0 7 25}	SEQUENCE	x		m		m		–		–		m		
28	t2Timer	{2 15 0 7 26}	SEQUENCE	x		m		m		–		–		m		
29	t3Timer	{2 15 0 7 27}	SEQUENCE	c85		c86		c86		–		–		c86		
30	t4Timer	{2 15 0 7 28}	SEQUENCE	x		m		m		–		–		m		
31	timesT1Expired	{2 15 0 7 29}	INTEGER	x		m		c79		–		–		c79		
32	timesT3Expired	{2 15 0 7 30}	INTEGER	c85		c86		c87		–		–		c87		
33	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": underlyingConnectionNames	{2 9 3 5 7 14}	SET OF ObjectInstance	x		m		c79		c79		c79		c79		
c77: if G.42/1a then x else – c78: if G.42/1a then m else – c79: if G.40/1b then x else – c80: if G.42/3a then x else – c81: if G.42/3a then m else – c82: if G.42/6a then x else – c83: if G.42/6a then m else – c84: if G.40/1b and G.42/6a then x else – c85: if G.42/7a then x else – c86: if G.42/7a then m else – c87: if G.40/1b and G.42/7a then x else –																

#### G.12.4 Attribute group

**Table G.44/X.282 – sLPConnection Attribute group support**

Index	Attribute group template label	Value of object identifier for attribute group	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": counters	{2 9 3 5 8 0}	fCSErrorsReceived fRMRsReceived fRMRsSent iFrameDataOctets Received iFrameDataOctetsSent iFramesReceived iFramesSent pollsReceived rEJsReceived rEJsSent rNRsReceived rNRsSent sABMsReceived sABMsSent timesT1Expired timerT3Expired (condition)	m		c79		
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": state	{2 9 3 2 8 1}	sLPProtocolState	m		c79		
3	timers	{2 15 0 8 1}	t1Timer t2Timer t4Timer t3Timer (condition)	m		m		

### G.12.5 Actions

**Table G.45/X.282 – sLPConnection Action support**

Index	Action type template label	Value of object identifier for action type	Constraints and values	Status	Support	Additional information	Subindex	Action field name label	Constraints and values	Status	Support	Additional information
1	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": deactivate	{2 9 3 5 9 1}		m			1.1	ActionInfo	<b>Information Syntax</b> SET OF SEQUENCE	m		
							1.1.1	identifier	OBJECT IDENTIFIER	m		
							1.1.2	significance	BOOLEAN	o		
							1.1.3	information	ANY DEFINED BY identifier	m		
							1.2	ActionReply	<b>Reply Syntax</b> SET OF SEQUENCE	m		
							1.2.1	identifier	OBJECT IDENTIFIER	m		
							1.2.2	significance	BOOLEAN	o		
							1.2.3	information	ANY DEFINED BY identifier	m		

## G.12.6 Notifications

**Table G.46/X.282 – sLPConnection Notification support**

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
					Con-	firmed	Non-con-	firmed							
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": communicationsAlarm	{2 9 3 2 10 2}	m	FrMr	1.1	AlarmInfo			Information Syntax SEQUENCE		m				
					1.1.1	probableCause	{2 9 3 2 7 18}	CHOICE		CHOICE	m				
					1.1.1.1	globalValue	–	OBJECT IDENTIFIER		OBJECT IDENTIFIER	o.1				
					1.1.1.2	localValue	–	INTEGER		INTEGER	o.1				
					1.1.2	specificProblems	{2 9 3 2 7 27}	SET OF CHOICE		SET OF CHOICE	o				
					1.1.2.1	OBJECT IDENTIFIER	–	OBJECT IDENTIFIER		OBJECT IDENTIFIER	c:o.2				
					1.1.2.2	INTEGER	–	INTEGER		INTEGER	c:o.2				
					1.1.3	perceivedSeverity	{2 9 3 2 7 17}	ENUMERATED		ENUMERATED	m				
					1.1.4	backedUpStatus	{2 9 3 2 7 11}	BOOLEAN		BOOLEAN	o				
					1.1.5	backUpObject	{2 9 3 2 7 40}	ObjectInstance		ObjectInstance	o				
					1.1.6	trendIndication	{2 9 3 2 7 30}	ENUMERATED		ENUMERATED	o				
					1.1.7	thresholdInfo	{2 9 3 2 7 29}	SEQUENCE		SEQUENCE	o				
					1.1.7.1	triggeredThreshold	–	AttributeId		AttributeId	c:m				
					1.1.7.2	observedValue	–	CHOICE		CHOICE	c:m				
					1.1.7.2.1	integer	–	INTEGER		INTEGER	c:o.3				
					1.1.7.2.2	real	–	REAL		REAL	c:o.3				

**Table G.46/X.282 – sLPConnection Notification support (continued)**

Index	Notification type template label	Value of object identifier for notification type	Support		Status	Constraints and values	Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
			Con-	firmed										
									1.1.7.3	thresholdLevel	–	CHOICE	c:o	
									1.1.7.3.1	up	–	SEQUENCE	c:o.4	
									1.1.7.3.1.1	high	–	CHOICE	c:m	
									1.1.7.3.1.1.1	integer	–	INTEGER	c:o.5	
									1.1.7.3.1.1.2	real	–	REAL	c:o.5	
									1.1.7.3.1.2	low	–	CHOICE	c:o	
									1.1.7.3.1.2.1	integer	–	INTEGER	c:o.6	
									1.1.7.3.1.2.2	real	–	REAL	c:o.6	
									1.1.7.3.2	down	–	SEQUENCE	c:o.4	
									1.1.7.3.2.1	high	–	CHOICE	c:m	
									1.1.7.3.2.1.1	integer	–	INTEGER	c:o.7	
									1.1.7.3.2.1.2	real	–	REAL	c:o.7	
									1.1.7.3.2.2	low	–	CHOICE	c:m	
									1.1.7.3.2.2.1	integer	–	INTEGER	c:o.8	
									1.1.7.3.2.2.2	real	–	REAL	c:o.8	
									1.1.7.4	armTime	–	GeneralizedTime	c:o	
									1.1.8	notification Identifier	{2 9 3 2 7 16}	INTEGER	o	
									1.1.9	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	
									1.1.9.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	
									1.1.9.2	sourceObjectInst	–	ObjectInstance	c:o	
									1.1.10	stateChange Definition	{2 9 3 2 7 28}	SET OF SEQUENCE	o	
									1.1.10.1	attributeID	–	AttributeId	c:m	

Table G.46/X.282 – sLPConnection Notification support (continued)

Index	Notification type template label	Value of object identifier for notification type	Support		Status	Con-firmed	Non-con-firmed	Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
			Constraints and values	Status											
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}	m						1.1.10.2	oldAttributeValue	–	ANY DEFINED BY attributeID	c:o		
										newAttributeValue	–	ANY DEFINED BY attributeID	c:m		
										monitored Attributes	{2 9 3 2 7 15}	SET OF Attribute	o		
										proposedRepair Actions	{2 9 3 2 7 19}	SET OF CHOICE	o		
										OBJECT IDENTIFIER	–	OBJECT IDENTIFIER	c:o.9		
										INTEGER	–	INTEGER	c:o.9		
										additionalText	{2 9 3 2 7 7}	GraphicString	o		
										additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
										identifier	–	OBJECT IDENTIFIER	c:m		
										significance	–	BOOLEAN	c:o		
										information	–	ANY DEFINED BY identifier	c:m		
										ObjectInfo		Information Syntax SEQUENCE	m		
										sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o		
										attributeList	{2 9 3 2 7 9}	SET OF Attribute	o		
										notification Identifier	{2 9 3 2 7 16}	INTEGER	o		

**Table G.46/X.282 – sLPConnection Notification support (continued)**

Index	Notification type template label	Value of object identifier for notification type	Support						Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
			Constraints and values	Status	Con-firmed	Non-con-firmed	Additional information	Subindex		Notification field name label				
								2.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o		
								2.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m		
								2.1.4.2	sourceObjectInst	–	ObjectInstance	c:o		
								2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o		
								2.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
								2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m		
								2.1.6.2	significance	–	BOOLEAN	c:o		
								2.1.6.3	information	–	ANY DEFINED BY identifier	c:m		
								3.1	ObjectInfo		Information Syntax SEQUENCE	m		
								3.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992"; objectDeletion	{2 9 3 2 10 7}	m					3.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	o		
								3.1.3	notification Identifier	{2 9 3 2 7 16}	INTEGER	o		
								3.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o		
								3.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m		
								3.1.4.2	sourceObjectInst	–	ObjectInstance	c:o		

Table G.46/X.282 – sLPConnection Notification support (*concluded*)

Index	Notification type template label	Value of object identifier for notification type	Support		Status	Con-firmed	Non-con-firmed	Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
			Constraints and values	Con-firmed												
										3.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o		
										3.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
										3.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m		
										3.1.6.2	significance	–	BOOLEAN	c:o		
										3.1.6.3	information	–	ANY DEFINED BY identifier	c:m		

## G.12.7 Parameter

**Table G.47/X.282 – sLPConnection Parameter support**

Index	Parameter template label	Value of object identifier for parameter	Constraints and values	Status	Support	Additional information
1	fRMR	{2 15 0 5 1}	EVENT-INFO communicationsAlarm	m		

## G.13 The LAPB Single Link Protocol Connection Initial Values managed object

### G.13.1 Statement of conformance to the managed object class

**Table G.48/X.282 – sLPConnectionIVMO Managed object class support**

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	sLPConnectionIVMO	{2 15 0 3 6}		

If the answer to the actual class question in Table G.48 is no, the supplier of the implementation shall fill in the actual class support of Table G.49.

**Table G.49/X.282 – sLPConnectionIVMO Actual class support**

Index	Managed object class template for actual class	Value of object identifier for managed object class definition of actual class	Additional information

### G.13.2 Packages

The supplier of the implementation shall state whether or not the packages specified by this managed object of this class are supported, in Table G.50.

**Table G.50/X.282 – sLPConnectionIVMO Package support**

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165 -2:1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	c88		
2	commonSLP Connection-P		Mandatory	m		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c89		
4	sLPConnection IVMO-P		Mandatory	m		
5	t3IVMO-P	{2 15 0 4 3}	"optional Timer T3 of ISO 7776 is supported"	o		
6	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": topPackage		Mandatory	m		
c88: if G.48/1b then – else m c89: if G.50/1a or G.50/5a then m else –						

### G.13.3 Attributes

The supplier of the implementation shall state whether or not the attributes specified by all of the packages instantiated in a managed object of this class are supported, in the Support and Additional information columns of Table G.51. The supplier of the implementation shall indicate support for each of the operations for each attribute supported.

**Table G.51/X.282 – sLPConnectionIVMO Attribute support**

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default		Additional information
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c90		c91		–		–		–		–		
2	interfaceType	{2 15 0 7 18}	ENUMERATED	m		m		m		–		–		m		
3	k	{2 15 0 7 19}	CHOICE	m		m		m		–		–		m		
4	n1	{2 15 0 7 20}	INTEGER	m		m		m		–		–		m		
5	n2	{2 15 0 7 21}	INTEGER	m		m		m		–		–		m		
6	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o		m		x		–		–		x		
7	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	m		m		x		–		–		x		
8	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c92		c93		c94		c94		c94		c94		
9	sLPConnectionIVMOId	{2 15 0 7 31}	GraphicString	o		m		x		–		–		x		
10	sequenceModulus	{2 15 0 7 24}	INTEGER	m		m		m		–		–		m		
11	t1Timer	{2 15 0 7 25}	SEQUENCE	m		m		m		–		–		m		
12	t2Timer	{2 15 0 7 26}	SEQUENCE	m		m		m		–		–		m		
13	t3Timer	{2 15 0 7 27}	SEQUENCE	c95		c95		c95		–		–		c95		
14	t4Timer	{2 15 0 7 28}	SEQUENCE	m		m		m		–		–		m		

c90: if G.50/1a then o else –

c91: if G.50/1a then m else –

c92: if G.50/3a then o else –

c93: if G.50/3a then m else –

c94: if G.48/1b and G.50/3a then x else –

c95: if G.50/5a then m else –

#### G.13.4 Attribute group

**Table G.52/X.282 – sLPConnectionIVMO Attribute group support**

Index	Attribute group template label	Value of object identifier for attribute group	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	timers	{2 15 0 8 1}	t1Timer t2Timer t4Timer t3Timer (condition)	m		m		

### G.13.5 Notifications

**Table G.53/X.282 – sLPConnectionIVMO Notification support**

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
					Con-firmed	Non-con-firmed								
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}	m					1.1	ObjectInfo		Information Syntax SEQUENCE	m		
								1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o		
								1.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	o		
								1.1.3	notification Identifier	{2 9 3 2 7 16}	INTEGER	o		
								1.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o		
								1.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m		
								1.1.4.2	sourceObjectInst	–	ObjectInstance	c:o		
								1.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o		
								1.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
								1.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m		
								1.1.6.2	significance	–	BOOLEAN	c:o		
								1.1.6.3	information	–	ANY DEFINED BY identifier	c:m		

Table G.53/X.282 – sLPConnectionIVMO Notification support (*concluded*)

Index	Notification type template label	Value of object identifier for notification type	Support		Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
			Confirmed	Non-confirmed									
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}	m			2.1	ObjectInfo		Information Syntax SEQUENCE	m			
							2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o		
							2.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	o		
							2.1.3	notification Identifier	{2 9 3 2 7 16}	INTEGER	o		
							2.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o		
							2.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m		
							2.1.4.2	sourceObjectInst	–	ObjectInstance	c:o		
							2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o		
							2.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
							2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m		
							2.1.6.2	significance	–	BOOLEAN	c:o		
							2.1.6.3	information	–	ANY DEFINED BY identifier	c:m		

## G.14 The LAPB Single Link Protocol Machine managed object

### G.14.1 Statement of conformance to the managed object class

**Table G.54/X.282 – sLPPM Managed object class support**

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	sLPPM	{2 15 0 3 4}		

If the answer to the actual class question in Table G.54 is no, the supplier of the implementation shall fill in the actual class support of Table G.55.

**Table G.55/X.282 – sLPPM Actual class support**

Index	Managed object class template for actual class	Value of object identifier for managed object class definition of actual class	Additional information

## G.14.2 Packages

The supplier of the implementation shall state whether or not the packages specified by this managed object of this class are supported, in Table G.56.

**Table G.56/X.282 – sLPPM Package support**

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	c96		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": coProtocolMachineP1		Mandatory	m		
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c97		
4	sLPPM-P		Mandatory	m		
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": topPackage		Mandatory	m		
c96: if G.54/1b then – else m c97: if G.56/1a then m else –						

## G.14.3 Attributes

The supplier of the implementation shall state whether or not the attributes specified by all of the packages instantiated in a managed object of this class are supported, in the Support and Additional information columns of Table G.57. The supplier of the implementation shall indicate support for each of the operations for each attribute supported.

Table G.57/X.282 – sLPPM Attribute support

Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Set by create		Get		Replace		Add		Remove		Set to default	
				Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	c98		c99		–		–		–		–	
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": coProtocolMachineId	{2 9 3 5 7 3}	GraphicString	c100		m		x		–		–		x	
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	c100		m		x		–		–		x	
4	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	ObjectClass	c101		m		x		–		–		x	
5	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	x		m		x		–		–		x	
6	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	c102		c103		c104		c104		c104		c104	

c98: if G.56/1a then (if H.1/20a then o else x) else –  
c99: if G.56/1a then m else –  
c100: if H.1/20a then o else x  
c101: if H.1/20a then m else x  
c102: if G.56/3a then (if H.1/20a then o else x) else –  
c103: if G.56/3a then m else –  
c104: if G.54/1b and G.56/3a then x else –

#### G.14.4 Attribute group

**Table G.58/X.282 – sLPPM Attribute group support**

Index	Attribute group template label	Value of object identifier for attribute group	Constraints and values	Get		Set to default		Additional information
				Status	Support	Status	Support	
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": state	{2 9 3 2 8 1}	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": operationalState	m		c105		
c105: if G.54/1b then x else –								

## G.14.5 Actions

Table G.59/X.282 – sLPPM Action support

Index	Action type template label	Value of object identifier for action type	Constraints and values	Status	Support	Additional information	Subindex	Action field name label	Constraints and values	Status	Support	Additional information
1	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": activate	{2 9 3 5 9 0}		m			1.1	ActionInfo	<b>Information Syntax</b> SET OF SEQUENCE	m		
							1.1.1	identifier	OBJECT IDENTIFIER	m		
							1.1.2	significance	BOOLEAN	o		
							1.1.3	information	ANY DEFINED BY identifier	m		
							1.2	ActionReply	<b>Reply Syntax</b> SET OF SEQUENCE	m		
							1.2.1	identifier	OBJECT IDENTIFIER	m		
							1.2.2	significance	BOOLEAN	o		
							1.2.3	information	ANY DEFINED BY identifier	m		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": deactivate	{2 9 3 5 9 1}		m			2.1	ActionInfo	<b>Information Syntax</b> SET OF SEQUENCE	m		
							2.1.1	identifier	OBJECT IDENTIFIER	m		
							2.1.2	significance	BOOLEAN	o		
							2.1.3	information	ANY DEFINED BY identifier	m		
							2.2	ActionReply	<b>Reply Syntax</b> SET OF SEQUENCE	m		
							2.2.1	identifier	OBJECT IDENTIFIER	m		
							2.2.2	significance	BOOLEAN	o		
							2.2.3	information	ANY DEFINED BY identifier	m		

## G.14.6 Notifications

**Table G.60/X.282 – sLPPM Notification support**

Index	Notification type template label	Value of object identifier for notification type	Constraints and values	Status	Support		Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
					Con-firmed	Non-con-firmed								
1	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}	m					1.1	ObjectInfo		Information Syntax SEQUENCE	m		
								1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o		
								1.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	o		
								1.1.3	notification Identifier	{2 9 3 2 7 16}	INTEGER	o		
								1.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o		
								1.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m		
								1.1.4.2	sourceObjectInst	–	ObjectInstance	c:o		
								1.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o		
								1.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
								1.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m		
								1.1.6.2	significance	–	BOOLEAN	c:o		
								1.1.6.3	information	–	ANY DEFINED BY identifier	c:m		
2	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}	m					2.1	ObjectInfo		Information Syntax SEQUENCE	m		
								2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o		
								2.1.2	attributeList	{2 9 3 2 7 9}	SET OF Attribute	o		
								2.1.3	notification Identifier	{2 9 3 2 7 16}	INTEGER	o		

**Table G.60/X.282 – sLPPM Notification support (continued)**

Index	Notification type template label	Value of object identifier for notification type	Support		Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information	
			Con-	firmed									
						2.1.4	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o			
						2.1.4.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m			
						2.1.4.2	sourceObjectInst	–	ObjectInstance	c:o			
						2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o			
						2.1.6	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o			
						2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m			
						2.1.6.2	significance	–	BOOLEAN	c:o			
						2.1.6.3	information	–	ANY DEFINED BY identifier	c:m			
						3.1	StateChangeInfo		Information Syntax SEQUENCE	m			
						3.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	o			
3	"CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": stateChange	{2 9 3 2 10 14}	m			3.1.2	attribute IdentifierList	{2 9 3 2 7 8}	SET OF AttributeId	o			
						3.1.3	stateChange Definition	{2 9 3 2 7 28}	SET OF SEQUENCE	m			
						3.1.3.1	attributeID	–	AttributeId	m			
						3.1.3.2	oldAttribute Value	–	ANY DEFINED BY attributeID	o			
						3.1.3.3	newAttribute Value	–	ANY DEFINED BY attributeID	m			
						3.1.4	notification Identifier	{2 9 3 2 7 16}	INTEGER	o			

Table G.60/X.282 – sLPPM Notification support (concluded)

Index	Notification type template label	Value of object identifier for notification type	Support		Additional information	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Support	Additional information
			Con-firmed	Non-con-firmed								
					3.1.5	correlated Notifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o			
						3.1.5.1	correlated Notifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m		
						3.1.5.2	sourceObjectInst	–	ObjectInstance	c:o		
						3.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	o		
						3.1.7	additional Information	{2 9 3 2 7 6}	SET OF SEQUENCE	o		
						3.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m		
						3.1.7.2	significance	–	BOOLEAN	c:o		
						3.1.7.3	information	–	ANY DEFINED BY identifier	c:m		

ANNEX H<sup>6</sup>

**MRCS proforma for name binding**

**H.1 Introduction**

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

**H.2 Instructions for completing the MRCS proforma for name binding to produce a MRCS<sup>7</sup>**

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

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<sup>6</sup> Copyright release for MRCS proforma

Users of this Recommendation may freely reproduce the MRCS proforma in this annex so that it can be used for its intended purpose, and may further publish the completed MRCS.

<sup>7</sup> Instructions for completing MRCS proforma are found in ITU-T Rec. X.724 | ISO/IEC 10165-6, clause 5.

### H.3 Statement of conformance to the name binding

Table H.1/X.282 – Name Binding support

Index	Name binding template label	Value of object identifier for name binding	Constraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
1	dLSAP-datalinkEntity-Management	{2 15 0 6 2}	Superior class: datalinkEntity AND SUBCLASSES	o			1.1	Create support		m		
							1.2	Create with reference object		–		
							1.3	Create with automatic instance naming		–		
							1.4	Delete support		m		
							1.5	Delete only if no contained objects		m		
							1.6	Delete contained objects		x		
2	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994"; sap1-communications Entity	{2 9 3 5 6 3}	Superior class: "ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994"; communicationsEntity AND SUBCLASSES	o			2.1	Create support		x		
							2.2	Create with reference object		–		
							2.3	Create with automatic instance naming		–		
							2.4	Delete support		x		
							2.5	Delete only if no contained objects		–		
							2.6	Delete contained objects		–		
3	datalinkEntity-datalinkSubsystem-Management	{2 15 0 6 1}	Superior class: datalinkSubsystem AND SUBCLASSES	o			3.1	Create support		m		
							3.2	Create with reference object		–		
							3.3	Create with automatic instance naming		–		
							3.4	Delete support		m		
							3.5	Delete only if no contained objects		m		
							3.6	Delete contained objects		x		

**Table H.1/X.282 – Name Binding support (continued)**

Index	Name binding template label	Value of object identifier for name binding	Constraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
4	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communicationsEntity -subsystem	{2 9 3 5 6 1}	Superior class: "ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": subsystem AND SUBCLASSES	o			4.1	Create support		x		
							4.2	Create with reference object		-		
							4.3	Create with automatic instance naming		-		
							4.4	Delete support		x		
							4.5	Delete only if no contained objects		-		
							4.6	Delete contained objects		-		
5	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": subsystem-system	{2 9 3 5 6 6}	Superior class: "CCITT Rec. X.721 (1992)   ISO/IEC 10165-2:1992": system AND SUBCLASSES	o			5.1	Create support		x		
							5.2	Create with reference object		-		
							5.3	Create with automatic instance naming		-		
							5.4	Delete support		x		
							5.5	Delete only if no contained objects		-		
							5.6	Delete contained objects		-		
6	eWMAMetricMonitor -ILCDLE- Management	{2 15 0 6 13}	Superior class: ILCDLE AND SUBCLASSES	o			6.1	Create support		m		
							6.2	Create with reference object		m		
							6.3	Create with automatic instance naming		m		
							6.4	Delete support		m		
							6.5	Delete only if no contained objects		m		
							6.6	Delete contained objects		x		

Table H.1/X.282 – Name Binding support (continued)

Index	Name binding template label	Value of object identifier for name binding	Constraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
7	eWMAMetricMonitor -mACDLE-Management	{2 15 0 6 14}	Superior class: mACDLE AND SUBCLASSES	o			7.1	Create support		m		
							7.2	Create with reference object		m		
							7.3	Create with automatic instance naming		m		
							7.4	Delete support		m		
							7.5	Delete only if no contained objects		m		
							7.6	Delete contained objects		x		
8	ILCCLPM-ILCDLE-Management	{2 15 0 6 9}	Superior class: ILCDLE AND SUBCLASSES	o			8.1	Create support		m		
							8.2	Create with reference object		–		
							8.3	Create with automatic instance naming		–		
							8.4	Delete support		m		
							8.5	Delete only if no contained objects		m		
							8.6	Delete contained objects		x		
9	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": clProtocolMachine-entity	{2 9 3 5 6 0}	Superior class: "ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communicationsEntity AND SUBCLASSES	o			9.1	Create support		x		
							9.2	Create with reference object		–		
							9.3	Create with automatic instance naming		–		
							9.4	Delete support		x		
							9.5	Delete only if no contained objects		–		
							9.6	Delete contained objects		–		

**Table H.1/X.282 – Name Binding support (continued)**

Index	Name binding template label	Value of object identifier for name binding	Constraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
10	ILCCOPM-ILCDLE-Management	{2 15 0 6 10}	Superior class: ILCDLE AND SUBCLASSES	o			10.1	Create support		m		
							10.2	Create with reference object		–		
							10.3	Create with automatic instance naming		–		
							10.4	Delete support		m		
							10.5	Delete only if no contained objects		m		
							10.6	Delete contained objects		x		
11	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": coProtocolMachine-entity	{2 9 3 5 6 2}	Superior class: "ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": communicationsEntity AND SUBCLASSES	o			11.1	Create support		x		
							11.2	Create with reference object		–		
							11.3	Create with automatic instance naming		–		
							11.4	Delete support		x		
							11.5	Delete only if no contained objects		–		
							11.6	Delete contained objects		–		
12	mAC-mACDLE-Automatic	{2 15 0 6 7}	Superior class: mACDLE AND SUBCLASSES	o			12.1	Create support		x		
							12.2	Create with reference object		–		
							12.3	Create with automatic instance naming		–		
							12.4	Delete support		x		
							12.5	Delete only if no contained objects		–		
							12.6	Delete contained objects		–		

Table H.1/X.282 – Name Binding support (continued)

Index	Name binding template label	Value of object identifier for name binding	Constraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
13	mAC-mACDLE-Management	{2 15 0 6 8}	Superior class: mACDLE AND SUBCLASSES	o			13.1	Create support		m		
							13.2	Create with reference object		–		
							13.3	Create with automatic instance naming		–		
							13.4	Delete support		m		
							13.5	Delete only if no contained objects		m		
							13.6	Delete contained objects		x		
14	resourceTypeId-ILCDLE-Automatic	{2 15 0 6 11}	Superior class: ILCDLE AND SUBCLASSES	o			14.1	Create support		x		
							14.2	Create with reference object		–		
							14.3	Create with automatic instance naming		–		
							14.4	Delete support		x		
							14.5	Delete only if no contained objects		–		
							14.6	Delete contained objects		–		
15	resourceTypeId-mACDLE-Automatic	{2 15 0 6 12}	Superior class: mACDLE AND SUBCLASSES	o			15.1	Create support		x		
							15.2	Create with reference object		–		
							15.3	Create with automatic instance naming		–		
							15.4	Delete support		x		
							15.5	Delete only if no contained objects		–		
							15.6	Delete contained objects		–		

**Table H.1/X.282 – Name Binding support (continued)**

Index	Name binding template label	Value of object identifier for name binding	Constraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
16	sLPConnection-sLPPM-Automatic	{2 15 0 6 4}	Superior class: sLPPM AND SUBCLASSES	o			16.1	Create support		x		
							16.2	Create with reference object		–		
							16.3	Create with automatic instance naming		–		
							16.4	Delete support		x		
							16.5	Delete only if no contained objects		–		
							16.6	Delete contained objects		–		
17	sLPConnection-sLPPM-Management	{2 15 0 6 5}	Superior class: sLPPM AND SUBCLASSES	o			17.1	Create support		x		
							17.2	Create with reference object		–		
							17.3	Create with automatic instance naming		–		
							17.4	Delete support		m		
							17.5	Delete only if no contained objects		m		
							17.6	Delete contained objects		x		
18	"ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": singlePeerConnection -coProtocolMachine	{2 9 3 5 6 5}	Superior class: "ITU-T Rec. X.723 (1993)   ISO/IEC 10165-5:1994": coProtocolMachine AND SUBCLASSES	o			18.1	Create support		x		
							18.2	Create with reference object		–		
							18.3	Create with automatic instance naming		–		
							18.4	Delete support		x		
							18.5	Delete only if no contained objects		–		
							18.6	Delete contained objects		–		

Table H.1/X.282 – Name Binding support (*concluded*)

Index	Name binding template label	Value of object identifier for name binding	Constraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
19	sLPConnectionIVMO-sLPPM-Management	{2 15 0 6 6}	Superior class: sLPPM AND SUBCLASSES	o			19.1	Create support		m		
							19.2	Create with reference object		–		
							19.3	Create with automatic instance naming		–		
							19.4	Delete support		m		
							19.5	Delete only if no contained objects		m		
							19.6	Delete contained objects		x		
20	sLPPM-IAPBDLE-Management	{2 15 0 6 3}	Superior class: IAPBDLE AND SUBCLASSES	o			20.1	Create support		m		
							20.2	Create with reference object		–		
							20.3	Create with automatic instance naming		–		
							20.4	Delete support		m		
							20.5	Delete only if no contained objects		m		
							20.6	Delete contained objects		x		

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