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STAGES 2 AND 3 DESCRIPTION FOR THE Q3 INTERFACE – CUSTOMER ADMINISTRATION – INTEGRATED SERVICES DIGITAL NETWORK (ISDN), OPTIONAL USER FACILITIES

ITU-T Recommendation Q.824.3

(Previously “CCITT Recommendation”)

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (ITU). The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

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

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

ITU-T Recommendation Q.824.3 was prepared by ITU-T Study Group 11 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 17th of October 1995.

NOTE

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

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SUMMARY

The purpose of this Recommendation is to provide the Stages 2 and 3 description of the Q3 interface between a local exchange and the Telecommunications Management Network (TMN) for the support of configuration management functions in support of customer administration of ISDN optional user facilities (for packet services). Customer administration is a management activity that the network operator performs in order to exchange with the customer all the customer related management data and functions required to offer a telecommunications service and to exchange with the network all the customer related management data and functions necessary for the network to produce that telecommunications service. This Recommendation supports the administration of the customer configuration in the local exchange by the TMN. This Recommendation is part of a series of Recommendations. In this Recommendation the ISDN optional user facilities (for packet services) specific managed objects are defined.

Recommendation Q.824.3

STAGES 2 AND 3 DESCRIPTION FOR THE Q3 INTERFACE – CUSTOMER ADMINISTRATION – INTEGRATED SERVICES DIGITAL NETWORK (ISDN), OPTIONAL USER FACILITIES

(Geneva, 1995)

1 Introduction

1.1 Purpose and scope

Customer administration is a management activity that the network operator performs in order to exchange with the customer all the customer related management data and functions required to offer a telecommunications service and to exchange with the network all the customer related management data and functions necessary for the network to produce that telecommunications service.

The purpose of this Recommendation is to provide the ISDN optional user facilities Stage 2 and 3 description of the Q3 interface between a local exchange and the Telecommunications Management Network (TMN) for the support of configuration management functions.

The Q3 interface is the TMN interface between network elements or Q-adapters which interface to Operations Systems (OSs) without mediation and between OSs and mediation devices as described in Recommendation M.3100.

1.2 Cross-reference

This Recommendation is based on the Stage 1 management service description given in the M.3000-Series Recommendations including Recommendation M.3400. This Recommendation also provides the Stage 2 and 3 descriptions for handling the Customer administration for the ISDN packet optional user facilities based on the service description provided in Recommendations X.2, X.25, X.282, X.283, X.162, I.232, and based on the common Stage 2 and 3 descriptions given in Recommendation Q.824.0. The information model provided by this Recommendation may be used for the Customer administration purposes either over a Q3 interface or over the ISDN UNI as described in Recommendation Q.942.

1.3 Application

The management information included in this Recommendation may be exchanged by implementations of the Common Management Information Service Element (CMISE). The Transaction-Oriented class of OAM&P applications is supported in this Recommendation by defining object classes, their attributes, and their relationships. The protocol suites are given in Recommendations Q.811 and Q.812. No special requirements are identified.

1.4 General overview

1.4.1 Information model diagrams

The following information model diagrams have been drawn for the purpose of clarifying the relations between the different object classes of Customer administration. There are three different types of diagrams:

1) Entity-Relationship Model showing the relationship of the different managed objects.

2) Inheritance Hierarchy showing how managed objects are derived from each other (i.e. the different paths of inherited characteristics of the different managed objects).

3) Naming Hierarchy showing the derivation of names for managed objects (i.e. the different naming paths for instances of managed objects).

These three different diagrams are only for clarification. The formal specification in terms of GDMO templates and ASN.1 type definitions are the relevant information for the implementation of this Recommendation. See Figures 1 to 3.

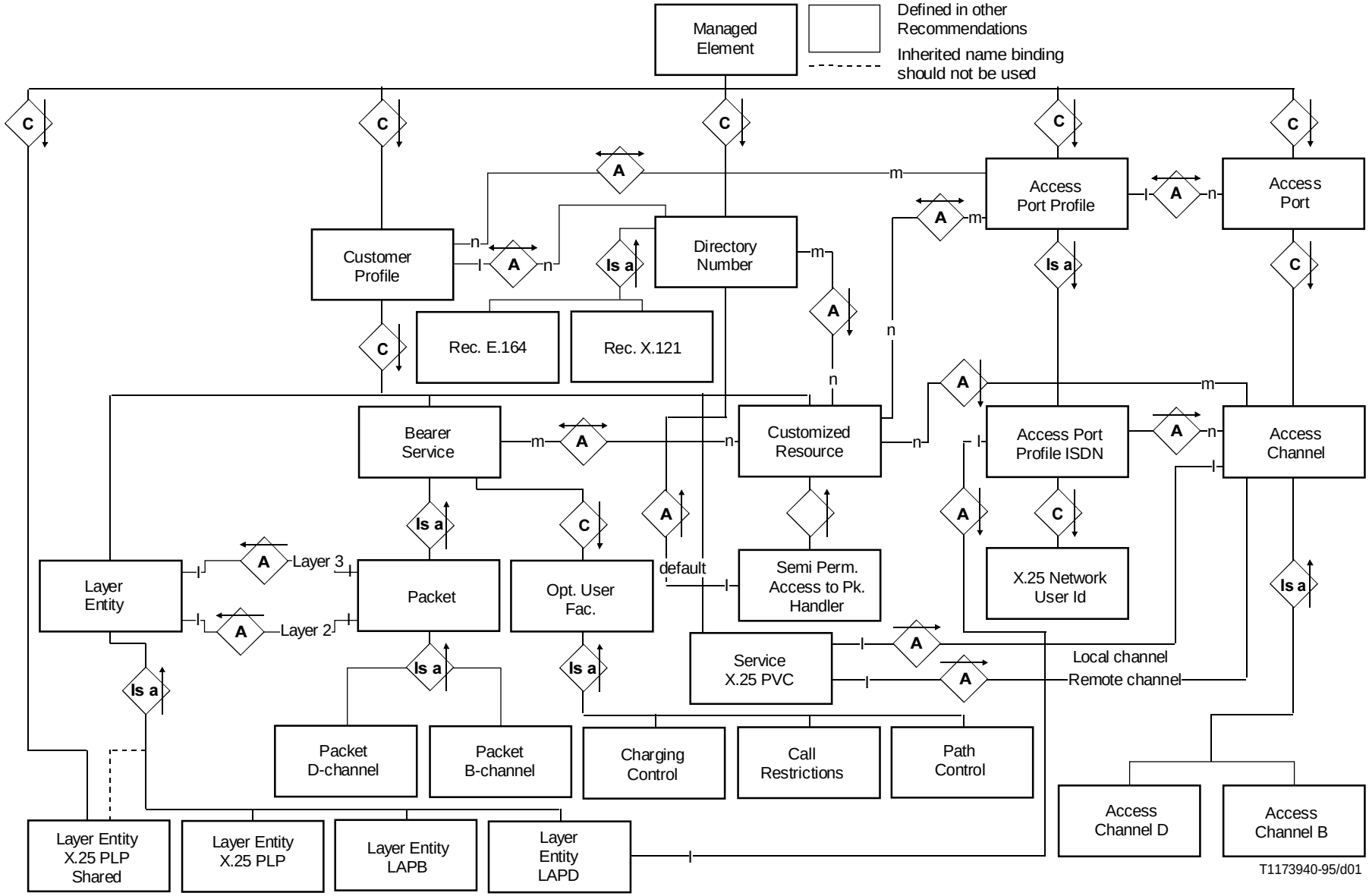
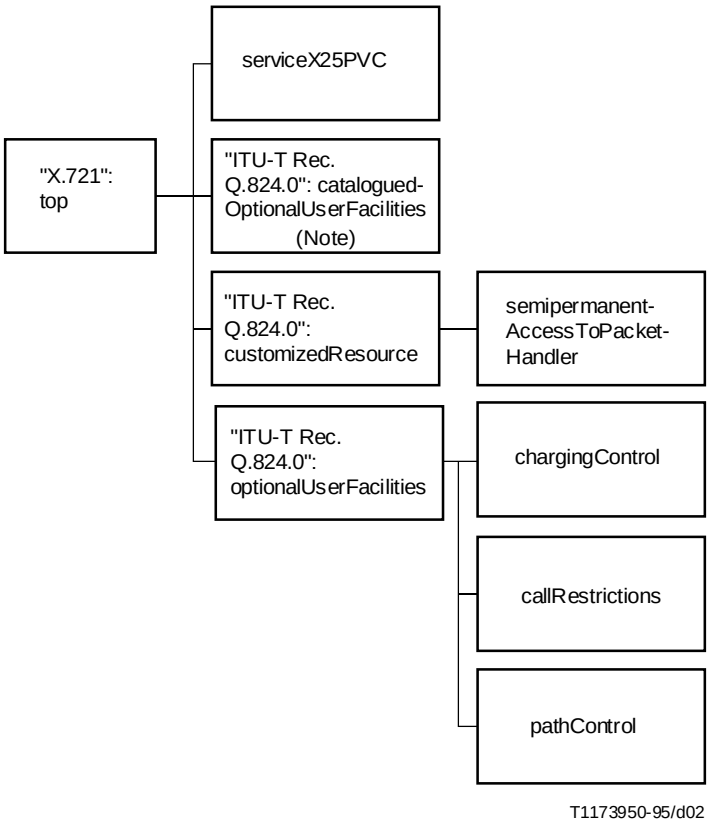


FIGURE 1/Q.824.3

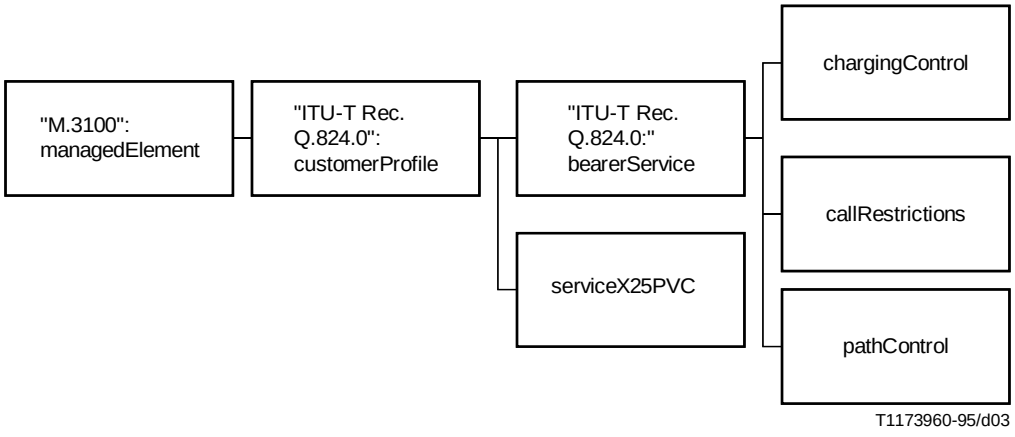
Entity-Relationship



NOTE – No object is currently defined a subclass of this object.

FIGURE 2/Q.824.3

Inheritance hierarchy



NOTE – The indicated naming hierarchy includes reusable name bindings defined in other Recommendations.

FIGURE 3/Q.824.3

Naming hierarchy

1.5 Managed object naming and attribute syntax

Throughout this Recommendation, all attributes are named according to the following guidelines:

- The name of an attribute is composed of the name of an object class followed by the string "Ptr" if and only if the attribute value is intended to identify a specific object class.
- If an attribute value is intended to identify different object classes, a descriptive name is given to that attribute and a description is provided in the attribute behaviour.
- The name of an attribute is composed of the name of an object class followed by the string "Id" if and only if the attribute value is intended to identify the name of the object class holding that attribute.

2 References

The following 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.

- CCITT Recommendation I.232 (1988), *Packet-mode bearer services categories*.
- CCITT Recommendation M.3010 (1992), *Principles for a telecommunications management network*.
- CCITT Recommendation M.3020 (1992), *TMN interface specification methodology*.
- ITU-T Recommendation M.3100 (1995), *Generic network information model*.
- CCITT Recommendation M.3400 (1992), *TMN management functions*.
- ITU-T Recommendation Q.811 (1993), *Lower layer protocol profiles for the Q3 interface*.
- ITU-T Recommendation Q.812 (1993), *Upper layer protocol profiles for the Q3 interface*.
- ITU-T Recommendation Q.824.0 (1995), *Stages 2 and 3 description for the Q3 interface – Customer administration – Common information*.
- ITU-T Recommendation X.2 (1993), *International data transmission services and optional user facilities in public data networks and ISDNs*.
- 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.*
- ITU-T Recommendation X.162 (1995), *Definition of management information for customer network management service for public data networks to be used with the CNMc interface*.
- ITU-T Recommendation X.282 (1995), *Elements of management information related to the OSI data link layer*.
- ITU-T Recommendation X.283 (1993), *Elements of management information related to the OSI network layer*.
- CCITT Recommendation X.700 (1992), *Management framework for open systems interconnection (OSI) for CCITT applications*.
- CCITT Recommendation X.701 (1992), *Information technology – Open Systems Interconnection – System management overview*.
- CCITT Recommendation X.710 (1991), *Common management information service definition for CCITT applications*.

– CCITT Recommendation X.711 (1991), *Common management information protocol specification for CCITT applications*.

– CCITT Recommendation X.720 (1992), *Information technology – Open Systems Interconnection – Structure of management information: Management information model.*

– CCITT Recommendation X.721 (1992), *Information technology – Open Systems Interconnection – Structure of management information: Definition of management information.*

– CCITT Recommendation X.722 (1992), *Information technology – Open Systems Interconnection – Structure of management information: Guidelines for the definition of managed objects*.

– ITU-T Recommendation X.723 (1993), *Information technology – Open Systems Interconnection – Structure of management information: Generic management information*.

3 Optional user facilities object classes

3.1 Generic services

3.1.1 Semi-permanent access to packet handler

The current semi-permanent access to the packet handler managed objects models the case where the packet handler is part of the local switch. The case where the packet handler is external to the local switch is for further study.

```
semiPermanentAccessToPacketHandler        MANAGED OBJECT CLASS
DERIVED FROM                    "ITU-T Rec. Q.824.0":customizedResource;
CHARACTERIZED BY
semiPermanentAccessToPacketHandlerPkg     PACKAGE
        BEHAVIOUR
        semiPermanentAccessToPacketHandlerBhv          BEHAVIOUR
        DEFINED AS "The Semi-Permanent Access to Packet Handler object class is a subclass of the Customized
        Resources managed object and represents a Semi-Permanent (or nailed-up) connection of an ISDN B-channel to the
        Packet Handler function for the switching network element. Each instance of the Semi-Permanent Access to the
        Packet Handler managed object includes pointers to the Access Channel (B-channel), as well as the list of Directory
        Number(s) that are valid for calls over that channel, as well as the Default Directory Number for calls on that
        channel.";;
        ATTRIBUTES
            defaultDirectoryNumberPointer                                   GET-REPLACE;;;
REGISTERED AS       {cAISDNOUFObjectClass 1};
```

3.1.2 Service X.25 Permanent Virtual Circuit (PVC)

```
serviceX25PVC           MANAGED OBJECT CLASS
DERIVED FROM                    "CCITT Rec. X.721":top;
CHARACTERIZED BY
serviceX25PVCPkg          PACKAGE
        BEHAVIOUR
        serviceX25PVCBhv        BEHAVIOUR
        DEFINED AS "This object class represents the characteristics of the Permanent Virtual Circuit service identified in
        Recommendation X.25. The relationships between PVC services for each circuit and managed objects of resources
        (Directory number or Access Port Profile managed objects) are captured by both the "Customized Resource"
        managed object and the Bearer Service managed object that contains the serviceX25PVC managed object.";;
        ATTRIBUTES
            serviceX25PVCId                                             GET SET-BY-CREATE,
            localChannelPtr  REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNOUFModule.localChannelPtrDefault        GET-REPLACE,
            remoteChannelPtr  REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNOUFModule.remoteChannelPtrDefault       GET-REPLACE,
            "ITU-T Rec. X.721":operationalState                         GET,
            "ITU-T Rec. X.283":chargingDirection                        GET-REPLACE,
            localDTEAddress                                             GET-REPLACE,
            "ITU-T Rec. X.283":logicalChannel                           GET-REPLACE,
            "ITU-T Rec. X.283":packetSizes                              GET-REPLACE,
            remoteDTEAddress                                            GET-REPLACE,
            "ITU-T Rec. X.283":remoteLogicalChannel                     GET-REPLACE,
            "ITU-T Rec. X.283":throughputClass                          GET-REPLACE,
            "ITU-T Rec. X.283":virtualCircuitIdentifier                 GET-REPLACE,
            "ITU-T Rec. X.283":windowSizes                              GET-REPLACE;
```

```
        NOTIFICATIONS
            "CCITT Rec. X.721":stateChange,
            "CCITT Rec. X.721":objectCreation,
            "CCITT Rec. X.721":objectDeletion,
            "CCITT Rec. X.721":attributeValueChange;;;
        CONDITIONAL PACKAGES
            localEndpointDChannel PRESENT IF "Source of PVC is D-channel",
            remoteEndpointDChannel PRESENT IF "Destination of PVC is D-channel";
REGISTERED AS    {cAISDNOUFObjectClass 2};
```

3.2 Optional user facilities

3.2.1 Call restrictions

```
callRestrictions    MANAGED OBJECT CLASS
DERIVED FROM        "ITU-T Rec. Q.824.0":optionalUserFacilities;
CHARACTERIZED BY
callRestrictionsPkg        PACKAGE
        BEHAVIOUR
        callRestrictionsBhv        BEHAVIOUR
        DEFINED AS "This object class includes attributes that impose restrictions upon subscribers' optional user Facilities.";;
        ATTRIBUTES
            "ITU-T Rec. X.283":incomingCallBarred                    GET-REPLACE,
            "ITU-T Rec. X.283":outgoingCallBarred                    GET-REPLACE,
            "ITU-T Rec. X.283":oneWayLogicalChannelOutgoing          GET-REPLACE,
            "ITU-T Rec. X.283":oneWayLogicalChannelIncoming          GET-REPLACE,
            "ITU-T Rec. X.283":defaultThroughputClassAssignment      GET-REPLACE;;;
REGISTERED AS    {cAISDNOUFObjectClass 3};
```

3.2.2 Charging Control

```
chargingControl    MANAGED OBJECT CLASS
DERIVED FROM       "ITU-T Rec. Q.824.0":optionalUserFacilities;
CHARACTERIZED BY
chargingControlPkg        PACKAGE
        BEHAVIOUR
        chargingControlBhv        BEHAVIOUR
        DEFINED AS "As described in X2, X.283, charging information is an optional user facility which may be either agreed for a period of time or requested by a DTE for a given virtual call. This object class includes attributes to manage charging in subscriber packet service.";;
        ATTRIBUTES
            "ITU-T Rec. X.283":reverseChargingAcceptance             GET-REPLACE,
            "ITU-T Rec. X.283":localChargingPrevention               GET-REPLACE,
            "ITU-T Rec. X.283":chargingInformation                   GET-REPLACE;;;
REGISTERED AS    {cAISDNOUFObjectClass 4};
```

3.2.3 Path control

```
pathControl        MANAGED OBJECT CLASS
DERIVED FROM       "ITU-T Rec. Q.824.0":optionalUserFacilities;
CHARACTERIZED BY
pathControlPkg        PACKAGE
        BEHAVIOUR
        pathControlBhv        BEHAVIOUR
        DEFINED AS "This object class represents the list of simple optional user facilities available for any packet mode bearer service. Reference to the optional user facilities identified in this class are in X.25. Simple optional user facilities are the ones that require only one attribute to subscribe to it and there will never be any optional user facilities subclass. Instances of optional user facilities set class are contained under the packet Mode Bearer service.";;
        ATTRIBUTES
            "ITU-T Rec. X.283":rPOASubscription                      GET-REPLACE,
            "ITU-T Rec. X.283":callDeflectionSubscription            GET-REPLACE;;;
REGISTERED AS    {cAISDNOUFObjectClass 5};
```

4 Package templates

4.1 Local endpoint D-channel

```
localEndpointDChannel      PACKAGE
        ATTRIBUTES
            localTEIOrSPID                                  GET-REPLACE;
REGISTERED AS      {cAISDNOUFPackage  1};
```

4.2 Remote endpoint D-channel

```
remoteEndpointDChannel     PACKAGE
        ATTRIBUTES
            remoteTEIOrSPID                                 GET-REPLACE;
REGISTERED AS      {cAISDNOUFPackage 2};
```

5 Attribute templates

This clause contains the ASN.1 definitions for all attributes in the described object classes. These definitions identify the function of the attributes and their valid characteristics, such as their valid values, interdependencies, read/write constraints, etc. The attributes are identified by their ASN.1 descriptors.

5.1 Default directory number pointer

```
defaultDirectoryNumberPointer          ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.ObjectInstance;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        defaultDirectoryNumberBhv      BEHAVIOUR
        DEFINED AS "This attribute is used as a pointer to an instance of the Directory Number managed object class that
        corresponds to the default directory number.";;
REGISTERED AS      {cAISDNOUFAttribute 1};
```

5.2 Local channel pointer

```
localChannelPtr                        ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.PointerOrNull;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        localChannelPtrBhv             BEHAVIOUR
        DEFINED AS "This attribute identifies channel assignment at the local end of a PVC. The value of the attribute for
        B-channel PVCs is a pointer value to a semiPermanentAccessToPacketHandler object instance, and for D-channel
        PVCs is a pointer value to an accessChannel??/accessPortProfile?? object instance.";;
REGISTERED AS      {cAISDNOUFAttribute 2};
```

5.3 Local DTE address

```
localDTEAddress                        ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.DirectoryNumber;
MATCHES FOR EQUALITY, ORDERING, SUBSTRINGS;
        BEHAVIOUR
        localDTEAddressBhv             BEHAVIOUR
        DEFINED AS "This attribute represents directory numbers belonging to the Numbering Plan for the ISDN Era.";;
REGISTERED AS      {cAISDNOUFAttribute 3};
```

5.4 Local TEI or SPID

localTEIOrSPID ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.TEIOrSPID;
MATCHES FOR EQUALITY;
BEHAVIOUR
localTEIOrSPIDBhv BEHAVIOUR
DEFINED AS "Based on ISDN terminal type, specifies the appropriate terminal identification where the local end of the PVC terminates. If a non-initializing terminal, then the TEI of the terminal is specified. Otherwise, if an initializing terminal, then the SPID is specified.";;
REGISTERED AS {cAISDNOUFAttribute 4};

5.5 Remote channel pointer

remoteChannelPtr ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.PointerOrNull;
MATCHES FOR EQUALITY;
BEHAVIOUR
remoteChannelPtrBhv BEHAVIOUR
DEFINED AS "This attribute identifies the channel assignment at the remote end of a PVC. The value of the attribute is a choice between NULL and a pointer value to a channel object instance.";;
REGISTERED AS {cAISDNOUFAttribute 5};

5.6 Remote DTE address

remoteDTEAddress ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.DirectoryNumber;
MATCHES FOR EQUALITY, ORDERING, SUBSTRINGS;
BEHAVIOUR
remoteDTEAddressBhv BEHAVIOUR
DEFINED AS "This attribute represents directory numbers belonging to the Numbering Plan for the ISDN Era.";;
REGISTERED AS {cAISDNOUFAttribute 6};

5.7 Remote TEI or SPID

remoteTEIOrSPID ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.TEIOrSPID;
MATCHES FOR EQUALITY;
BEHAVIOUR
remoteTEIOrSPIDBhv BEHAVIOUR
DEFINED AS "Based on ISDN terminal type, specifies the appropriate terminal identification where the remote end of the PVC terminates. If a non-initializing terminal, then the TEI of the terminal is specified. Otherwise, if an initializing terminal, then the SPID is specified.";;
REGISTERED AS {cAISDNOUFAttribute 7};

5.8 Service X.25 PVC Id

serviceX25PVCId ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.NameType;
MATCHES FOR EQUALITY, ORDERING, SUBSTRINGS;
BEHAVIOUR
serviceX25PVCIdBhv BEHAVIOUR
DEFINED AS "This is a naming attribute. If the string choice for the syntax is used, matching on the substrings is permitted. If the number choice for the syntax is used, then matching on ordering is permitted.";;
REGISTERED AS {cAISDNOUFAttribute 8};

6 Name bindings

6.1 Service X.25 PVC

```
serviceX25PVC-customerProfile      NAME BINDING
        SUBORDINATE OBJECT CLASS serviceX25PVC;
        NAMED BY
        SUPERIOR OBJECT CLASS        "ITU-T Rec. Q.824.0":customerProfile AND SUBCLASSES;
        WITH ATTRIBUTE  serviceX25PVCId;
        CREATE
        WITH-AUTOMATIC-INSTANCE-NAMING,
        WITH-REFERENCE-OBJECT;
        DELETE;
REGISTERED AS        {cAISDNOUFNameBinding 1};
```

7 Type definitions

```
CAISDNOUFModule {itu-t(0) recommendation(0) q(17) ca(824) dot(127) isdnouf(3) informationModel(0) ans1Modules(2) cAISDNOUFModule(0)}

DEFINITIONS IMPLICIT TAGS ::= BEGIN

-- EXPORTS Everything;

IMPORTS

OperationalState  FROM Attribute-ASN1Module {joint-iso-ccitt ms(9) smi(3) part2(2) asn1Module(2) 1}

callDeflectionSubscription,
callRedirection,
chargingDirection,
chargingInformation,
cUGwithIncomingAccess,
cUGwithOutgoingAccess,
dBitModification,
defaultPacketSize,
defaultThroughputClass,
defaultThroughputClassAssignment,
defaultWindowSize,
extendedPacketSequencing,
fastSelectAcceptance,
flowControlParameterNegotiation,
incomingCallBarred,
incomingCallBarredWithinCUG,
localChargingPrevention,
localDTEAddress,
logicalChannel,
nonStandardDefaultPacketSizes,
nonStandardDefaultWindowSizes,
oneWayLogicalChannelIncoming,
oneWayLogicalChannelOutgoing,
onlineFacilityRegistration,
outgoingCallBarredWithCUG,
outgoingCallsBarred,
packetRetransmission,
remoteDTEAddress,
remoteLogicalChannel,
reverseChargingAcceptance,
rPOASubscription,
throughputClassNegotiation,
virtualCircuitIdentifier,
FROM NLM { joint-iso-ccitt network-layer (13) management (0) nLM(2) asn1Module (2) 0 }
```

```
ObjectInstance,
ObjectClass
FROM CMIP-1 {joint-iso-ccitt ms(9)  cmip(1) modules(0) protocol(3)}

AlarmStatus,
Boolean,
NameType,
ObjectList,
Pointer,
PointerOrNull
FROM  ASN1DefinedTypesModule {ccitt recommendation m(13) gnm(3100) informationModel(0) asn1Modules(2)
asn1DefinedTypesModule(0)}

DirectoryNumber FROM CACommonModule       {itu-t(0) recommendation(0) q(17) ca(824) dot(127) common(0)
informationModel(0) asn1Modules(2) cACommonModule(0)};

q824-3InformationModel OBJECT IDENTIFIER ::= {itu-t(0) recommendation(0) q(17) ca(824) dot(127) isdnouf(3)
informationModel(0)}
cAISDNOUFObjectClass OBJECT IDENTIFIER ::= {q824-3InformationModel managedObjectClass(3)}
cAISDNOUFPackage OBJECT IDENTIFIER ::= {q824-3InformationModel package(4)}
cAISDNOUFAttribute OBJECT IDENTIFIER ::= {q824-3InformationModel attribute(7)}
cAISDNOUFNameBinding OBJECT IDENTIFIER ::= {q824-3InformationModel nameBinding(6)}
cAISDNOUFAction OBJECT IDENTIFIER ::= {q824-3InformationModel action(9)}

-- default value definitions --

false Boolean ::= FALSE
true Boolean ::= TRUE
null NULL ::= NULL
one INTEGER ::= 1
zero INTEGER ::= 0
minusOne INTEGER ::= –1
emptySet NULL ::= NULL

TerminalEndpointId ::= INTEGER(0..126)
TSPID ::= IA5String(SIZE(1..18))
TID ::= NumericString(SIZE(2))
-- TID has values between 00 and 62 inclusive
SPID ::=  SEQUENCE {
                                    tspid      TSPID,
                                    tid        TID }
TEIOrSPID ::= CHOICE {
                                    tei                [0]      TerminalEndpointId,
                                    spid               [1]      SPID }
localChannelPtrDefault PointerOrNull ::= null : NULL
remoteChannelPtrDefault PointerOrNull ::= null : NULL

END

-- Type definitions --
```

Appendix I

Initial view for extending the model to closed user groups

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

NOTE – This appendix contains an initial view on the direction in which this model will be extended to model closed user groups. The managed objects and name bindings in this appendix are not reflected in the E-R, inheritance and naming diagrams of the main text.

I.1 Call redirection

callRedirection MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.824.0":optionalUserFacilities;
CHARACTERIZED BY
callRedirectionPkg PACKAGE
BEHAVIOUR
callRedirectionBhv BEHAVIOUR
DEFINED AS "This object class represents the list of simple optional user facilities available for any packet mode bearer service. Reference to the optional user facilities identified in this class are in X.25. Instances of optional user facilities set class are contained under the packet Mode Bearer service.";;
ATTRIBUTES
"ITU-T Rec. X.283":callRedirection GET-REPLACE;;;
REGISTERED AS {cAISDNOUFObjectClass ?};

I.2 Closed User Group

cUGPacket MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.824.0":optionalUserFacilities;
CHARACTERIZED BY
cUGPacketPkg PACKAGE
BEHAVIOUR
cUGPacketBhv BEHAVIOUR
DEFINED AS "This object class includes attributes that impose restrictions upon the CUG optional user Facilities subscribers.";;
ATTRIBUTES
"ITU-T Rec. X.283":cUGwithOutgoingAccess GET-REPLACE,
"ITU-T Rec. X.283":cUGwithIncomingAccess GET-REPLACE,
"ITU-T Rec. X.283":incomingCallBarredWithinCUG GET-REPLACE,
"ITU-T Rec. X.283":outgoingCallBarredWithCUG GET-REPLACE;;;
REGISTERED AS {cAISDNOUFObjectClass ?};

I.3 CUG Packet Subscription Option

cUGPacketSubscriptionOption MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.824.0":optionalUsersFacilities;
CHARACTERIZED BY
cUGPacketSubscriptionOptionPkg PACKAGE
BEHAVIOUR
cUGPacketSubscriptionOptionBhv BEHAVIOUR
DEFINED AS "The CUG subscription options object may only be instantiated if either attribute preferredCUGId is assigned a non-NULL value or attribute interCUGaccess is not empty. M_SET operations which would result in preferredCUGId value NULL and interCUGaccess value empty set are not allowed. The value of attribute preferredCUGId should not be NULL when interCUGvalue is "none" or "incomingaccess".";;
ATTRIBUTES
preferredCUGIndex GET-REPLACE,
interCUGaccess GET-REPLACE;;;
REGISTERED AS {cAISDNOUFObjectClass ?};

I.4 Attribute Definition

cUGBarring ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.CUGBarring;
MATCHES FOR EQUALITY;
BEHAVIOUR
cUGBarringBhv BEHAVIOUR
DEFINED AS "This attribute maintains the Intra-CUG restriction of the General subscription option. It may have one of the following values: none, incomingCallsBarred or outgoingCallsBarred.";;
REGISTERED AS {cAISDNOUFAttribute ?};

cUGDataNetworkIdentification ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.CUGDataNetworkIdentification;
MATCHES FOR EQUALITY;
BEHAVIOUR
cUGDataNetworkIdentificationBhv BEHAVIOUR
DEFINED AS "This information is signalled during set-up of a CUG call and serves (in conjunction with the closed user groupInterlockCode) to uniquely identify the CUG in the international network. It can be thought of as the area code of the CUG.";;
REGISTERED AS {cAISDNOUFAttribute ?};

cUGIndex ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.CUGIndex;
MATCHES FOR EQUALITY;
BEHAVIOUR
cUGIndexBhv BEHAVIOUR
DEFINED AS "cUGIndex of General subscription option must be explicitly assigned upon object creation. No two instances of the closed user group object class contained within a single object may have identical values for attribute cUGIndex.";;
REGISTERED AS {cAISDNOUFAttribute ?};

cUGInterlockCode ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.CUGInterlockCode;
MATCHES FOR EQUALITY;
BEHAVIOUR
cUGInterlockCodeBhv BEHAVIOUR
DEFINED AS "The attribute cugInterlockCode must be assigned explicitly upon object creation. No multiple instances of the closed user group object class contained within a single object are allowed to have identical combinations of attribute cugInterlockCode and cugDataNetworkIdentification.";;
REGISTERED AS {cAISDNOUFAttribute ?};

interCUGaccess ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.InterCUGaccess;
MATCHES FOR EQUALITY;
BEHAVIOUR
interCUGaccessBhv BEHAVIOUR
DEFINED AS "Inter-CUG access of per service subscription option. The values are none, outgoingAccess, incomingAccess and outgoingAndIncomingAccess.";;
REGISTERED AS {cAISDNOUFAttribute ?};

preferredCUGIndex ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNOUFModule.PreferredCUGIndex;
MATCHES FOR EQUALITY;
BEHAVIOUR
preferredCUGIndexBhv BEHAVIOUR
DEFINED AS "CUG index of General subscription option.";;
REGISTERED AS {cAISDNOUFAttribute ?};

cUGPacket-network NAME BINDING
SUBORDINATE OBJECT CLASS cUG AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100":network AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Rec. Q.824.0":optionalUserFacilitiesId;
CREATE
WITH-AUTOMATIC-INSTANCE-NAMING,
WITH-REFERENCE-OBJECT;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {cAISDNOUFNameBinding ?};